THE METCALF ENERGY CENTER

Application For Certification 99-AFC-3
Santa Clara County

CALIFORNIA
ENERGY
COMMISSION

PRESIDING MEMBER'S PROPOSED DECISION

JUNE 2001
P800-01-019

Gray Davis, *Governor*

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1516 9th Street
Sacramento, CA 95814

www.energy.ca.gov/sitingcases/metcalf

The Metcalf Energy Center Committee

ROBERT A. LAURIE, Commissioner
Associate Committee Member

WILLIAM J. KEESE, Chairman
Presiding Committee Member

Hearing Office

STANLEY VALKOSKY
Chief Hearing Officer

CALIFORNIA ENERGY COMMISSION
1516 Ninth Street, MS-29
Sacramento, California 95814

Web Site: www.energy.ca.gov

June 15, 2001

By reason of the attached Presiding Member s Proposed Decision (PMPD), the Application for Certification for the Metcalf Energy Center is hereby recommended for approval.

This application has been unique in three ways: (1) the committed and professional intervention by members of the community not represented by legal counsel; (2) the need to override certain local laws and ordinances; and (3) the politicalization of the Commission s hearing process. A brief comment as to each follows.

Regarding the public participation aspects of this case, the hearing process had 34 formal party intervenors, including two municipalities, the developer of an adjacent campus-style industrial park, and representatives of neighborhood community organizations. The community members were not represented by legal counsel, yet many of such parties spent hundreds of hours on hearings and probably as many in preparation for such. As a matter of law and policy, the Commission has encouraged such participation. However, in circumstances such as were presented by this case, I found the burden on these parties to be extraordinary. I believe in complex cases such as this, the public would be better served by a less formalistic procedure. Recent changes in statute and proposed changes in regulations will permit flexibility in this regard, thus responding to the circumstances of each unique case.

As to the second issue, the PMPD recommends an override of local rules, thus permitting the project to be certified. The recommendation does not come lightly. It is recognized that local land use laws, rules and regulations are among the most important decision-making powers of a city or county government. These responsibilities should be respected by a state agency, as they were in this case. State law permits an override if evidence in the record supports specified findings. I believe such evidence exists. Public convenience and necessity dictate the approval of this project, and the evidence shows there are no more prudent and feasible means of achieving public convenience and necessity. The facts and public policy implications thus support an override. It is recognized, however, that this project is unique as to time and place, and thus there is no reason to believe that this decision will be precedent setting in this regard.

Finally, comment must be made here to the dangers of the politicalization of the Energy Commission licensing process. Government decision-making must be credible if it is to be accepted by the governed. At the local government level, credibility is promoted by the high degree of accountability that local elected officials owe to the general populace. This is especially true in local land use cases. Such direct accountability is absent when decision-making is conducted by appointed state officials. Accordingly, credibility must be earned through a history of fair and unbiased decisions. In order for the Energy Commission s decisions to be accepted by the people, fairness and lack of prejudice must be preserved at all costs.

By law, the Commission s process is quasi-judicial in nature and our licensing decisions must be based solely on the record of the case. Similar to any other judicial proceeding, any perception that our decisions might be based on factors external to the evidence weakens the very foundation of the Commission s credibility.

In the instant case, the State s highest official, publicly and purposefully, issued statements calling for a particular outcome to this case. Such statements have raised the issue of bias and prejudice by the Commission. I do, therefore, represent to all parties in this case that my decision is based solely on the record and I have every confidence that my fellow Commissioners will similarly base their decisions solely on the record, as they are individuals of great integrity.

It is understood that the Governor and members of the Legislature are the truest representatives of the People. Their responsibilities in this regard are awesome and must be respected. Their right and obligation to speak for the People must remain unabridged. However, neither the Executive nor the Legislature is in the position of administering the power plant licensing process. That task has, by law, been delegated to the Energy Commission. I would note that a distinction must be made between executive and legislative oversight of the Commission s licensing process, which is always within legislative and executive jurisdiction and should be strongly encouraged and the involvement of a Chief Executive in a particular case promoting a particular outcome. The People s trust in the Commissioners process is of paramount import to the success of the Commission s licensing mission. Extreme effort must be made to avoid implications of loss of credibility or trustworthiness.

The views expressed herein represent mine alone.

ROBERT A. LAURIE
Commissioner and Presiding Member
Metcalf Energy Center Siting Committee

This foreword in no way should be construed as part of the Proposed Decision for the Metcalf project.

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

The Committee hereby submits its Presiding Member's Proposed Decision for the Metcalf Energy Center (Docket Number 99-AFC-3). We have prepared this document pursuant to the requirements set forth in the Commission's regulations. (20 Cal. Code of Regs.,//1749-1752.5.)

During these proceedings the City of San Jose used the Final Staff Assessment as the documentary equivalent of an Environmental Impact Report. We have reviewed this document, the City's actions, and the additional evidence presented by the Applicant and the other parties in arriving at our recommended Decision. [14 Cal. Code of Regs., / 15025(b)(1).]

We recommend the Application for Certification for the Metcalf Energy Center be approved, subject to the Conditions of Certification set forth herein, and that the Commission grant the Applicant a license to construct and operate the project. In reaching this recommendation, we have concluded that the Metcalf Energy Center will result in no significant adverse impacts if constructed and operated in accordance with our Conditions of Certification. The project will not, however, conform with all applicable local ordinances and standards. We therefore have recommended the Commission exercise its authority under Public Resources Code section 25525 and override these noncompliances.

Dated _____ at Sacramento, California.

ROBERT A. LAURIE, Commissioner Presiding Committee Member	WILLIAM J. KEESE, Chairman Associate Committee Member

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

Application for Certification for the **Metcalf Energy Center (Calpine Corporation and Bechtel Enterprises, Inc.)**	**Docket No. 99-AFC-3**

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

I. NOTICE OF AVAILABILITY

The Committee released the Presiding Member s Proposed Decision (PMPD) for the Metcalf Energy Center on June 18, 2001. Copies have been sent to the Proof of Service List, and are also available from the Commission s Publications Unit, 1516 9th Street, MS-13, Sacramento, CA 95814. You may telephone the Publications Unit at (916) 654-5200 and ask for Publication No. P800-01-019. The PMPD may also be viewed on the Commission's Internet Web Site at: **<www.energy.ca.gov/sitingcases/metcalf>**

Members of the public and interested governmental agencies may submit written comments on the PMPD. The public comment period ends on July 19, 2001. All comments must be received ***no later than 3:00 p.m. on July 19, 2001***, by the Commission s Docket Unit, 1516 9th Street, Sacramento, CA 95814. Identify all comments with Docket No. 99-AFC-3.

II. NOTICE OF CONFERENCE

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

THURSDAY, July 26, 2001
Beginning at 6:00 p.m.
County of Santa Clara
General Services Agency Auditorium
1555 Berger Drive, Building 2
San Jose, California 95112
(Wheelchair Accessible)

Applicant, Staff, and all other formal parties wishing to participate at this Conference must file written comments on the PMPD. These comments shall be served and filed with the Commission's Docket Unit ***no later than 3:00 p.m., July 19, 2001***. Members of the general public wishing to participate at this Conference should also submit their written comments by the same date.

Comments should focus on the content of the PMPD, and not restate arguments previously made during the hearing and briefing periods. Depending upon the number of parties and members of the public in attendance at this Conference, the Committee may limit the time available for each presentation.

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

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

Technical questions should be directed to the Commission s Project Manager, Paul Richins, at (916) 654-4074, or email: **<prichins@energy.state.ca.us>**

Questions of a legal or procedural nature should be addressed to Stanley Valkosky, the Chief Hearing Officer, at (916) 654-3893.

Dated on June 18, 2001, at Sacramento California.

ROBERT A. LAURIE, Commissioner Presiding Member	WILLIAM J. KEESE, Chairman Associate Member

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INTRODUCTION

These proceedings encompass perhaps the most contested power plant proposal in the Commission's siting experience. In addition to the inherent complexity of placing a facility such as the Metcalf Energy Center (MEC) in an urban area committed and organized local opposition, competing development interests, political rhetoric and posturing, and the heightened public anxiety and debate concerning the State's energy situation have each played a part in elevating the profile and the complexity of this case. Most significant, however, is the factor of failed expectations. It is clear to us that Applicant, and Commission staff, fully expected the City of San Jose to take certain land actions, including annexation and zoning changes, which would have obviated the need for much of the dispute reflected in our record. The City did not.

As a result, we must decide whether or not the overall interests of the State are sufficient to "override" the City's actions. We believe they are and that the record fully supports our decision.

We are aware of the sometimes acrimonious allegations over the propriety of conduct attributed to various parties. We have done, we believe, all that is possible to insulate ourselves from this oftentimes rancorous flurry of accusation and innuendo, and have confined our deliberations to the factual record as developed throughout this process.

We do not expect that anyone will fully endorse all aspects of this Decision. The various positions of the parties and their competing interests simply eliminated achieving a mutually acceptable solution on many issues. We have, however, exerted our best efforts at reasonably resolving all matters, based on the record before us.

Finally, this Decision is based exclusively upon the record established during these certification proceedings and summarized herein. It contains our rationale for concluding that the Metcalf Energy Center may now be licensed. We have independently evaluated the evidence presented, explained our rationale and provided references to the record, and specified the measures required to ensure that the MEC is, to the greatest extent possible, designed, constructed, and operated in the manner necessary to protect public health and safety, promote the general welfare, and preserve environmental quality.

A. SUMMARY OF THE PROPOSED DECISION

As proposed, the MEC would be located partially in the City of San Jose and partially in the County of Santa Clara. The site lies at the southern base of Tulare Hill in the northern Coyote Valley, to the west of Monterey Highway and south of the Metcalf Road intersection. The site is bordered by Fisher Creek to the north and west and the Union Pacific Railroad right-of-way to the east. Blanchard Road is to the south. During the construction phase, Applicant will use a temporary 20-acre construction laydown area adjacent to and south of the proposed power plant site. The site is currently zoned for agricultural uses.

The MEC is a combined cycle, natural gas-fired power plant nominally rated at 600 megawatts. Project construction would likely commence three to four months after certification with capital costs in the range of $300-400 million. Project construction would create a peak workforce of about 400 over a two-year period; the project will employ 20 permanent operational personnel. Applicant desires to commence commercial operation in time to serve the summer load of 2003. Applicant has consistently represented that it will sell the project's power to the California market.

B. SITE CERTIFICATION PROCESS

The MEC and its related facilities fall within Commission licensing jurisdiction. (Pub. Resources Code, §§ 25500 et seq.). During its licensing proceedings, the Commission acts as the lead state agency under the California Environmental Quality Act (Pub. Resources Code, §§ 25519 (c), 21000 et seq.). The Commission's certification process provides a thorough, timely review and analysis of all aspects of a 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.

The Commission's process and associated documents are functionally equivalent to the traditional Environmental Impact Report process. (Pub. Resources Code, § 21080.5.) It is designed to allow review of a project to be completed within a limited period of time; a license issued by the Commission is in lieu of other state and local permits.

Significantly, 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 the same legal rights and duties as the project developers. Public participation is encouraged at every stage, and our process requires substantially more opportunities for public participation and review than does the traditional CEQA process. Moreover, as explained in subsequent portions of this document, we have fully and fairly examined the positions formally espoused by various Internvenors and members of the public. On balance, we believe that the participation of the public has resulted in a painstaking scrutiny of the Applicant's proposal, as well as the development of Conditions of Certification which extensively reduce and safeguard against potential project impacts.

The certification process begins when an Applicant submits the Application for Certification (AFC). Commission staff reviews this submission, and recommends to the Commission whether or not the accompanying information is adequate to permit formal review to commence. Once the Commission determines that an AFC contains sufficient analytic information, it appoints a Committee of two Commissioners to conduct the licensing process.

The initial portion of the certification process is weighted heavily toward ensuring public awareness of the proposed project and obtaining such further technical information as is necessary. 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. During this phase, 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 proposed project in the Preliminary Staff Assessment (PSA), which is made available for public comment. Staff's responses to public comment on the PSA and its complete analysis are published in the Final Staff Assessment (FSA).

The Committee also conducts various public events, including at least one Prehearing Conference, to assess the adequacy of available information, identify issues, and determine the positions of the various participants. Information gleaned from these events forms the basis for a Hearing Order organizing and scheduling formal Evidentiary Hearings. At these hearings, all formal parties are able to present testimony, under oath or affirmation, which is subject to cross-examination by other parties and to questioning by the Committee. The public may also comment on a proposed project at these hearings. Evidence adduced during these hearings provides the basis for the decision-makers' analysis.

This analysis, in turn, appears in a Committee recommendation to the full Commission in the form of a Presiding Member's Proposed Decision (PMPD), which is available for a public review period of at least 30 days. This document provides the Committee's recommendation to the full Commission concerning a project's ultimate acceptability. The PMPD also determines a project's conformity with applicable laws, ordinances, regulations, and standards. Depending upon the extent of revisions necessary in reaction to comments received on the PMPD, the Committee may elect to publish a revised version. If so, this latter document 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, the members of the Committee, and ultimately the Commission, serve as fact-finders and decision-makers. Other parties, including the Applicant, Commission staff, and formal Intervenors function independently and with legal status equal to one another. An "ex-parte" rule prohibits parties from communicating on substantive matters with the decision-makers, their staffs, or assigned hearing officer unless these communications occur on the public record.

C. PROCEDURAL HISTORY

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

On April 30, 1999, the Calpine Corporation and Bechtel Enterprises, Inc. filed an Application for Certification (AFC) seeking approval from the Commission to construct and operate the MEC. On June 23, 1999, the Commission found the AFC to be data adequate, which began Staff's analysis of the project. The

Applicant, Calpine/Bechtel, filed Supplements A, B and C to their AFC on October 1, 1999, October 15, 1999, and February 15, 2000, respectively.

The Committee scheduled its initial public event, an "Informational Hearing and Site Visit," by notice dated June 25, 1999. This notice was sent to all known or expected to be interested in the proposed project, including the owners of land adjacent to, or in the vicinity of, the MEC. Notice was also published in a local general circulation newspaper.

The Committee conducted the Informational Hearing in San Jose on July 12, 1999. At this event, the Committee and other participants discussed the proposed MEC, described the Commission's review process, and explained opportunities for public participation. The parties also toured the site where the MEC will be situated.

Over the course of the next several months, Commission staff held numerous public events to assess the status of the project, including submission of necessary information by Applicant. Staff held the first of its public workshops on August 3, 1999, and continued to hold many more publicly noticed workshops in San Jose on technical areas such as Air Quality, Water Resources, Biological Resources, Project Site Alternatives, and Transmission System Engineering. Several of those workshops were jointly sponsored by Staff and the City of San Jose District 2 Metcalf Energy Center Advisory Committee.

Staff prepared both a Preliminary and Final staff assessment, and conducted a series of workshops in San Jose to discuss findings, proposed mitigation, and proposed compliance monitoring requirements. Six days and four evenings of workshops on the PSA were held in south San Jose during June 2000. During approximately 50 hours of workshops the Applicant, Intervenors, agencies, the public, and Staff discussed the PSA and outstanding issues.

In addition to these and approximately 20 more workshops, extensive coordination occurred with the numerous local, state, and federal agencies that have an interest in the MEC such as the City of San Jose, County of Santa Clara, California Independent System Operator (Cal-ISO), Bay Area Air Quality Management District, U.S. Environmental Protection Agency, the Regional Water Quality Control Board, the U.S. Fish and Wildlife Service, Department of Fish and Game, as well as numerous Intervenors and the interested residents of the community.

The Committee held an initial Status Conference on December 16, 1999, and a second conference on July 19, 2000. The Committee then held a Prehearing Conference on November 30, 2000, the purpose of which was to have a thorough discussion of the process and procedures to be utilized during the Evidentiary Hearings. The Committee conducted Evidentiary Hearings in San Jose on January 8, 9, 17, 18, 19, 30, and 31, 2001; February 15 and 28, 2001; March 1, 2, 12, 13 and 14, as well as a hearing to receive public comment on March 23, 2001. At these publicly-noticed hearings all parties were afforded the opportunity to present evidence, cross examine witnesses, and to rebut the testimony of other parties, thereby creating an evidentiary record which forms the basis for the Commission Decision. The hearings before the Committee also allowed all parties to argue their positions on disputed matters and provided a forum for the Committee to receive comments from the public and other governmental agencies. During this review process, the Committee issued nearly 50 Orders or Rulings, approximately 32 Notices, and held 20 hearings or conferences.

Formal Intervenors in this process include: California Unions for Reliable Energy, City of Morgan Hill, Santa Teresa Citizens Action Group, Scott and Donna Scholz, Jeffrey Wade, Californians for Renewable Energy, Paul R. Burnett, Robert F. Williams, T.H.E. P.U.B.L.I.C., Michael Murphy, Michael A. Grothus, James L. Cosgrove, Rancho Santa Teresa Swim & Racquet Club, Coyote Valley

Research Park, LLC, and Coyote Valley Properties, LLC, Issa Ajlouny, and Mirant Potrero, LLC.

After reviewing the evidentiary record, the Committee published its Presiding Member's Proposed Decision on June 18, 2001. The 30-day comment period on the PMPD will end on July 19, 2001.

The Committee will conduct a public conference on Thursday, July 26, 2001, in San Jose at the County of Santa Clara General Services Agency Auditorium, to receive comments on the PMPD. If there are no comments that would change the substantive findings and conclusions contained in the PMPD, the Commission will soon thereafter conduct a hearing and consider adoption of the PMPD along with any Errata (containing clarifications and corrections based on comments) at a regularly scheduled Business Meeting.

D. NEED CONFORMANCE

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

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

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

As a result, an Application for Certification (AFC) that reaches final Commission decision after January 1, 2000 is not subject to a determination of need conformance. Since the final decision on the AFC in this case will occur after January 1, 2000, the Commission is not required to include a need conformance finding. Applicant and Staff agree on this interpretation of the pertinent statutory framework. (1/8/01 RT 14; Ex. 7, p. 25.)[1]

[1] We note Intervenor Williams believes the ". . . need for new plants is almost solved . . . " and suggests "grid management" is the pertinent issue. [Williams' Opening Brief (March 23, 2001), p. 5.] The Commission can, however, address only those matters within its jurisdiction; grid management is not one of them.

I. PROJECT DESCRIPTION AND OBJECTIVES

***NOTE**: References to the reporter's transcripts (RT) of this proceeding appear throughout this Decision. These are abbreviated according to month, day, year, page and, if necessary, line reference. Thus, the transcript reference for page 10 of a January 2, 2001 hearing would be "1/2/01 RT 10"; reference to lines 7 through 9 of this page would be abbreviated as "1/2/01 RT 10:7-9."*

Calpine Corporation and Bechtel Enterprises, Inc. (Applicant), a partnership, is seeking approval to construct and operate the Metcalf Energy Center (MEC), a 600 megawatt (MW), natural gas-fired, combined cycle power plant. The project's actual maximum generating capacity will likely differ from, and could exceed, this nominal megawatt rating.[2] (Ex. 7, p. 15.)

Applicant is developing the MEC to sell electricity in California's electricity market. Overall anticipated availability for the MEC is between 92 and 98 percent, operating approximately seven days a week, 24 hours a day. The proposed project is a merchant facility, not owned by a utility or its affiliate.
(Ex. 7, p.15.)

This section provides an overview of the proposed project and its objectives as described by Applicant and clarified during the evidentiary hearings. This essentially includes the location of the project, its major components, and the major electrical generation systems. In our view, the project clearly encompasses components – such as the linear and other facilities – intrinsically related to the power plant. This approach is consistent with our longstanding interpretation of our enabling statute and implementing regulations, captures the totality of the project as proposed by Applicant (see, e.g. 1/18/01 RT 221, 235),

[2] The generating capability of combustion turbine generators depends upon certain variables such as ambient temperature, the density of ambient air, or whether steam injection into the expansion turbine section of the machine is employed. The output of steam turbine generators similarly depends upon ambient conditions, as well as the availability of steam produced in the heat recovery steam generators. (1/8/01 RT 293-295.) The testimony indicates that Applicant predicts the likely maximum generation of the power plant ". . . will be something on the order of 580 megawatts . . . " (1/8/01 RT 294:20-22), but that for study purposes the 600 MW characterization was used. (1/8/01/ RT 294:23-25 to 295:1-2.)

and is necessary in order to assess the overall environmental impacts. We thus do not adopt the approach advocated by the City of San Jose (City) which would essentially result in removing certain elements of the project from our review. (See, City Opening Brief (March 23, 2001), pp. 17-18.) Furthermore, we do not address the contentions raised by the City such as the ability of the Commission to approve expansion of the City's recycled water system, wastewater treatment plant, or sanitary sewer system in this portion of our Decision. (City of San Jose, Opening Brief (March 23, 2001), pp. 17-18; see also, Opening Brief of Californians for Renewable Energy (CARE; March 23, 2001, p. 1.) Matters of this nature are addressed in the appropriate portions of this Decision dealing with substantive topic areas. Similarly, we do not address here the City's arguments concerning the persuasive merits of the project's stated objectives (City's Reply Brief (April 4, 2001), pp. 1-2); this matter is deferred to the "Alternatives" discussion.

SUMMARY AND DISCUSSION OF THE EVIDENCE

Project Location

The 14-acre MEC site is located partially in the City of San Jose and partially in the County of Santa Clara[3] (see **Project Description Figure** 1). The site lies at the southern base of Tulare Hill in northern Coyote Valley to the west of Monterey Highway and the Union Pacific Railroad right-of-way, between Metcalf Road to the north and Blanchard Road to the south. The site is bordered by Fisher Creek to the north and west. (Ex. 6A, p. 2; Ex. 7, p. 15; Applicant's Group 1 and 2 Opening Brief (March 23, 2001), pp. 1-1 – 1-2.)

[3] Roughly, the northern two-thirds of the project would be within the County; the remaining one-third within the City. (1/8/01 RT 35-36.)

Project Description – Figure 1 - NOT INCLUDED IN ON-LINE PMPD

Metcalf Energy Center – Regional Setting

Source: Ex. 7, p. 15

This site will accommodate the generation facilities including the on-site landscaping, setbacks, water storage tanks, parking, control/administrative building, water treatment building, cooling tower, switchyard, emission control equipment, and generation equipment. (Applicant's Group 1 and 2 Opening Brief (March 23, 2002), p. 1-2.) Applicant has site control.[4] (1/8/01 RT 34-35, 98.) The nearest substantial residential development is on the other side of Tulare Hill, approximately one-half mile away. (1/8/01 RT 64.)

A ten acre parcel adjacent to and south of the proposed power plant site will be used temporarily as a laydown area during the construction phase. The laydown area will be returned to its natural preexisting state after construction is completed. (Ex. 6A, p. 2; Ex. 7, p. 15.)

Power Plant

The plant will consist of two combustion turbine generators (CTG) equipped with steam injection power augmentation capabilities; two heat recovery steam turbine generators (HRSG) with duct burners; a single condensing steam turbine generator (STG); a mechanical draft (wet/dry) plume-abated cooling tower; associated support equipment; and a 230-kilovolt (kV) switching station. Natural gas will be burned in the combustion turbine generators. (Ex. 7, pp. 15, 16.)

Each CTG will generate a nominal 185 MW. The CTG exhaust gases will be used to generate steam in the HRSGs. The HRSG units will include 145-foot high exhaust stacks. (Ex. 7, p. 16.) The HRSGs will use reheat design with duct firing. Steam from the HRSGs will be admitted to a condensing STG. The steam turbine will produce a nominal 230 MW. Cooling towers equipped with a plume abatement system will be located at the west end of the site. (Ex. 7, p. 16.) The project is expected to have an overall annual availability in the general range of

[4] This is based on Applicant's testimony. Statements by Mr. Oliver Kraemer suggest otherwise. (1/30/01 RT 359-361.)

92 to 98 percent. Associated equipment will include selective catalytic reduction (SCR) systems necessary to meet air emissions standards.

The power will be produced by the two CTGs and the STG. (Ex. 6A, p. 4.) Thermal energy will be produced in the CTGs through the combustion of natural gas, which will be converted into the mechanical energy required to drive the combustion turbine compressors and electric generators. Two Siemens-Westinghouse "F" technology CTGs have been selected for MEC. Each CTG system will consist of a CTG with supporting systems and associated auxiliary equipment. The CTGs will have power augmentation capability through the use of steam injection upstream of the turbine section. The CTGs will be equipped with the following required accessories to provide safe and reliable operation: inlet air fogging systems; inlet air filters; single lube oil cooler; dry, low NOx combustion system; compressor wash system; fire detection and protection system; and fuel heating system. The CTGs and accessory equipment will be contained in metal acoustical enclosures. (Ex. 6A, p. 4.)

CTG combustion air will flow through the inlet air filters and inlet air fogging system along with associated air inlet ductwork, will be compressed and then flow to the CTG combustion sections. Natural gas fuel will be injected into the compressed air in the combustion sections' combustors and ignited. The hot combustion gases will expand through the turbine sections of the CTGs, causing them to rotate and drive the electric generators and CTG compressors. The hot combustion gases will exit the turbine sections and enter the HRSGs, where they will heat water (feedwater) that will be pumped into the HRSGs.

The feedwater will be converted to superheated steam and delivered to the steam turbine at three pressures: high-pressure (HP), intermediate pressure (IP), and low pressure (LP). High pressure steam, delivered to the HP section of the steam turbine, will exit the HP section as "cold reheat" steam and be combined with IP steam to pass through the reheater section of the HRSGs.

This mixed, reheated steam (called “hot reheat”) will then be delivered to the IP steam turbine section. Steam exiting the IP section of the steam turbine will be mixed with LP steam and expanded in the LP steam turbine section. Steam leaving the LP section of the steam turbine will enter the surface condenser, transfer heat to circulating cooling water, and be condensed to water. The condensed water, or condensate, will be delivered to the HRSG feedwater system. The cooling water will circulate through a cooling tower where the heat will be rejected to the atmosphere. (Ex. 6A; Applicant’s Group 1 and 2 Opening Brief (March 23, 2001), p. 1-4.)

The HRSGs will provide for the transfer of heat from the exhaust gases of the CTGs to the feedwater, which will become steam. The HRSGs will be three-pressure, natural circulation units equipped with inlet and outlet ductwork, duct burners, insulation, lagging, and separate exhaust stacks. Major components of each HRSG will include an LP economizer, LP drum, LP evaporator, LP superheater, IP economizer, IP evaporator, IP drum, IP superheater, HP economizer, HP evaporator, HP drum, and HP superheaters. The LP economizer will receive condensate from the condenser hot well via the condensate pumps. The LP economizer will be the final heat transfer section to receive heat from the combustion gases before they are exhausted to the atmosphere. Duct burners will be installed in the HRSGs. These burners will provide the capability to increase steam generation and greater operating flexibility and improved steam temperature control. The duct burners will burn natural gas. The duct burner for each HRSG will be sized to release up to 200 million British thermal units (MMBTUs higher heating value basis) per hour per HRSG. (Ex. 6A.)

The HRSGs will be equipped with an SCR emission control system that will use aqueous ammonia in the presence of a catalyst to chemically reduce the oxides of nitrogen (NOx) in the CTG exhaust gas to nitrogen and water, thereby

reducing the concentration of NOx in the exhaust gases. The catalyst modules will be located in the HRSG casings. (1/8/01 RT 28; Ex. 6A, p. 5.)

The STG will consist of a reheat steam turbine, gland steam system, lubricating oil system, hydraulic control system, and steam admission/induction valving.

The bulk of the electric power produced by the facility will be transmitted to the Pacific Gas and Electric (PG&E) grid. Some power will be used on-site to power auxiliaries such as pumps and fans, control systems, and general facility loads, including lighting, heating, and air conditioning. Some will also be converted from alternating current (AC) to direct current (DC) to power protective relays, and for use as backup power for control systems and for other uses.

Applicant proposes an architectural treatment (architectural screening/façade) around the Heat Recovery Steam Generators intended to make the plant consistent with the design qualities of the office structures planned for the adjacent industrial lands and to make the plant attractive in its own right. (1/8/01 RT 27-28; Ex. 4; Ex. 5; Ex. 6A, pp. 1-2; Ex. 7, p. 16.)

Access

A 900-foot long, two-lane road and railroad crossing, built to city standards, will allow access to the site from Monterey Highway. The road will cross the Union Pacific Railroad right-of-way at Blanchard Road and parallel the tracks north to the MEC site. Ultimately, Applicant proposes to construct a 1500-foot long, two lane western access road if and when dedicated city streets are developed for the Coyote Valley Research Park and Calpine/Bechtel is granted the necessary rights to access this road system. (Ex. 7, p. 16; Applicant's Group 1 and 2 Opening Brief (March 23, 2001), pp. 1-2 to 1-3.)

The project site is adjacent to the area's main rail line. Applicant will install a temporary rail spur so that large pieces of equipment may be delivered during construction. (1/8/01 RT 26.) The spur will be removed following completion of construction. (Ex. 6A, p. 3.)

Linear Facilities

The linear facilities (electric transmission line, natural gas line, and water supply and wastewater lines) are described below and are depicted on the **Project Description Figure 2 Local Setting** map. (Ex. 7, p. 16.)

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Project Description – Figure 2 - NOT INCLUDED IN ON-LINE PMPD

Metcalf Energy Center – Local Setting

Source: Ex. 7, p. 16

The power plant is adjacent to existing PG&E transmission lines that are connected to the Metcalf Substation. Electricity generated by MEC will be delivered to the transmission grid via a new 230 kV transmission tie-line approximately 240 feet in length. This overhead line will connect into PG&E's existing 230 kV Metcalf-Monte Vista No. 4 line which runs east-west along the northern edge of the project boundary. No new transmission towers will be required. (1/8/01 RT 24-25; Ex. 6A, p. 1; Applicant's Group 1 and 2 Opening Brief (March 23, 2001), p. 1-2.)

The project will use approximately 2.9 to 5.8 million gallons of recycled water per day for cooling purposes. Applicant proposes to obtain this water supply from the South Bay Water Recycling Program (SBWR) through one of two local water retailers: San Jose Municipal Water Division (MUNI); or Great Oaks Water Company. This will necessitate the construction of a new 10.2-mile, 20-inch recycled water supply line. The recycled water pipeline would begin north of the power plant site and weave its way along paved city streets, traveling primarily through residential and commercial areas, until reaching Fisher Creek at Santa Teresa Boulevard. South of Fisher Creek the recycled water pipeline would turn northeast, travelling through agricultural land on its way to the MEC site. (Ex. 7, p. 17; Applicant's Group 1 and 2 Opening Brief (March 23, 2001), p. 1-2.)

More specifically, the route begins at the intersection of Sylvandale and Senter Road, follows the latter southeast, then west approximately 1.4 miles to Monterey Road. The route continues approximately one-half mile along Monterey Road to Skyway Drive. It then turns southwest, following Skyway Drive for about four-tenths of a mile to Snell Avenue. On Snell Avenue, the route proceeds approximately seven tenths of a mile to Chenoweth Avenue, where it turns east. It continues approximately four miles east on Chenoweth, south on Lean Avenue, east on Blossom Hill Road, south on Beswick Drive, takes a slight jog on Cottle Road to head east on Raleigh Road, south on Endicott Boulevard, southeast along While Plains Road, crosses under Highway 85, and heads southeast along

Via Del Oro to Great Oaks Boulevard, where it then heads southwest to Santa Teresa Boulevard. At that point, the pipeline route proceeds along Santa Teresa Boulevard to the plant site. (1/18/01 RT 88-89.)

Back-up water will be supplied either by the water retailer or by wells located on-site or approximately one mile south of the project. Domestic water supply pipelines include a 1.25-mile, 24-inch pipeline along the western portion of the railroad right-of-way from the MEC to San Jose MUNI Well 23 near Bailey Road and a pipeline from the MEC site to Great Oaks Water Company's system located on Santa Teresa Boulevard. (Ex. 7, p. 17.)

A combined industrial wastewater and sanitary sewer line (less than a mile in length) will be constructed along Fisher Creek to the City's existing sanitary sewer line that runs along Santa Teresa Boulevard.

During baseload operations, it is expected that the project will use a maximum of 99,000 MMBTUs/day of natural gas. Applicant proposes to build a new 16-inch diameter fuel gas pipeline from the MEC to PG&E's existing Line 300, a major natural gas transmission line along the eastern side of US 101. The gas pipeline is sized to permit operation of the turbines and duct burners at full power. (Ex. 7, p. 17.) A gas metering station will be installed at the backbone pipeline. (Ex. 12.)

About one-third of the gas pipeline route is within the City of San Jose and the remainder is within unincorporated Santa Clara County. Existing land use along the gas pipeline is primarily park, vacant, and agricultural land. The route traverses areas designated PL (Other Public Open Lands) and P (Regional Parks, Existing) on the County Land Use Plan and Campus Industrial on the San Jose Land Use Diagram. (Ex. 7, p. 17.)

Construction and Operation

Calpine/Bechtel estimates the capital costs of the Metcalf Energy Center to be $300-$400 million. Applicant expects to employ a peak construction workforce of about 400 over a two-year period and a permanent workforce of 20 for plant operations. Construction payroll costs are estimated to be $40.8 million, while the annual operations payroll is expected to be $1 million. (Ex. 7, p. 15.)

Construction of the MEC, from site preparation to commercial operation, is expected to take approximately 18 to 24 months. Applicant anticipates commercial operation by the summer of 2003. (1/8/01 RT 88-90; Ex. 7, p. 15.)

Project Objectives

In summary, the principal objectives of the project are to:

- Generate and sell power in a deregulated marketplace;
- Locate a generation facility in the south San Francisco Bay Area on an adequate and available site;
- Locate the facility near transmission lines in order to reduce congestion;
- Improve Bay Area transmission grid reliability;
- Minimize economic costs by locating the project near existing infra-structure, including transmission facilities with adequate capacity to allow the power generating facility to operate as a merchant plant; and
- Minimize environmental impacts.

(1/8/01 RT 23-29; Applicant's Group 1 and 2 Opening Brief, (March 23, 2001), pp. 1-6 to 1-11.)

Finally, we note Applicant has represented that the power generated will be sold and used in California. (1/30/01 RT 71-72, 148:21-24, 207:12-17.)

FINDINGS and CONCLUSIONS

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

1. The project objective is to construct and operate a 600 megawatt (MW), natural gas-fired, combined cycle merchant power plant in the south San Francisco Bay Area.

2. As proposed by Applicant, the Metcalf Energy Center project consists of the power generation equipment, the transmission interconnection, the raw and potable water supply pipelines, the waste discharge line, the natural gas supply pipeline, and related facilities.

3. Applicant proposes to obtain cooling water from the South Bay Water Recycling Program, through one of two local retailers.

4. Applicant proposes that process make-up water and domestic water will be supplied either by the San Jose Municipal Water System, the Great Oaks Water Company, or from wells. Domestic water supply may include a pipeline from the San Jose municipal system or a pipeline from the Great Oaks Water Company's system.

5. Applicant proposes to transport combined sanitary and industrial wastewater via a forced main that will connect to San Jose's existing sewer system along Santa Teresa Boulevard.

6. The evidence of record contains a detailed analysis of the project as proposed by Applicant.

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

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

SUMMARY AND DISCUSSION OF THE EVIDENCE

The evidence of record contains a full explanation of the purposes and intent of the Compliance Plan (Plan). The Plan is the administrative mechanism used to ensure that the Metcalf Energy Center is constructed and operated according to the Conditions of Certification. It essentially describes the respective duties and expectations of the project owner and the Staff Compliance Project Manager in implementing the design, construction, and operation criteria set forth in the Decision. (1/8/01 RT 112-117.) Compliance with the Conditions of Certification contained in this Decision is verified through means such as periodic reports from the project owner and site visits by Staff and/or delegate agencies. (1/8/01 RT 117-118.)

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

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

- establishes requirements for periodic compliance reports and other administrative procedures necessary to verify compliance status for all Conditions of Certification; and

- establishes requirements for closure of the facility. The closure requirements cover the eventualities of planned closure (in which the facility would be closed in an anticipated and orderly manner), temporary closure (short-term sudden or unexpected closure), and unexpected permanent closure.

The second general element is the specific Conditions of Certification. These are found following the summary and discussion of each appropriate topic area in this Decision. The specific Conditions contain the measures required to mitigate potentially adverse project impacts to insignificant levels. Each Condition also includes a "verification" provision that describes the method of assuring that the Condition has been satisfied. (Ex. 7, pp. 677-692.)

The contents of the Compliance Plan are intended to be read in conjunction with any additional requirements contained in the individual Conditions of Certification. Applicant has acknowledged the acceptability and application of the Compliance Plan. (1/8/01 RT 104; Ex. 6A, p. 10.)

Various Intervenors including the Santa Teresa Citizen's Action Group (STCAG), Californians for Renewable Energy (CARE), and Messers. Scholz, Williams, and Ajlouny questioned the witnesses concerning the basic procedures by which compliance with Conditions of Certification are verified, the available remedies for noncompliance, and the nature of compliance activities which has taken place in other power plant cases. (1/8/01 RT 107-109, 122-32, 136-137, 140-141, 144-146, 148-149, 152, 154-156, 159-161, 165-167, 172; see also, 1/8/01 RT 311-324.) In our view, the testimony established that post-certification complaints are investigated in a timely manner, compliance with Conditions of Certification are verified, and appropriate action is typically taken in the event of noncompliance.[1]

[1] We simply do not agree with CARE's contention that the Conditions of Certification cannot effectively be enforced, or that relevant information has been "purposely omitted" regarding

We recognize, however, the genuine concerns of the affected community insofar as information about these matters in concerned. Therefore we have amended the Staff's proposed Compliance Plan in two respects. First, we specifically require that Staff post the monthly compliance reports on the Commission's web site. Second, while the proposed Compliance Plan already provides for periodic community meetings, we believe members of the affected community should be afforded the ability to specifically request such meetings, and that the meetings occur at reasonable intervals, times, and places. We have accordingly added language to the Compliance Plan to reflect this. These additions appear under the headings "Monthly Compliance Report" and "Periodic Community Meetings," respectively. We believe these additions, in conjunction with the traditional compliance procedures, should reasonably address the core concerns raised by the affected community in this regard.

Finally, we have added "Construction Milestones" as part of the Compliance Plan. The purpose of this addition is to ensure the project actually proceeds in a timely fashion. These Milestones are the same as those recently adopted by the Commission for the Contra Costa Unit 8 project. (May 30, 2001, Docket No. 00-AFC-1, pp. 189-190; Pub. No. P800-01-18.)

FINDINGS AND CONCLUSIONS

The evidence of record establishes:

1. The Compliance Plan and the specific Conditions of Certification contained in this Decision will assure that the Metcalf Energy Center is 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.

"applicant's record for complying with Conditions of Certification" on other projects. (See CARE's Group 1 & 2 Opening Brief (March 23, 2001), p. 1.)

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

COMPLIANCE PLAN

COMPLIANCE PROJECT MANAGER (CPM) RESPONSIBILITIES

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

1. ensuring that the design, construction, operation, and closure of the project facilities is in compliance with the terms and conditions of the Commission Decision;

2. resolving complaints;

3. processing post-certification changes to the Conditions of Certification, project

4. description, and ownership or operational control;

5. documenting and tracking compliance filings; and,

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

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

All project compliance submittals are submitted to the CPM for processing. Where a submittal required by a Condition of Certification requires CPM approval, it should be understood that the approval would involve all appropriate staff and management.

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

PRE-CONSTRUCTION AND PRE-OPERATION COMPLIANCE MEETING

The CPM may schedule pre-construction and pre-operation compliance meetings prior to the projected start-dates of construction, plant operation, or both. The

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

ENERGY COMMISSION RECORD

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

1. all documents demonstrating compliance with any legal requirements relating to the construction and operation of the facility;

2. all monthly and annual compliance reports filed by the project owner;

3. all complaints of noncompliance filed with the Energy Commission; and,

4. all petitions for project or condition changes and the resulting staff or Energy Commission action taken.

PROJECT OWNER RESPONSIBILITIES

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

ACCESS

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

COMPLIANCE RECORD

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

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

COMPLIANCE VERIFICATIONS

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

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

- _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;

- appropriate letters from delegate agencies verifying compliance;

- _Energy Commission staff audit of project records; and/or _Energy Commission staff inspection of mitigation and/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
California Energy Commission
1516 Ninth Street (MS-2000)
Sacramento, CA 95814

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

COMPLIANCE REPORTING

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

COMPLIANCE MATRIX

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

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

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

PRE-CONSTRUCTION MATRIX

Prior to commencing construction a compliance matrix addressing only those conditions that must be fulfilled before the start of construction shall be submitted by the project owner to the CPM. This matrix will be included with the project owner's first compliance submittal. It will be in the same format as the compliance matrix referenced above.

TASKS PRIOR TO START OF CONSTRUCTION

Construction shall not commence until the pre-construction matrix is submitted, all pre-construction conditions have been complied with, and the CPM has issued a letter to the project owner authorizing construction. Project owners frequently anticipate starting project construction as soon as the project is certified. In some cases it may be necessary for the project owner to file submittals prior to certification if the required lead-time extends beyond the date anticipated for start of construction. It is also important that the project owner understand that pre-construction activities that are initiated prior to certification are performed at the owner's own risk. Failure to allow specified lead-time may cause delays in start of construction.

Various lead times for verification submittals to the CPM for Conditions of Certification are established to allow sufficient staff time to review and comment and, if necessary, allow the project owner to revise the submittal in a timely manner. This will ensure that project construction may proceed according to schedule.

MONTHLY COMPLIANCE REPORT

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

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

1. a summary of the current project construction status, a revised/updated schedule if there are significant delays, and an explanation of any significant changes to the schedule;
2. documents required by specific conditions to be submitted along with the Monthly Compliance Report. Each of these items must be identified in the transmittal letter, and should be submitted as attachments to the Monthly Compliance Report;

3. an initial, and thereafter updated, compliance matrix which shows the status of all Conditions of Certification (fully satisfied and/or closed conditions do not need to be included in the matrix after they have been reported as closed);

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

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

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

7. a listing of any filings with, or permits issued by, other governmental agencies during the month;

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

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

10. any requests to dispose of items that are required to be maintained in the project owner's compliance file; and

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

Staff shall post these Monthly Compliance Reports on the Commission's web site.

ANNUAL COMPLIANCE REPORT

After the air district has issued a Permit to Operate, the project owner shall submit Annual Compliance Reports instead of Monthly Compliance Reports. The

reports are for each year of commercial operation and are due to the CPM each year at a date agreed to by the CPM. The project owner shall also send a copy of each Monthly Compliance Report to the public library nearest the project site. 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 unexpected facility closure, including any suggestions necessary for bringing the plan up to date [see General Conditions for Facility Closure addressed later in this section], and

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

CONFIDENTIAL INFORMATION

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

DEPARTMENT OF FISH AND GAME FILING FEE

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

PERIODIC COMMUNITY MEETINGS

Prior to and during construction, the project owner shall conduct community meetings at appropriate locations of its choosing at a frequency it shall determine to be necessary in consultation with the CPM. The purpose of these meetings shall be to inform the public of construction plans or events of potential interest or concern to residents and other interested parties that are located near the project site. The public shall be afforded the opportunity to comment on project activities and plans. The CPM shall be invited to attend these meetings. Members of the affected community may request that a community meeting be scheduled; the CPM shall evaluate each such request and, if the CPM determines such meeting is appropriate, shall publicly notice such meeting. The CPM shall ensure these community meetings occur at reasonable intervals, times, and places.

REPORTING OF COMPLAINTS, NOTICES, AND CITATIONS

Prior to the start of construction, the project owner must send a letter to property owners living within one mile of the project notifying them of a telephone number to contact project representatives with questions, complaints or concerns. If the telephone is not staffed 24 hours per day, it shall include automatic answering, with date and time stamp recording. The notice shall also contain the Energy Commission's toll-free compliance number. These telephone numbers shall be posted at the project site and easily visible to passersby during construction and operation.

In addition to the monthly and annual compliance reporting requirements described above, the project owner shall report and provide copies of all complaint forms, notices of violation, notices of fines, official warnings, and citations, within ten (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 complaint form on the following page.

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 thirty (30) years or more when the project ceases operation. Therefore, provisions must be made which provide the flexibility to deal with the specific situation and project setting which will exist at the time of closure. 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, unexpected temporary closure and unexpected permanent closure.

PLANNED CLOSURE

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

UNEXPECTED TEMPORARY CLOSURE

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

UNEXPECTED PERMANENT CLOSURE

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

GENERAL CONDITIONS FOR FACILITY CLOSURE

PLANNED CLOSURE

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

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

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

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

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

UNEXPECTED TEMPORARY CLOSURE

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

The project owner shall submit an on-site contingency plan for CPM review and approval. The plan shall be submitted no less that sixty (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 ninety (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 this Decision.)

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

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

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

UNEXPECTED PERMANENT CLOSURE

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

specified for unexpected temporary closure shall also apply to unexpected permanent closure.

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

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

A closure plan consistent with that for a planned closure shall be developed and submitted to the CPM within ninety (90) days of the permanent closure (or other period of time agreed to by the CPM).

DELEGATE AGENCIES

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

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

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

ENFORCEMENT

The Energy Commission's legal authority to enforce the terms and conditions of its Decision is specified in Public Resources Code sections 25534 and 25900. The Energy Commission may amend or revoke the certification for any facility, and may impose a civil penalty for any significant failure to comply with the terms or conditions of the Commission Decision. The specific action and amount of any

fines the Commission may impose would take into account the specific circumstances of the incident(s). This would include such factors as the previous compliance history, whether the cause of the incident involves willful disregard of LORS, inadvertence, unforeseeable events, and other factors the Commission may consider.

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

NONCOMPLIANCE COMPLAINT PROCEDURES

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

INFORMAL DISPUTE RESOLUTION PROCEDURE

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

This procedure may precede the more formal complaint and investigation procedure specified in Title 20, California Code of Regulations, section 1230 et seq., but is not intended to be a substitute for, or prerequisite to it. This informal procedure may not be used to change the terms and Conditions of Certification as approved by the Energy Commission, although the agreed upon resolution may result in a project owner, or in some cases the Energy Commission staff, proposing an amendment.

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

REQUEST FOR INFORMAL INVESTIGATION

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

Upon receipt of a request for informal investigation, the CPM shall promptly notify the project owner of the allegation by telephone and letter. All known and relevant information of the alleged noncompliance shall be provided to the project owner and to the Energy Commission staff. The CPM will evaluate the request and the information to determine if further investigation is necessary. If the CPM finds that further investigation is necessary, the project owner will be asked to promptly investigate the matter and within seven (7) 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 forty-eight (48) hours, followed by a written report filed within seven (7) 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 fourteen (14) days of the project owner's filing of its written report. Upon receipt of such a request, the CPM shall:

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

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

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

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

FORMAL DISPUTE RESOLUTION PROCEDURE-COMPLAINTS AND INVESTIGATIONS

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

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

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

The project owner must petition the Energy Commission, pursuant to Title 20, California Code of Regulations, section 1769, to: 1) delete or change a Condition of Certification; 2) modify the project design or operational requirements; or 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 must be submitted to the Commission's Docket in accordance with Title 20, California Code of Regulations, section 1209. The criteria that determine which type of change process applies are explained below.

AMENDMENT

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

INSIGNIFICANT PROJECT CHANGE

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

VERIFICATION CHANGE

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

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KEY EVENT LIST

PROJECT _____ DATE ENTERED_____

DOCKET # _____ PROJECT MANAGER_____

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

CONSTRUCTION MILESTONES

The following is the procedure for establishing and enforcing milestones, which includes milestone dates for pre-construction and construction phases of the project. Milestones and methods of verification must be established and agreed upon by the project owner and the CPM no later than 30 days after the final decision becomes effective. If this deadline is not met, the CPM will establish the milestones.

I. ESTABLISH PRE-CONSTRUCTION MILESTONES TO ENABLE START OF 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.

The CPM will negotiate the above-cited 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 is changed due to circumstances beyond the project owner's control.
3. The milestone will be missed, but the project owner demonstrates a good-faith effort to meet the project milestone.
4. The milestone is missed due to unforeseen natural disasters or acts of God which prevent timely completion of the milestones.

If a milestone date cannot be met, the CPM will make a determination whether the project owner has demonstrated good cause for failure to meet the milestone. If the determination is that good cause exists, the CPM will negotiate revised milestones.

If the project owner fails to meet one or more of the established milestones and the CPM determines that good cause does not exist, the CPM will make a recommendation to the Executive Director. Upon receiving such recommendation, the Executive Director will take one of the following actions.

1. Conclude that good cause exists and direct that revised milestones be established; or
2. Issue a reprimand, recommend a fine pursuant to Public Resources Code sections 25534 and 25534.1, or take other appropriate remedial action and direct that revised milestones be established; or
3. Recommend, after consulting with the Energy Facility Siting and Environmental Committee, that the Commission issue a finding that the project owner has forfeited the project's certification.

III. ENGINEERING ASSESSMENT

The broad engineering assessment conducted for the Metcalf Energy Center is comprised of individual analyses examining the facility's design, as well as the efficiency and the reliability of the proposed power plant. The subjects of this assessment include not only the power generating equipment, but also other project related elements such as the associated linear facilities (transmission tie-line, and the gas and the water supply pipelines).

A. FACILITY DESIGN

The review of facility design covers several technical disciplines including the civil, structural, mechanical, and electrical engineering elements related to project design, construction, and operation. The purpose of this portion of the project analysis is to determine whether the power plant and ancillary facilities have been described in sufficient detail to provide reasonable assurance that the project can be designed and constructed in accordance with all applicable laws, ordinances, regulations, and standards, as well as in a manner that protects environmental quality and assures public health and safety. 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.

1. SUMMARY AND DISCUSSION OF THE EVIDENCE

Exhibit 1 contains lists of the civil, structural, mechanical, and electrical design criteria proposed to demonstrate the likelihood of compliance with applicable laws, ordinances, regulations, and standards.[6]

[6] (See Exhibit 1, Appendices 10A through 10G for a representative list of applicable industry standards, design practices, and construction methods in preparing and developing the project; see also, Applicant's Group I Brief (March 23, 2001), p. 1-26; Ex. 7, p. 590.)

In the course of its review, Staff proposed Conditions of Certification to ensure compliance with applicable design standards, special design requirements, applicable engineering criteria, and that the project is designed in a manner that protects the environment and public health and safety. (1/8/01 RT 345.) The evidence establishes that the project can comply with all applicable law, and that the Conditions of Certification are sufficient to ensure this compliance. (1/8/01 RT 297-298; Ex. 7, pp. 593-594; Ex. 11.)

Exhibit 1, § 2.4.5 describes a Project Quality Program that will be used to maximize confidence that systems and components will be designed, fabricated, stored, transported, installed, and tested in accordance with the technical codes and standards appropriate for a power plant. Compliance with design requirements will be verified through an appropriate program of inspections and audits. This Quality Assurance/Quality Control (QA/QC) program will ensure that the project is actually designed, procured, fabricated and installed as contemplated. (Ex. 7, p. 591; see also Condition of Certification **MECH-1**.)

The project will use accepted industry standards and will be designed and constructed to the 1998 edition of the California Building Code (CBC), and other applicable codes and standards in effect at the time final design and construction actually commence.[7] The Energy Commission acts as the Chief Building Official (CBO) for all energy facilities it certifies and has the responsibility to enforce and render interpretations of the CBC, as well as to adopt and enforce rules and supplemental regulations to clarify the application of the CBC's provisions. The Energy Commission's design review and construction inspection process has been developed to conform to CBC requirements and ensure that all facility design Conditions of Certification are met. In the execution of this review, the

[7] In the event the designs are submitted to the Chief Building Official (CBO) for review and approval when the successor to the 1998 CBC is in effect, the 1998 CBC provisions shall be replaced with the applicable successor provisions. (Ex. 7, pp. 590, 591; see Condition of Certification **GEN-1**.)

Commission may appoint experts to carry out the design review and construction inspections, and to act as a delegate CBO.[8]

For the current project, the Commission will invite the local building authority, either the City of San Jose or Santa Clara County, to act as CBO for the project. (1/8/01 RT 347-349.) When an entity has been identified to perform the duties of CBO, Energy Commission staff will complete a Memorandum of Understanding (MOU) with that entity that outlines its roles and responsibilities and those of its subcontractors and delegate agents. (Ex. 7, p. 591.)

The Conditions of Certification require Applicant to engage engineers responsible for the design of the civil, structural, mechanical, and electrical portions of the project. These engineers are required to be registered in California, and to sign and stamp each submittal of design plans, calculations, and specifications submitted to the CBO. No element of construction may proceed without prior approval from the CBO. The Conditions also require that qualified special inspectors be assigned to perform or oversee special inspections required by applicable law. (Ex. 7, p. 592.)

The removal of a facility from service (decommissioning) as a result of the project reaching the end of its useful life may range from “mothballing” to removal of all equipment and appurtenant facilities and restoration of the site. Future circumstances that may affect the decommissioning activities are largely unknown at this time. In order to assure that decommissioning of the facility will be completed in a manner that is environmentally sound, safe, and will protect public health and safety, we require that Applicant also submit a decommissioning plan to the Energy Commission for review and approval prior to

[8] These delegate agents typically include the local building official and independent consultants hired to cover technical expertise otherwise unavailable. The Applicant, through permit fees, pays the costs of the reviews and inspections. While building permits in addition to the Energy Commission certification are not required for this project, in lieu permit fees are paid by the Applicant to cover the costs of reviews and inspections. (Ex. 7, p. 591.)

the commencement of decommissioning. The plan shall include a discussion of the following items:

- proposed decommissioning activities for the project and all appurtenant facilities constructed as part of the project;
- all applicable laws, local/regional plans, and the conformance of the proposed decommissioning activities to the applicable laws and local/regional plans;
- the activities necessary to restore the site if the plan requires removal of all equipment and appurtenant facilities; and
- decommissioning alternatives, other than complete site restoration.

The **General Conditions** of the Compliance Plan discussed earlier in this Decision ensure that these measures will be included in the Facility Closure Plan.

During the course of the hearings, various members of the public raised concerns about seismic activity. (1/8/01 RT 311-317, 337-338, 355-358, 361-363.) The site lies in seismic zone 4, the zone of greatest seismic shaking in the United States. Under the CBC, certain structures in a power plant may be required to undergo dynamic lateral force (structural) analysis; others may be designed using the simpler static analysis procedure. (Applicant's Group I Brief (March 23, 2001), pp.1-26, 1-27; Ex. 7, pp. 590, 591.) In order to ensure that structures are analyzed using the appropriate lateral force procedure, we adopt Condition of Certification **STRUC-1**, which in part requires review and approval by the CBO of the project owner's proposed lateral force procedures prior to the start of construction.

Intervenor Scholz also queried the expert witnesses regarding the compatibility of the project design as it relates to the land area occupied. The testimony establishes that the project design is appropriate for the proposed site, and that a smaller project footprint would not be practical. (1/8/01 RT 308-310, 349.) Finally, Intervenor Williams suggested that prudent design practice could require

the installation of seismically activated automatic shut-off valves on the gas supply pipeline. This suggestion is, however, unsupported by the evidence of record. Expert testimony is uncontradicted that the activation time for these automatic devices is greater than the period during which any inquiry or damage associated with pipeline rupture typically occurs. (1/8/01 RT 301-302.) We therefore do not require the installation of such device.

FINDINGS AND CONCLUSIONS

Based upon the evidence of record, we make the following findings and reach the following conclusions;

1. The laws, ordinances, regulations, and standards (LORS) identified in Exhibit 1 and supporting documents are those applicable to the facility design aspects of the proposed project.

2. The project is currently in the initial design phase.

3. The Conditions of Certification will ensure that the proposed facilities are designed and constructed in accordance with applicable laws, ordinances, regulations, and standards. This will occur through the use of design review, plan checking, and field inspections, which will be performed by the Chief Building Official (CBO) or other Energy Commission delegate agent. Commission staff will audit the CBO to ensure satisfactory performance.

4. The Conditions of Certification set forth below and the Compliance Plan portion of this Decision adequately ensure that decommissioning will occur in compliance with applicable laws, ordinances, regulations, and standards.

We therefore conclude that the Metcalf Energy Center will be designed and constructed consistent with appropriate laws, ordinances, regulations, and standards pertinent to the project's civil, structural, mechanical, and electrical engineering aspects.

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 LORS in effect at the time initial design plans are submitted to the CBO for review and approval. The CBC in effect is that edition that has been adopted by the California Building Standards Commission and published at least 180 days previously. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in Conditions of Certification **TSE-1, TSE-2 and TSE-3** in the **Transmission System Engineering** Section of this Decision.

> Protocol: 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 thirty (30) days (or a lesser number of days mutually agreed to by the project owner and the CBO) after receipt of the Certificate of Occupancy, the project owner shall submit to the California Energy Commission Compliance Project Manager (CPM) a statement of verification, signed by the responsible design engineer, attesting that all designs, construction, installation and inspection requirements of the applicable laws, ordinances, regulations, and standards (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 thirty (30) days of receipt from the CBO [1998 CBC, Section 109 – Certificate of Occupancy.]

GEN-2 The project owner shall furnish to the CPM and to the CBO a schedule of facility design submittals, a Master Drawing List, and a Master Specifications List. The schedule shall contain a 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 sixty (60) days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of rough grading, the project owner shall submit the schedule, a Master Drawing List, and a Master Specifications List to the CBO and to the CPM. The project owner shall provide schedule updates in the Monthly Compliance Report.

GEN-3 The project owner shall make payments to the CBO for design review, plan check and construction inspection, equivalent to the fees listed in the 1998 CBC, Chapter 1, Section 107 and Table 1-A, Building Permit Fees; Appendix Chapter 33, Section 3310 and Table A-33-A, Grading Plan Review Fees; and Table A-33-B, Grading Permit Fees. If the CBO has adjusted the CBC fees for design review, plan check and construction inspection, the project owner shall pay the adjusted fees.

Verification: The project owner shall make the required payments to the CBO at the time of submittal of the plans, design calculations, specifications, or soil reports. The project owner shall send a copy of the CBO's receipt of payment to the CPM in the next Monthly Compliance Report indicating that the applicable fees have been paid.

GEN-4 Prior to the start of rough grading, the project owner shall assign a California registered architect, structural engineer or civil engineer, as a resident engineer (RE), to be in general responsible charge of the project [Building Standards Administrative Code (Cal. Code Regs., tit. 24, § 4-209, Designation of Responsibilities).] All transmission facilities (lines, switchyards, switching stations, and substations) are handled in Conditions of Certification **TSE-1, TSE-2 and TSE-3** in the **Transmission System Engineering** Section of this Decision. The RE may delegate responsibility for portions of the project to other registered engineers. Registered mechanical and electrical engineers may be delegated responsibility for mechanical and electrical portions of the project respectively. A project may be divided into parts, provided each part is clearly defined as a distinct unit. Separate assignment of general responsible charge may be made for each designated part.

Protocol: The RE shall:

1. Monitor construction progress to ensure compliance with LORS;

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

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

4. Be responsible for providing the project inspectors and testing agency(ies) with complete and up-to-date set(s) of stamped drawings, plans, specifications and any other required documents;

5. Be responsible for the timely submittal of construction progress reports to the CBO from the project inspectors, the contractor, and

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

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

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

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

Verification: At least thirty (30) days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of rough grading, the project owner shall submit to the CBO for review and approval the name, qualifications, and registration number of the RE and any other delegated engineers assigned to the project. The project owner shall notify the CPM of the CBO's approvals of the RE and other delegated engineer(s) within five (5) days of the approval.

If the RE or the delegated engineer(s) are subsequently reassigned or replaced, the project owner has five (5) days in which to submit the name, qualifications, and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within five (5) days of the approval.

GEN-5 Prior to the start of rough grading, the project owner shall assign at least one of each of the following California registered engineers to the project: A) a civil engineer; B) a geotechnical engineer or a civil engineer experienced and knowledgeable in the practice of soils engineering; C) a design engineer, who is either a structural engineer or a civil engineer fully competent and proficient in the design of power plant structures and equipment supports; D) a mechanical engineer; and E) an electrical engineer. [California Business and Professions Code section 6704 et seq., and sections 6730 and 6736 requires state registration to practice as a civil engineer or structural engineer in California.] All transmission facilities (lines, switchyards, switching stations, and substations) are handled in Conditions of Certification **TSE-1, TSE-2 and TSE-3** in the **Transmission System Engineering** Section of this 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.

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

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

Protocol: A: The civil engineer shall:

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

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

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

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

2. Prepare the soils engineering reports required by the 1998 CBC, Appendix Chapter 33, Section 3309.5 – Soils Engineering Report, and Section 3309.6 – Engineering Geology Report;

3. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the 1998 CBC, Appendix Chapter 33, section 3317, Grading Inspections;

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

5. Review the geotechnical report, field exploration report, laboratory tests, and engineering analyses detailing the nature and extent of the site soils that may be susceptible to liquefaction, rapid settlement, or collapse when saturated under load; and

6. Prepare reports on foundation investigation to comply with the 1998 CBC, Chapter 18 section 1804, Foundation Investigations.

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].

Protocol: C: The design engineer shall:

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

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

3. Monitor construction progress to ensure compliance with LORS;

4. Evaluate and recommend necessary changes in design; and

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

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

Protocol: E: The electrical engineer shall:

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

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

Verification: At least thirty (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 (5) days of the approval.

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

GEN-6 Prior to the start of an activity requiring special inspection, the project owner shall assign to the project qualified and certified special inspector(s) who shall be responsible for the special inspections required by the 1998 CBC, Chapter 17, Section 1701 [Special Inspections, Section 1701.5 Type of Work (requiring special inspection), and Section 106.3.5, Inspection and observation program.] All transmission facilities (lines, switchyards, switching stations, and substations) are handled in Conditions of Certification **TSE-1, TSE-2 and TSE-3** in the **Transmission System Engineering** Section of this Decision.

Protocol: The special inspector shall:

1. Be a qualified person who shall demonstrate competence, to the satisfaction of the CBO, for inspection of the particular type of construction requiring special or continuous inspection;

2. Observe the work assigned for conformance with the approved design drawings and specifications;

3. Furnish inspection reports to the CBO and RE. All discrepancies shall be brought to the immediate attention of the RE for correction then, if uncorrected, to the CBO and the CPM for corrective action; and

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

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

Verification: At least fifteen (15) days prior to the start of an activity requiring special inspection, the project owner shall submit to the CBO for review and approval, with a copy to the CPM, the name(s) and qualifications of the certified

weld inspector(s), or other certified special inspector(s) assigned to the project to perform one or more of the duties set forth above. The project owner shall also submit to the CPM a copy of the CBO's approval of the qualifications of all special inspectors in the next Monthly Compliance Report.

If the special inspector is subsequently reassigned or replaced, the project owner has five (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 (5) days of the approval.

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

Verification: The project owner shall submit monthly construction progress reports to the CBO and CPM. The project owner shall transmit a copy of the CBO's approval or disapproval of any corrective action taken to resolve a discrepancy to the CPM within fifteen (15) days. If disapproved, the project owner shall advise the CPM, within five (5) days, the reason for disapproval, and the revised corrective action to obtain CBO's approval.

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

Verification: Within fifteen (15) days of the completion of any work, the project owner shall submit to the CBO, with a copy to the CPM: (a) a written notice that the completed work is ready for final inspection; and (b) a signed statement that the work conforms to the final approved plans.

CIVIL-1 Prior to the start of site grading, the project owner shall submit to the CBO for review and approval the following:

1. Design of the proposed drainage structures and the grading plan;
2. An erosion and sedimentation control plan;

3. Related calculations and specifications, signed and stamped by the responsible civil engineer; and
4. Soils report as required by the 1998 CBC, Appendix Chapter 33, Section 3309.5, Soils Engineering Report and Section 3309.6, Engineering Geology Report.

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

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

Verification: The project owner shall notify the CPM, within five (5) days, when earthwork and construction is stopped as a result of unforeseen adverse geologic/soil conditions. Within five (5) days of the CBO's approval, the project owner shall provide to the CPM a copy of the CBO's approval to resume earthwork and construction in the affected areas.

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

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

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

STRUC-1 Prior to the start of any increment of construction, the project owner shall submit to the CBO for review and approval the proposed lateral force procedures for project structures and the applicable designs, plans, and drawings for project structures. Proposed lateral force procedures, designs, plans, and drawings shall be those for:

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

In addition, the project owner shall, prior to the start of any increment of construction, get approval from the CBO of the lateral force procedures proposed for project structures to comply with the lateral force provisions of the CBC.

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

4. Ensure that the final plans, calculations, and specifications clearly reflect the inclusion of approved criteria, assumptions, and methods used to develop the design. The final designs, plans, calculations and specifications shall be signed and stamped by the responsible design engineer. [1998 CBC, Section 106.3.4, Architect or Engineer of Record.]

Verification: At least thirty (30) days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of any increment of construction, the project owner shall submit to the CBO, with a copy to the CPM, the responsible design engineer's signed statement that the final design plans, specifications, and calculations conform with all of the requirements set forth in this 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 nonconforming submittal with a copy of the transmittal letter to the CPM.

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

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

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

2. Concrete pour sign-off sheets;

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

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

5. Reports covering other structure activities requiring special inspections shall be in accordance with the 1998 CBC, Chapter 17, Section 1701, Special Inspections, Section 1701.5, Type of Work (requiring special inspection), Section 1702, Structural Observation and Section 1703, Nondestructive Testing.

Verification: If a discrepancy is discovered in any of the above data, the project owner shall, within five (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. The NCR shall reference the Condition(s) of Certification and the applicable CBC chapter and section. Within five (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 (5) days, the reason for disapproval and the revised corrective action to obtain CBO's approval.

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

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

STRUC-4 Tanks and vessels containing quantities of toxic or hazardous materials exceeding amounts specified in Chapter 3, Table 3-E of the 1998 CBC shall, at a minimum, be designed to comply with Occupancy Category 2 of the 1998 CBC.

Verification: At least thirty (30) days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of installation of

the tanks or vessels containing the above specified quantities of highly toxic or explosive substances that would be hazardous to the safety of the general public if released, the project owner shall submit to the CBO, for review and approval, final design plans, specifications, and calculations, including a copy of the signed and stamped engineer's certification.

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

MECH-1 Prior to the start of any increment of piping construction, the project owner shall submit, for CBO review and approval, the proposed final design drawings, specifications, and calculations for each plant piping system (exclude domestic water, refrigeration systems, and small bore piping, i.e., piping and tubing with a diameter less than two and one-half inches). The submittal shall also include the applicable Quality Assurance/Quality Control(QA/QC) procedures. The project owner shall design and install all piping, other than domestic water, refrigeration, and small bore piping to the applicable edition of the CBC.

Upon completion of construction of any piping system, the project owner shall request the CBO's inspection approval of said construction [1998 CBC, Section 106.3.2, Submittal documents, Section 108.3, Inspection Requests].

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

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

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

- American National Standards Institute (ANSI) B31.1 (Power Piping Code);
- ANSI B31.2 (Fuel Gas Piping Code);
- ANSI B31.3 (Chemical Plant and Petroleum Refinery Piping Code);
- ANSI B31.8 (Gas Transmission and Distribution Piping Code); and
- Specific City/County code.

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

Verification: At least thirty (30) days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of any increment of piping construction, the project owner shall submit to the CBO for approval, with a copy of the transmittal letter to the CPM, the above listed documents for that increment of construction of piping systems, including a copy of the signed and stamped engineer's certification of conformance with the Energy Commission's Decision. The project owner shall transmit a copy of the CBO's inspection approvals to the CPM in the Monthly Compliance Report following completion of any inspection.

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

The project owner shall:

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

2. Have the responsible design engineer submit a statement to the CBO that the proposed final design plans, specifications, and calculations conform to all of the requirements set forth in the appropriate ASME Boiler and Pressure Vessel Code or other applicable codes.

Verification: At least thirty (30) days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of on-site fabrication or installation of any pressure vessel, the project owner shall submit to the CBO, for review and approval, final design plans, specifications, and calculations, including a copy of the signed and stamped engineer's certification, with a copy of the transmittal letter to the CPM.

The project owner shall send copies of the CBO plan check approvals to the CPM in the following Monthly Compliance Report. The project owner shall also

transmit a copy of the CBO's and/or Cal-OSHA inspection approvals to the CPM in the Monthly Compliance Report following completion of any inspection.

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

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

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

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

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

> Protocol: The project owner shall design, fabricate and install:

1. Plumbing, potable water, all drainage systems, and toilet rooms in accordance with Title 24, California Code of Regulations, Division 5, Part 5 and the California Plumbing Code (or other relevant section(s) of the currently adopted California Plumbing Code and Title 24, California Code of Regulations); and

2. Building energy conservation systems and temperature control and ventilation systems in accordance with Title 24, California Code of Regulations, Division 5, Chapter 2-53, Part 2.

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

Verification: At least thirty (30) days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of construction of any of the above systems, the project owner shall submit to the CBO the final design plans, specifications and calculations, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with the applicable edition of the CBC, and send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

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

ELEC-1 For the 480 volts and higher systems, the project owner shall not begin any increment of electrical construction until plans for that increment have been approved by the CBO. These plans, together with design changes and design change notices, shall remain on the site for one (1) year after completion of construction. The project owner shall request that the CBO inspect the installation to ensure compliance with the requirements of applicable LORS [1998 CBC, Section 108.4, Approval Required, and Section 108.3, Inspection Requests]. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in Conditions of Certification **TSE-1, TSE-2 and TSE-3** in the **Transmission System Engineering** Section of this Decision.

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

- receipt or delay of major electrical equipment; and
- testing or energization of major electrical equipment.

Verification: At least thirty (30) days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of each increment of electrical construction, the project owner shall submit to the CBO for review and approval the final design plans, specifications, and calculations for electrical equipment and systems 480 volts and greater, including a copy of the signed and stamped statement from the responsible electrical engineer attesting compliance with the applicable LORS, and send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

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

Protocol: A. Final plant design plans to include:

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

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

Protocol: B. Final plant calculations to establish:

1. short-circuit ratings of plant equipment;
2. ampacity of feeder cables;
3. voltage drop in feeder cables;
4. system grounding requirements;
5. coordination study calculations for fuses, circuit breakers and protective relay settings for the 13.8 kV, 4.16 kV and 480 V systems;
6. system grounding requirements;
7. lighting energy calculations; and
8. other reasonable calculations as customarily required by the CBO.

Protocol: C. A signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications conform to requirements set forth in this Decision.

Verification: At least thirty (30) days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of each increment of electrical equipment installation, the project owner shall submit to the CBO for review and approval the final design plans, specifications, and calculations, for

electrical equipment and systems 480 volts and greater enumerated above, including a copy of the signed and stamped statement from the responsible electrical engineer certifying compliance with the applicable LORS. The project owner shall send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

B. POWER PLANT EFFICIENCY

The California Environmental Quality Act and its implementing regulations require the Commission to consider a proposed power plant's energy requirements and energy use efficiency; its effects on local and regional energy supplies and resources; its requirements for additional energy supply capacity; its compliance with existing energy standards; and whether feasible alternatives exist that could reduce a wasteful, inefficient, and unnecessary consumption of energy. (Pub. Resources Code, § 21002.1; 14 Cal. Code of Regs., Appendix F.)

The MEC will burn natural gas at a maximum rate exceeding 80 million Btu per day: (mmBtu/d). (Ex. 7, p. 620.) This is a substantial rate of energy consumption and holds the potential to impact energy supplies. In the present instance, we examined the efficiency of the proposed power plant to determine if the project's consumption of energy may create a significant adverse impact on the environment and, if so, what measures may be taken to mitigate the impact through increased efficiency of design and operation. We reviewed the MEC project to determine if, compared to current state-of-the-art projects, inefficient fuel consumption is likely and, if so, how it can be mitigated.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The MEC will be configured as a compound-train combined cycle power plant. In this configuration electricity is generated by two gas turbines and, additionally, by a reheat steam turbine that operates on heat energy recuperated from the gas turbines' exhaust. By recovering this heat, which would otherwise be lost up the exhaust stacks, the efficiency of any combined cycle power plant is increased considerably from that of either gas turbines or steam turbines operating alone. Such configuration is well suited to the large, steady loads met by a baseload plant intended to efficiently supply energy for long periods of time. (Ex. 7, p. 621.)

The use of multiple turbines further contributes to efficiency at part load. Gas turbine generators operate most efficiently at one particular output level, typically at full load. Whenever desired output is less than full load, the unit must be throttled back. Rather than being forced to throttle back one large turbine, with the consequent reduction in efficiency, the power plant operator will have the option of shutting off one gas turbine. This allows the plant to generate at less than full load while maintaining optimum efficiency. Loads down to 50 percent of full load allow one gas turbine (operating at full load) and the steam turbine to maintain peak efficiency. (1/8/01 RT 293-295; Ex. 7, p. 621.) Additionally, for further operational flexibility, the Heat Recovery Steam Generators (HRSGs) will be equipped with duct burners to supply additional steam for injection into the gas turbines. This increases maximum power output, and extends the range of power outputs at which the plant can operate at optimum or near optimum efficiency. (Ex. 7, pp. 621- 622.)

The gas turbines to be employed in the MEC represent some of the most modern and efficient such machines now available. The Applicant will employ a fuel efficient gas turbine from a prominent manufacturer, the Siemens-Westinghouse 501F. This machine is nominally rated in a two-on-one train combined cycle at 546 MW and 55.8 percent efficiency. (1/8/01 RT 299; Ex. 7, p. 622.) This represents a substantial efficiency increase when compared with efficiencies of only ten years ago. (1/8/01 RT 300.) Other machines on the market, such as the General Electric Frame 7FA and the ASEA Brown-Boveri (ABB) KA-24, provide insignificant differences in actual operating efficiency. Upon questioning by several Intervenors at the evidentiary hearing, witnesses for Applicant and Staff confirmed the state-of-the-art efficiency of the combustion turbine generators proposed for use. (1/8/01 RT 332-333, 346, 350-351.) Overall, the evidence indicates that MEC's production of energy will consume 40 percent less natural gas than the most efficient of the older power plants in the Bay Area. (1/8/01 RT 293; Ex. 7, p. 619.)

The selection of gas turbine inlet air cooling methods also can affect project efficiency. The two commonly used techniques are the evaporative cooler and the chiller. Both devices increase gas turbine power output by cooling the gas turbine inlet air. A chiller can offer greater power output than the evaporative cooler on hot, humid days, but consumes electric power to operate its refrigeration process. This slightly reduces overall net power output and, thus, overall efficiency. An evaporative cooler boosts power output best on dry days; it uses less electric power than a chiller, thus yielding slightly higher operating efficiency. The difference in efficiency between these two techniques is so small as to be insignificant. The Applicant plans to install evaporative cooling. Given project climate and the relative lack of clear superiority of one system over the other, Staff agrees this approach is acceptable. (Ex. 7, p. 623.)

FINDINGS AND CONCLUSIONS

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

1. The MEC, constructed and operated as proposed, would generate a nominal 600 MW of electric power at an overall project efficiency of approximately 55 percent.

2. While MEC will consume substantial amounts of energy, it will do so in the most efficient manner practicable.

3. Operation of the MEC project will not create significant adverse effects on energy supplies or resources, and will not consume energy in a wasteful or inefficient manner.

4. The MEC will cause no significant adverse impacts to energy resources.

5. The proposed project will not contribute to significant adverse cumulative impacts on energy resources.

The Commission therefore concludes that the project will be acceptably efficient.

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 nevertheless determine whether the project will be designed, sited, and operated in such a manner as to ensure safe and reliable operation. [Cal. Code of Regs., tit. 20, § 1752(c)(2).]

In the regulated monopoly electric industry of past decades, the utility companies assured overall system reliability, in part, by maintaining a seven- to ten-percent "reserve margin" in the form of standby power plants to quickly handle unexpected outages of generating or transmission facilities. This margin proved adequate because of the reliability of the power plants that constituted the generation system.

In California's competitive electric power industry, the California Independent System Operator (Cal-ISO) has the primary responsibility for maintaining overall electrical system reliability. The Cal-ISO's mechanisms to ensure adequate power plant reliability rest on the assumption that the individual power plants that compete to sell power into the system will each exhibit a level of reliability similar to that of power plants of past decades. Therefore, in the absence of clear guidelines on reliability standards, 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.

SUMMARY AND DISCUSSION OF THE EVIDENCE

A reliable power plant is one that is available when called upon to operate. Power plant systems must be able to operate for extended periods (sometimes months on end) without shutting down for maintenance or repairs. Measuring this reliability is based on industry norms and is accomplished by ensuring adequate levels of equipment availability and redundancy, plant maintainability, fuel and water availability, and resistance to natural hazards. (1/8/01 RT 292-293; Ex. 7, pp. 612-613.)

The Applicant proposes to operate the Metcalf Energy Center (MEC) as a 600 MW (nominal) baseload and load following unit operating at output levels from 30 to 100 percent of baseload at an overall annual availability factor between 92 and 98 percent. (Ex. 1, sections 1.1, 2.1, 2.2.2, 2.4.1, 10.2.2.)

1. Equipment Reliability/Availability

Equipment reliability/availability will be ensured by use of appropriate quality assurance/quality control (QA/QC) programs during design, procurement, construction, and operation of the plant, and by providing for adequate maintenance and repair of the equipment and systems. The QA/QC program delineated by the Applicant (Ex. 1, sections 2.4.5, 2.4.5.2) describes a program typical of the power industry. Equipment and supplies will be purchased from qualified suppliers, suppliers' QA/QC programs will be audited, and construction and installation will be inspected, all in accordance with the QA/QC plan. The implementation of this program is reasonably expected to yield acceptable project reliability. Conditions of Certification are included in the **Facility Design** section of this Decision to ensure such implementation. (Ex. 7, p. 613.)

2. Plant Maintainability

A generating facility called on to operate in baseload and load following service for long periods of time must be capable of being maintained while operating. A typical approach for achieving this is to provide redundant examples of those pieces of equipment most likely to require service or repair. The Applicant plans to provide some redundancy of function. (1/8/01 RT 292-293, 338-340; Ex. 1, sections 2.2.5.3, 2.2.13.3, 2.4.2, Table 2.4-1.) For example, the following plant components are provided in sets of two 100 percent capacity units:

— HRSG feedwater pumps (one per HRSG; a complete spare pump will be stored on-site);
— condensate pumps;
— closed cycle cooling water pumps;
— closed cycle cooling water heat exchangers;
— demineralizer/RO system; and
— battery chargers.

Circulating water pumps will be provided in a set of two 60 percent capacity units. The computerized control and protective system for the gas turbine generators and HRSGs, known as the Distributed Control and Information System (DCIS), will also have typical redundancy.

While some power plants may exhibit greater levels of equipment redundancy, the fact that the project consists of two parallel trains of gas turbine generators/HRSGs provides inherent reliability. Failure of a non-redundant component of one train should not cause the other train to fail; this will allow the plant to continue to generate (at reduced output). With this opportunity for continued operation in the face of equipment failure, and in light of the fact that the Applicant does not purport to sell system reliability services, the evidence

indicates that this level of redundancy represents an adequate design approach. (Ex. 7, pp. 613-614.)

The Applicant will establish a plant maintenance program typical of the industry. (Ex. 1, sections 2.4.1, 2.4.5.2.) In conjunction with an overall plant quality control program (Ex. 1, sections 2.4.5, 2.4.5.2), it is expected that this will allow the project to be adequately maintained to ensure acceptable reliability. (Ex. 7, p. 614.)

3. Fuel and Water Availability

The MEC will burn natural gas from a nearby Pacific Gas and Electric (PG&E) backbone pipeline, transmitted to the plant via a new one-mile long, sixteen-inch diameter pipeline, east of Highway 101. (Ex. 1, sections 1.1, 2.1.6). Natural gas is the sole fuel source. (1/8/01 RT 304, 339.)

The PG&E natural gas system, which provides access to gas from Canada, the Rocky Mountains, and the Southwest, represents a resource of considerable capacity. This system offers access to far more gas than the plant would require. (Ex. 1, § 2.4.3). Staff and Applicant agree that there is adequate natural gas supply and pipeline capacity to meet the project's needs. (Ex. 7, p. 614.)

Several Intervenors raised concerns over the availability of the project's natural gas fuel. (See, e.g., 1/8/01 RT 304, 330-331, 351-354, 358; see also various submissions from CARE; Intervenor Williams' Opening Brief (March 23, 2001), p. 6.) Applicant does not presently have in place a contract for its fuel supply. (1/8/01 RT 305.) The evidence of record indicates, however, that adequate natural gas supplies are available to meet the project's needs. Moreover, the evidence does not support, either directly or by inference, the proposition that PG&E will be unwilling or unable to supply natural gas to the project. (1/8/01 RT 306.)

Finally, Intervenor Garbett alluded to the possible use of liquefied natural gas as a fuel source. (1/8/01 RT 359.) This, and other alternative generating technologies such as oil-burning, coal-burning, nuclear, solar, wind, hydroelectric, biomass, ocean energy conversion, municipal solid waste, fuel cells and geothermal technologies were all considered. Given the project objectives, location, and air pollution control requirements, however, the evidence establishes that only natural gas-burning technologies are feasible for use by the proposed project. (Ex. 7, p. 622, 624.)

It is undisputed that the project will be heavily dependent upon the continuous availability of adequate water supplies for its operation. (1/8/01 RT 303.) The MEC intends to obtain recycled water for cooling purposes from the South Bay Water Recycling (SBWR) Program via a new pipeline. Over 80 percent of this water will be consumed in evaporation; the remainder will be returned in the form of wastewater through another new pipeline. Applicant further intends to procure potable water for plant use, as well as for cooling water backup, from the San Jose Municipal Water System via a third new pipeline, or alternatively from new onsite groundwater wells. (Ex. 1, sections 1.1, 1.5.2, 2.1, 2.2.7, 2.2.7.2, 7; Ex. 7, p. 614.) This matter is explored in detail in the **Soil and Water Resources** portion of this Decision.

4. Natural Hazards

Natural forces can threaten the reliable operation of a power plant. Flooding and seismic shaking (earthquake) present credible threats to reliable operation. (Ex. 7, p. 615; see also, the **Facility Design** portion of this Decision).

Flooding should not present a serious threat to plant reliability, as the project site lies outside the 100-year flood zone. (Ex. 1, section 2.3.1.) Moreover, proper site design and grading will provide adequate protection from flooding. Conditions

pertaining to these topics are included under the **Geology** and **Facility Design** portions of this Decision.

Members of the public also expressed concerns about reliability in th event of an earthquake. (1/8/01 RT 311-317, 356-358, 361-363.) The site lies within Seismic Zone 4. The project will be designed and constructed to the latest appropriate laws, ordinances, regulations, and standards. Compliance with current criteria for seismic design represents an upgrading of performance during seismic shaking, compared to older facilities. (See the **Facility Design** section of this Decision.) By virtue of being built to the latest seismic design criteria, this project will likely perform at least as well as, and perhaps better than, existing plants in the electric power system. In light of the historical performance of California power plants and the electrical system in seismic events, the evidence indicates that there is no special concern with power plant functional reliability adversely affecting the electric system's reliability due to seismic events. (Ex. 7, p. 615.)

5. Availability Factors

The North American Electric Reliability Council (NERC) compiles industry statistics for power plant availability. NERC's statistics show an availability factor of 91.10 percent for combined cycle units of all sizes. The Applicant's expectation of an annual availability factor from 92 to 98 percent (Ex. 1, sections 2.2.2, 2.2.2.16, 2.4.1) appears reasonable when compared to the NERC figure for similar plants throughout North America. Further, 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. (Ex. 1, sections 2.4.1, 2.4.5.2.) Based on these factors, the Applicant's estimate of plant availability appears realistic. The stated procedures for assuring design, procurement, and construction of a reliable power plant also are consistent with

industry norms; thus, the uncontroverted evidence establishes that the Metcalf Energy Center will be an adequately reliable facility. (Ex. 7, p. 616.)

FINDINGS AND CONCLUSIONS

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

1. The Applicant will ensure equipment availability/reliability by implementing quality assurance/quality control programs and by providing adequate redundancy of auxiliary equipment to minimize unplanned off-line events.
2. The project's use of two parallel trains of gas turbine generators/HRSGs and redundancy of other auxiliary equipment provides inherent reliability.
3. There is an adequate availability of natural gas for project operations.
4. Seismic events, flooding, or other natural hazards are not likely to adversely affect the project's reliability.
5. The expected availability factor of 92 to 98 percent appears realistic in light of the industry norm of 91 percent for this type of plant.
6. The Metcalf Energy Center will be built and operated in a manner consistent with industry norms for reliable operation. Therefore, the project will not degrade the overall reliability of the electrical system.

The Commission, therefore, concludes 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 Quality Assurance/Quality Control programs described above, appropriate Conditions of Certification are included in the **Facility Design** portion of this Decision.

D. TRANSMISSION SYSTEM ENGINEERING

In addition to the power plant portion of the Metcalf Energy Center project, Applicant will also construct and operate a relatively short electric transmission tie-line as a linear facility related to the power plant. (See Pub. Resources Code, §§ 25120, 25110.) The Commission's jurisdiction includes "…any electric power line carrying electric power from a thermal power plant…to a point of junction with any interconnected transmission system." (Pub. Resources Code, § 25107.) The MEC requires transmission line construction for the short segment necessary to convey power from the project to the existing PG&E Metcalf to Monte Vista transmission line immediately adjacent to the site. (Ex. 7, p. 629.)

The Commission's analysis of the project's "Transmission System Engineering" aspects includes evaluation of the outlet connecting lines, the power plant switchyard, termination facilities, and outlet alternatives. It also involves a determination of whether or not the project's transmission intertie facilities are likely to conform with all applicable laws, ordinances, regulations, and standards intended to ensure safe and reliable electric power transmission and, if not, to determine appropriate mitigation measures. Under the California Environmental Quality Act (CEQA), the Commission must conduct an environmental review of the "whole of the action", which may include facilities not licensed by the Commission. (Cal. Code of Regs., tit. 14, § 15378.) This examination was coordinated with the evaluation performed by the California Independent System Operator (Cal-ISO) in order to determine the project's effects on the interconnected electrical grid.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Description of Transmission Facilities

Both Applicant and Staff presented evidence describing the proposed transmission facilities. (3/12/01 RT 18-19; Ex. 7, pp. 629-630; Ex. 153, p. 2.) The MEC will provide a nominal electrical output of 600 megawatts (MW) to the electrical system by connecting to PG&E's existing Metcalf-Monte Vista No. 4, 230 kV transmission line, which passes near the northern boundary of the MEC site.

Applicant plans to construct a 230 kilovolt (kV) switchyard and approximately 240 feet of an overhead double circuit 230 kV transmission tie-line for this interconnection. The short new tie-line would form a new loop-in of the existing transmission line to the new MEC switchyard. (3/12/01 RT 18.) The new double circuit overhead line will exit the MEC switchyard, cross over a small area of the plant site, extend over Fisher Creek, and tie into the existing transmission corridor by interconnecting with the existing transmission line at Tower 0/6 on Tulare Hill. This is the most southern transmission tower in the existing corridor.

The lines in the existing PG&E corridor are the 500 kV Metcalf-Moss Landing, the four 230 kV Metcalf-Monte Vista lines, and two 115 kV Metcalf-El Patio lines. Because the PG&E property and the MEC site are adjacent, no new right-of-way for the new overhead segment is required. (3/12/01 RT 18; Ex. 7, p. 629.) The new transmission line would traverse primarily undeveloped grazing land in unincorporated Santa Clara County. (Ex. 153, p. 2.)

The take-off towers for the line will be spaced approximately 50 feet apart. Each phase of the two three-phase lines will be made of the same bundled 2,300 kilo-circular-mills (KCM) all aluminum conductor (AAC), which is presently installed on the existing line. The normal rating for the bundled conductor at 230 kV is

1,106 mega-volt-amps (MVA) or about 1,083 megawatts (MW), assuming a 0.98 power factor.

The proposed power plant switchyard would be located at the project site and consist of one 230-13.8 kV power transformer and nine 230 kV circuit breakers.

2. System Reliability

The interconnection of a new generator, if not properly designed and operated, could adversely impact the reliable operation of the state's electric power system. The role of the California Independent System Operator (Cal-ISO) regarding the interconnection of new generation is to ensure the reliable operation of the ISO-controlled grid. To do this, the Cal-ISO coordinates the planning of system modifications to ensure they meet the Cal-ISO's Grid Planning Criteria. These criteria incorporate the Western Systems Coordinating Council (WSCC) Reliability Criteria, the North American Electric Reliability Council (NERC) Planning standards, and local area reliability criteria.

In the present case, PG&E has conducted the required Preliminary Facilities Study and determined that no system upgrades are necessary as a result of the MEC project. The Cal-ISO, after review of the Detailed Facilities Study, required Supplemental Studies to define parameters and potential impacts of the project not addressed in the Detailed Facilities Study. After a review of the Supplemental Studies, the Cal-ISO granted final interconnection approval to the MEC on November 29, 2000. (Ex. 153, App. EE.) This approval supports Applicant's position that the MEC can be connected to the system without creating significant problems or the need for system modifications. Applicant's witness emphasized the proposal's straightforward design and characterized the interconnection as the simplest he has ever designed in over 20 years of transmission planning experience. (3/12/01 RT 18.) Witnesses for Applicant, Cal-ISO, and the Commission staff each testified that the proposed design

complies with all applicable laws, ordinances, regulations, and standards. (3/12/01 RT 18-19, 36-38.) Witnesses for both Staff and the Cal-ISO concluded that the MEC will create no new reliability impacts upon the system and will require no upgrades to downstream facilities in order to be reliably interconnected. (3/12/01 RT 37-38, 58, 64.) No party introduced evidence to challenge these conclusions.

3. Analysis of Alternatives

Five different transmission line alternatives were considered for the Metcalf site.[9] Four alternatives were determined by both the Applicant and the Commission staff to be inferior to the proposed interconnection design. (3/12/01 RT 20-25; Ex. 153, p. 3; Ex. 7, p. 633.) In reviewing each of the alternative designs, the testimony of record indicates that the alternatives suffered from various combinations of cost, reliability, and environmental problems which made each one inferior to the proposed design. (Ex. 7, p. 633.)

FINDINGS AND CONCLUSIONS

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

1. The California Independent System Operator is the entity legally designated to analyze downstream non-environmental transmission system impacts beyond the first point of a project's interconnection with the integrated system.

2. Pacific Gas and Electric Company performed a Detailed Facilities Study to analyze the potential reliability and congestion impacts likely to occur when the MEC interconnects to the grid.

[9] All five transmission interconnection alternatives are based on the proposed site. However, analyses to determine the project's local system effects include an examination of alternative sites. These are discussed in next the section of this Decision entitled "Local System Effects".

3. The California Independent System Operator has made its final determination that interconnecting the MEC as proposed will not create adverse impacts to the reliability of the electrical system.

4. The California Independent System Operator has determined that interconnecting the MEC will not require the construction of significant additional transmission facilities downstream of the project.

5. The determinations of the California Independent System Operator are based on its review of the Preliminary Facilities Study, the draft Detailed Facilities Study, Supplemental Studies, and other analyses performed by the California Independent System Operator and by Pacific Gas and Electric Company.

6. The outlet line from the project will interconnect to the Pacific Gas and Electric Company's existing 230-kV system on the Metcalf-Monte Vista No. 4 transmission line.

7. Four alternative interconnection designs were analyzed and determined to be inferior to the proposed design due to cost, reliability, and environmental impacts.

8. The transmission outlet for the MEC is safe and acceptable.

9. The Commission is responsible, as lead agency under the California Environmental Quality Act, to analyze the environmental effects of changes to the transmission system which are related to the addition of new power plants licensed by the Commission.

10. With the implementation of the various mitigation measures specified in the Conditions of Certification contained in this Decision, the proposed transmission interconnection for the project will not contribute to significant adverse direct, indirect, or cumulative environmental or electrical system impacts.

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

We therefore conclude that interconnection of the project as proposed is acceptable, and that it will not result in the violation of any criteria pertinent to transmission system engineering.

CONDITIONS OF CERTIFICATION

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

a) The power plant switchyard, outlet line, and termination shall meet or exceed the electrical, mechanical, civil, and structural requirements of CPUC General Order 95, Title 8, CCR, section 2700 et seq., "High Voltage Electric Safety Orders", National Electric Code (NEC), and Industry Standards.

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

c) The MEC 230 kV switchyard shall include busses in a breaker and a half scheme.

d) The new transmission line will be a 230 kV double circuit line overhead extending 240 feet from the take-off towers located inside the MEC switchyard to the existing tower No. 0/6 of the Metcalf to Monte Vista No. 4 line located in the existing PG&E corridor. The tower will be modified to accommodate the new circuits.

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

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

g) The transmission interconnection will use bundled 2300 kcmil AAC conductors.

h) The project owner shall provide a Detailed Facilities Study including a description of remedial action scheme sequencing and timing and an executed Generator Special Facilities Agreement (GSFA) for the transmission interconnection with PG&E. The Detailed Facilities Study and GSFA shall be coordinated with the Cal-ISO.

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

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

b) For each element of the transmission facilities as identified above, the submittal package to the CPM shall contain the design criteria, a discussion of the calculation method(s), a sample calculation based on "worst case conditions", and a statement by the registered engineer in responsible charge (signed and sealed) that the transmission element(s) will conform with CPUC General Order 95, Title 8, CCR, section 2700 et seq., the NEC, PG&E Interconnection Handbook, CPUC Rule 21, and related industry standards.

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

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

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

TSE-3 The project owner shall be responsible for the inspection of the transmission facilities during and after project construction and any subsequent CPM approved changes thereto, to ensure conformance with CPUC GO-95, the NEC, PG&E Interconnection Handbook, Cal-ISO tariffs, CPUC Rule No. 21, and these conditions. In case of non-conformance, the project owner shall inform the CPM in writing within ten (10) days of discovering such non-conformance and describe the corrective actions to be taken.

Verification: Within sixty (60) days after first synchronization of the project, the project owner shall transmit to the CPM:

a) "As built" engineering description(s) and one-line drawings of the electrical portion of the facilities signed and sealed by the registered electrical engineer in responsible charge. A statement attesting to conformance with CPUC GO-95, the NEC, CPUC Rule No. 21, the PG&E Interconnection Handbook, and these conditions shall be concurrently provided.

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

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

E. LOCAL SYSTEM EFFECTS

This topic area includes the effects of the MEC or alternative local generation on the reliability and efficiency of the local electrical system. These effects can be manifested as an increase or decrease in system losses, deferral of capital investments, or operational reliability characteristics. In some cases the addition of new generation to the local electrical system can influence the entire Bay Area system and even the larger Northern California system.[10]

The California Environmental Quality Act (CEQA) requires the Commission's analysis to include a discussion of the potential energy impacts of the project. Particular emphasis is placed on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. CEQA also emphasizes that the decision-maker should consider "the effects of the project on local and regional energy supplies and on requirements for additional capacity." (14 Cal. Code of Regs., §§ 15000 et seq., Appendix F).

As part of this review process, Staff and the California Independent System Operator (Cal-ISO) identified what they describe as "profound" electrical reliability benefits of the MEC and therefore included a separate analysis of local system effects in the FSA. (Ex. 7, pp. 643-676; Staff Opening Brief on LSE (April 12, 2001), p. 18.) The Staff/Cal-ISO effort was later supplemented by Applicant's analysis. (Ex. 153, pp. 4-36.) Tim Alton filed opposing testimony on behalf of the Santa Teresa Citizens Action Group (STCAG). (Ex. 159.)

[10] System reliability in Northern California is evaluated according to applicable criteria and standards of the Western Systems Coordinating Council (WSCC), the California Independent System Operator (Cal-ISO), the California Public Utilities Commission (CPUC), and the Pacific Gas and Electric Company (PG&E).

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. THE PROBLEM

Applicant's witness testified that the south Bay Area is experiencing an electricity reliability crisis because "the electric system has been strained to the breaking point by soaring demand coupled with a lack of local generation." (3/12/01 RT 89: 20-22.) In this witness' opinion, the lack of new generation in the Bay Area is the single greatest cause of the electrical reliability crisis currently being experienced. Even assuming the addition of all proposed generation and transmission upgrades, sometime between 2003 and 2008 the San Jose/ Silicon Valley area will not be able to meet WSCC criteria for the prevention of a voltage collapse.[11] (3/12/01 RT 90.) Another expert witness opined that voltage collapse has the potential of "dragging down all of northern California, maybe even all of California, or perhaps even the WSCC." (3/12/01 RT 139:16-18.)

Applicant's testimony further indicates that, due to the area's excessive reliance on imported power, the Silicon Valley and San Jose are more vulnerable to a catastrophic transmission outage than any other major metropolitan area in California. (3/12/01 RT 90.) Applicant's transmission experts emphasized the urgency of the problem by explaining that Internet technology growth in Silicon Valley and the Bay Area have caused local demand to increase at a substantially greater pace than that of the State as a whole. (3/12/01 RT 127; Ex. 153, p. 5.) This demand growth is occurring in an area which is the most generation-deficient major urban area in California. (3/12/01 RT 104-105; Ex. 153, pp. 5-6, App. K.)

Applicant's testimony compared the percentage of local generation which serves local loads in several urban areas. While Los Angeles generates 87 percent of

[11] Voltage collapse is defined as a point where reactive demand exceeds the supply, causing voltage at that point in the system to drop. Eventually the voltage will drop to a point at which it can no longer serve the load. (Ex. 7, p. 673.)

its demand and San Diego 100 percent, the Santa Clara County area generates only 14 percent of its load. (Ex. 153, p. 5.) Witnesses from the Cal-ISO and Staff corroborated this testimony. The Cal-ISO noted that heavy reliance on imported power requires a large number of transmission lines into the area and raises concerns with voltage control and dynamic stability. The witness stated that a general rule of transmission planning is that imports should represent about 60 percent of local load, while local generation should comprise the remaining 40 percent. The approximate load in the San Jose area is 2700 MW, only about 240 MW of which is generated locally. (3/12/01 RT 289-290.) The Cal-ISO witness added that the San Jose area will need two projects the size of the MEC in order to reach the 60/40 ratio. (3/12/01 RT 299.) Since all generation is consumed at the load closest to the generator, all the MEC's generation will be consumed locally. (3/12/01 RT 298:12-20.)

Both Staff and Applicant witnesses also noted that the existing generation in the Bay Area is old and unreliable. The typical lifespan of these generators is nominally 30 to 40 years, yet 3,700 MW of Bay Area generation averages over 38 years old. (Ex. 153, p. 6.) In the Cal-ISO's estimation" …the older the generation is the less it runs." (3/12/01 RT 291:17-18.)

2. ANALYTIC METHODOLOGY

To assess the impact of the project and various alternatives on local system reliability, both the Commission staff (in cooperation with the Cal-ISO) and the Applicant performed separate engineering analyses of the local system with and without the MEC. The evidence shows that the analyses employed conservative assumptions, including the assumption that the local electrical system will be strengthened by a variety of transmission and generation projects which have not

yet been constructed. The assumed additions include three major generation plants and seven local transmission upgrades.[12] (Ex. 7, p. 647; Ex 153, p. 4.)

Staff testimony described the "south Bay Area" as composed of PG&E's De Anza and San Jose Divisions. This area has very little local generation and most power is shipped in on major transmission lines. (Ex. 7, p. 644.) The total local generation in both the year 2002 and the year 2005 is 242 MW. The modeled load in the area is 2,857 MW in 2002 and 3,297 MW in 2005 during peak conditions.[13] (Ex. 7, p. 645)

Staff modified PG&E's forecasted loads for the Greater Bay Area to more accurately reflect substantial increases over earlier estimates. The Bay Area loads were scaled up to a forecasted peak demand of approximately 10,000 MW in 2002 and 10,750 MW in 2005. The load scaling was based on the recent recorded loads for the Greater Bay Area. (Ex. 7, p. 647.)

Staff also developed a series of criteria to assess the performance characteristics of local generation. (Ex. 7, p. 648.) The criteria are:

- **Increase or decrease in system losses.** The increase or decrease is identified by comparing the system with and without the target generator interconnected and operating.
- **Thermal overloads and impacts to system performance under outage conditions.** Comparison of system outage performance is determined by measuring: transmission facility loading under outage conditions with and without the target generator; and change in voltage levels under outage conditions with and without the target generator.

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12 Assumed generation: Delta Energy Center, Los Medanos Energy Center, and Moss Landing Power Plant Project. Assumed transmission projects: reconductor Pittsburg-Tassajara 230 kV line; split Metcalf-Monte Vista 230 kV line into 2 circuits; new (3rd) Tesla 500 kV transformer; new Newark-Tesla 230 kV line; loop Newark-San Mateo 230 kV line into Ravenswood; add 350 MVAR static capacitors to Metcalf 500 kV bus; add 100 MVAR static capacitors to Martin 115 kV bus.

13 During his testimony, the Cal-ISO witness noted that new data revealed the Cal-ISO load estimates for Silicon Valley were actually low by approximately 160 MW. This suggests the potential for even more problems than shown in the existing analysis. (3/12/01 RT 299.)

- **Reactive margin.** Reactive margin is determined by power flow analysis to identify the relative change in reactive margin due to the addition of the target generator.
- **Operational reliability.** Operational reliability includes an evaluation of "reliability must run" (RMR) costs and an evaluation of whether or not the new facility would provide increased or decreased operational flexibility.
- **Ability to be integrated into existing and planned system.** This criterion is evaluated by determining the need for major system additions or system modifications to accommodate the new facility.
- **Deferral of capital facilities and redeployment of existing facilities.** Deferral of capital facilities is evaluated by identifying proposed facilities for which need is delayed or eliminated because a target generator offsets the need for such facilities. Redeployment of existing capital facilities occurs when a target generator removes the need for an existing facility and this facility can be utilized in a different location.

No party credibly suggested that these criteria were inappropriate. The application of these criteria in light of the proposed project is discussed below.

System Losses. Transmission system losses are a function of generation schedules, imports, exports, wheeling, and system loop flow in addition to load. Transmission line losses occur as a result of conductor resistance and corona discharge. Resistance losses are significant, especially on long, heavily loaded transmission lines with a high load factor (75% - 100%). Typical values for utility systems in California range from 12 kW/mile to 500 kW/mile for line loadings between 25% and 100% of conductor ratings. (Ex. 7, p. 648.) A reduction in line losses essentially produces "free megawatts" since it is power created by greater transmission efficiency with no additional costs or environmental impacts. (3/12/01 RT 107, 109.)

The evidence establishes the MEC will reduce line losses by at least the amounts shown below:

LOSS REDUCTIONS AS COMPUTED BY STAFF

Measure	2002	2005
Range of Peak Loss Reductions (MW)	12-67	21-84
Average Peak Loss Reduction (MW)	36	48
Average Peak Loss Reduction When Displacing Local Generation (MW)	18	25
Average Peak Loss Reduction When Displacing Remote Generation (MW)	44	58
Dispatch Weighted Peak Loss Reduction (MW)	30	39
Estimated MEC Loss Factor	1.07	1.08
Estimated Annual Energy Savings (GWh)	64	81
Approximate Number of Homes That Could Be Served	9,000	12,000
Annual Avoided Energy Cost ($ millions)	3-4	4-5
Present Value of Avoided Energy Costs Over 20 Year Plant Life ($ millions)	25-34	32-43

Source: Ex. 7, pp. 652-653; Ex. 153, p. 18.

Staff conservatively determined that, in 2005, system loss reductions from MEC would be between 21 and 84 MW and up to 81 gigawatt hours (GWh). (3/12/01 RT 108.) Staff concludes "… that the MEC will substantially reduce energy losses and provide numerous benefits to the local and regional energy supply. If one anticipates that the MEC … would operate for at least 20 years, there are substantial long-term environmental benefits related to reduced fuel and water use and to reduced emissions." (Ex. 7, p. 651.)

Applicant characterized the Staff estimate as "intensely conservative, erring at each juncture on the side of minimizing the impact of loss reductions." (Ex. 153, p. 18.) One of Applicant's witnesses explained that the Staff analysis failed to assume that, because of the MEC's location in the transmission system, it is more likely to run constantly. Consequently, in this expert witness' opinion, the energy savings from the MEC should be approximately two and one-third times the amounts suggested by Staff. (3/12/01 RT 135; Ex. 153.)

Applicant also compared loss reductions from adding hypothetical generation at the Los Esteros or the Newark Substations. Applicant acknowledges that, assuming a plant could be built at or near either of these substations, it would

reduce losses more than the MEC. However, the MEC still produces loss reductions even if a plant could be built at one of these other locations.[14] (Ex. 153, p. 19.)

While Applicant's analyses of loss reductions differed in some assumptions and approaches from that of Staff, both parties nevertheless concluded that system losses are reduced by generation in the project area, and that such generation would also reduce losses throughout the system by providing additional Bay Area generation. There is no persuasive evidence of record which contradicts these conclusions.

Thermal Overloads. Comparison of system outage performance is determined by measuring: transmission facility loading under outage conditions with and without the target generator; and changes in voltage levels under outage conditions with and without the target generator.

Witnesses for both Staff and Applicant testified that the MEC will relieve the potential for overloads of the transmission lines serving the local area. Staff determined that the MEC improves projected future transmission system performance as measured by: 1) reduction in number of component overloads; 2) reduction in number of low bus voltages; and 3) reduction in number of outage cases which the load flow modeling convention could not solve. (Ex. 7, p. 655.)

Applicant's witness supported the Staff analysis. Because of the location of the MEC, it will allow more power to flow from the power plant at Moss Landing. This can prevent or reduce on-peak curtailments of Moss Landing by 415 MW to 720 MW.[15] (3/12/01 RT 111.) This would avoid the need to either rebuild the existing

[14] Loss reductions from the MEC in conjunction with an additional power plant at one of the Newark, Los Esteros, or Tesla Substations would be at least 16 MW, 11 MW, and 18 MW respectively. (Ex. 153, p. 19.)

[15] This is significant since Moss Landing Power Project generation must currently be curtailed on-peak, when it is needed the most.

Moss Landing to Metcalf transmission line, or to construct a new line. (Ex. 153, p. 22.)

Applicant also presented a summary of various transmission line overloads which would be reduced or eliminated with the addition of the MEC:

OVERLOADS REDUCED OR ELIMINATED WITH THE ADDITION OF MEC

Facility	Before%(Norm/Emrg)	After%(Norm/Emrg)
Moss Landing to Metcalf 230-kV #1	178/159	151/135
Moss Landing to Metcalf 230-kV #2	179/160	151/135
Moss Landing to Green Valley 115kV #1	155/137	146/129
Moss Landing to Green Valley 115kV #2	147/131	146/129
Green Valley to Morgan Hill 115kV	147/131	125/111
Tesla to Newark 230=kV #2	83/104	Eliminated
Metcalf 500/230-kV #1	81/117	Eliminated
Metcalf 500/230-kV #2	144/127	121/106
Monta Vista 230/60-kV	103/106	Eliminated
Ravenswood 230/115-kV	120/105	118/103
Panoche 20/115-kV	132/131	Eliminated

Source: Ex. 153, p. 21

In addition to relieving the overloads noted above, the expert witnesses predict benefits on lines which are not yet overloaded, but whose loading will be reduced once the MEC is added to the system. Moreover, these reductions in line overloads appear unique to the MEC's location.[16] No party credibly disputed this.

Voltage Collapse and Reactive Margin. Voltage collapse involves the ability of the system to support required voltages without the threat that a small or sudden

[16] None of the identified alternatives solves the Moss Landing to Metcalf line overload, nor does generation at Tesla relieve overloading to a degree comparable to the MEC. (3/12/01 RT 111; Ex. 153, p. 123.) Applicant acknowledges that if it is possible to build generation at the Newark or Los Esteros Substations, there also will be significant loss reductions. However, the evidence shows that MEC offers superior loss reductions for overloads on the Metcalf 500/ 230-kV#1 transformer and reduced overloads on the Ravenswood 230/115 kV transformer. (3/12/01 RT 111; Ex. 153, p. 24.)

change might cause the voltage to drop to a point where it cannot be recovered or maintained.[17] In a power system, unless there is sufficient active and reactive power, the voltage collapses and the system stops carrying power until it can be restarted. (Ex. 153, p. 26.)

Reactive power must be available at important buses[18] to prevent voltage collapse. Reactive margin is the amount of additional reactive load, usually measured in megavars (MVAR),[19] which may be added at a particular bus before the system is under threat of voltage collapse. Staff used a power flow analysis to estimate the relative change, due to the addition of the MEC, in reactive margin at four Greater Bay Area substation transmission buses: Metcalf 500 kV, Metcalf 230 kV, Newark 230 kV, and Tesla 500 kV. (Ex. 7, p. 655.)

Applicant studied the loss of the Tesla to Metcalf and Moss Landing to Metcalf 500 kV lines and found that, for 2005, the system does not meet WSCC criteria for a single contingency outage. (3/12/01 RT 114; Ex. 153, p. 27.) The greatest risk is the loss of the Moss Landing to Metcalf line. By 2005, even with all generation and transmission improvements planned by PG&E and the Cal-ISO, the loss of the line would result in 100 MW less than required to serve load. (3/12/01 RT 114.) When WSCC criteria are applied, even the addition of generation from the Moss Landing Power Project, Los Medanos Energy Center, and Delta Energy Center does not eliminate the risk of a south Bay Area voltage collapse by 2005.[20] Under conservative load growth assumptions, Applicant's witness testified that the MEC is needed no later than 2008 to meet WSCC

[17] Applicant's witness compared voltage collapse to the effect of someone at home flushing the toilet while another person is in the shower. The sudden drop in cold water pressure from the flushed toilet could result in scalding the person showering. (3/12/01 RT 113.)

[18] Buses are conductors that serve as a common connection for multiple transmission lines. (Ex. 7, p. 662.)

[19] "Megavar" is defined as one megavolt ampere reactive (a measure of reactive power). Reactive power demand is generally associated with motor loads; this demand must be supplied by generation units or static reactive sources in the system. (Ex. 7, p. 667.)

[20] This analysis also assumed a one-percent annual load growth, an assumption which is probably low. (3/12/01 RT 115.)

voltage stability standards. (3/12/01 RT 115; Ex. 153, p. 23.) More aggressive growth assumptions for the area show the MEC needed as early as 2003. (3/12/01 RT 180.)

Operational Reliability. Operational reliability includes an evaluation of Reliability Must Run (RMR)[21] costs and an evaluation of whether or not a new facility would provide increased or decreased operational flexibility. RMR costs are those required for contractual arrangements with generators in a local area in order to maintain system reliability where the transmission system is not adequate to serve all the load. (3/12/01 RT 293.) The analysis of record explored whether the addition of the MEC to the Cal-ISO controlled grid has the potential to reduce RMR costs.

Staff testimony notes that the Cal-ISO is considering different approaches to obtain the local area reliability services that it currently procures via RMR contracts. If the Cal-ISO proceeds with its proposal for procurement of reliability service via two-day-ahead local reliability services auctions, then the addition of more generation in the Bay Area should reduce the cost of these services. This is because there would be additional generation during off-peak and partial peak times to provide competition for the existing generation sources. (Ex. 7, p. 658.)

If, on the other hand, the Cal-ISO were to maintain its current practice of executing RMR contracts with generators in the local areas, the additional generation at the MEC should still result in reduced costs. The reason RMR costs would be lower is that for each hour of the year, the RMR units are dispatched at the minimum levels required to meet the Cal-ISO reliability criteria. Since more efficient units (such as the MEC) can be dispatched instead of less efficient existing units during off-peak and partial-peak conditions, the costs incurred under the RMR contracts for maintaining local system reliability should be less than if these new units were unavailable. (Ex. 7, p. 658.)

[21] The minimum generation (number of units or MW output) required by the Cal-ISO to be on line to maintain system reliability in a local area. (Ex. 7, p. 670.)

Applicant conducted a study of RMR requirements with and without the MEC. This analysis demonstrates that approximately 945 MW of RMR generation can be avoided once the MEC is operational.[22]

Staff testimony also points out that, under partial load conditions, the additional generation provided by the MEC will allow additional flexibility for the Cal-ISO, PG&E, and generators in the Bay Area when it comes to scheduling maintenance of transmission facilities and generating units. This added flexibility will help prevent problems from occurring when unexpected high temperatures combine with unforeseen extended maintenance outages to adversely impact the operation of the grid.[23] (Ex. 7, pp. 658-659.)

Ability to be Integrated into Existing and Planned System. Based on the Detailed Facilities Study from PG&E, the Metcalf Energy Center can be connected to the Cal-ISO controlled grid with no major additions. There is no evidence that any of the additional facilities planned to be added to the grid through 2005 will need to be modified because of the addition of the MEC (other than the potential project deferrals discussed in the next section). (Ex. 7, p. 659.)

The evidence conclusively establishes that the MEC has its Final Interconnection Approval from the Cal-ISO. (3/12/01 RT 117; Ex. 153, App. EE.) Expert testimony also establishes that MEC integrates well with the planned Jefferson to Martin 230 kV line to support San Francisco. The 600 MW which the MEC would provide at the Metcalf substation will allow more power within the system to flow to San Francisco on the planned transmission line. (3/12/01 RT 118; Ex. 153, p. 32.)

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[22] This could result in potential annual savings to ratepayers of $11.4 million due to the reduction in RMR expenses. (3/12/01 RT 117, 142; Ex. 153, p. 31.)

[23] Such as occurred on June 14, 2000. Expert testimony established that the June 14, 2000 outage would probably not have occurred if the MEC were operating at the time. (3/12/01 RT 292.)

DEFERRAL OF CAPITAL FACILITIES AND REDEPLOYMENT OF EXISTING FACILITIES. Under this criterion, Staff identified proposed facilities which could be delayed or eliminated because of the MEC. Redeployment of existing capital facilities would also occur if the MEC removes the need for an existing facility and if that facility can be utilized in a different location. The evidence establishes that, from an overall electrical system perspective, these factors are beneficial.

To have a beneficial impact, such as deferral or redeployment of grid capital facilities, the MEC project must: reduce a criteria violation which triggered a capital project and be in service prior to the required on-line date of the capital project. Staff enumerated several projects which were identified through joint PG&E and Cal-ISO capital facility planning processes and Staff analysis. The following projects are potential deferral candidates due to the MEC:[24]

- the 3rd Metcalf 500/230 kV transformer;
- the Contra Costa - Eastshore 230 kV line reinforcement (37 mile line);
- the Newark - Ravenswood 230 kV line reinforcement (8 mile line);
- the Castro Valley - Newark 230 kV line reinforcement (25 mile line);
- the Tassajara - TES Junction 230 kV line reinforcement (3 ½ mile line); and
- voltage support to mitigate low voltages at 107 substations.

(3/12/01 RT 119; Ex. 7, p. 657; Ex. 153, p. 33.)

[24] The four 230 kV line reinforcement projects will be deferred at least one year. Studies performed by Staff indicate that the 3rd Metcalf 500/230 kV transformer can be deferred for four years if the MEC is present. (Ex. 7, p. 659.) Applicant's testimony establishes that this amounts to an estimated cost deferral of $30-33 million in expenses to PG&E. (Ex. 153, p. 34.) One of Applicant's witnesses testified that he identified five facilities which will certainly be deferred by the MEC. The combined cost of these ranges from $150 million to $300 million. This is based on estimated costs of $10 million per mile to construct transmission lines in the Bay Area. (3/12/01 RT 122.)

In addition, the evidence shows that PG&E and the Cal-ISO have identified as many as nine more projects which may be cancelled or deferred if the MEC operates. (Ex. 153, Table **TSE-14**.)

Staff testimony showed that its 2005 analysis determined 107 more substations would be in violation of Cal-ISO Grid Planning voltage criteria if the MEC were not built. Staff estimated that the amount of voltage support required to mitigate such violations is likely to be significant. (Ex. 7, p. 659.) The record contains no persuasive evidence challenging the foregoing.

3. PREVENTION OF CATASTROPHIC EVENTS

In addition to commenting on the analytical criteria applied by the Staff and the Cal-ISO, Applicant offered testimony to show the MEC's role in preventing catastrophic failures in the local system.

Cal-ISO Planning Criteria include avoidance of the "N-2" (or overlapping N-1, N-1) situation in which the Moss Landing to Metcalf transmission line goes down while the Tesla to Metcalf line is out-of-service. (3/12/01 RT 114-115.) PG&E's 2001-2005 Transmission Assessment concludes that, if this contingency occurs, the result would be massive voltage collapse in the Bay area and area-wide blackouts. (3/12/01 RT 122-123; Ex. 153, p. 35, App Y.) No other contingency in the PG&E study results in such potentially serious and widespread outages. (Ex. 153, p. 36.) Applicant's studies found that in such an event, at least 1000 MW would have to be curtailed for thermal reasons. (3/12/01 RT 123.) Experts for the Applicant testified that MEC is needed "today" to prevent the catastrophic N-2 outage scenario. (3/12/01 RT 180:15.)

4. ENVIRONMENTAL CONSIDERATIONS

Staff determined that the MEC will substantially reduce energy losses; this leads to long-term environmental benefits related to reduced fuel and water use, as well as reduced air emissions. (Ex. 7, p. 651.) An Applicant witness testified that operation of the MEC would offer further environmental benefits by displacing higher emission generation in the system. This witness concluded that the MEC is likely to displace older power plants, which average twelve times the NOx emissions, eleven times the ozone formation, and seven times the PM_{10} emissions. (3/12/01 RT 127.) The witness also noted that the MEC's contribution to system reliability will make it less likely that smaller, more polluting backup generators (BUGs) will be used.[25] (3/12/01 RT 132-133.)

Other parties neither offered credible evidence to persuasively suggest that the criteria used to analyze the MEC's system effects were erroneous, nor does the record contain countervailing evidence sufficient to contradict the effects of the MEC upon the electrical system, as summarized above. Rather, the record shows that the essential focus of the parties and others was upon attempting to establish that either the positive effects of the MEC at its proposed location are not sufficient to outweigh its perceived impacts, or that there are different locations available to site a power plant which would result in similar or better effects to the electrical system. (See, e.g., Ex 159; City of San Jose Reply Brief (April 4, 2001, p.5), STCAG Reply Brief on Group 3 Topics (April 24, 2001), Reply Brief of Intervenor Murphy (April 23, 2001).) We evaluate these

[25] To demonstrate the significance of the MEC displacing the more polluting BUGs, the expert witness estimated that during the June 14, 2000 blackout approximately 12 MW of backup generation was used. (3/12/01 RT 131; Ex. 155, Att. 3, Table 2.) The emissions from those BUGs amounted to the equivalent of approximately 6500 MW of MEC generation based on controls for NOx, and about 1200 MW of MEC generation when compared to ozone precursors. (3/12/01 RT 131.) Put another way, the emissions of criteria pollutants from emergency backup generators range from 36 to 551 times greater than the equivalent emissions from the MEC, even without counting the offsets for the MEC. (Ex. 155, Att. 3, p. 16.) We mention this point only because it constitutes evidence presented to the Committee; we do not address the broader issue of the merits of necessity of using BUGs.

contentions as part of our discussion in the **ALTERNATIVES** portion of this Decision.

FINDINGS AND CONCLUSIONS

Based on the persuasive weight of the evidence of record, we make the following findings and reach the following conclusions:

1. California and the greater San Jose area face potentially serious electricity shortages.

2. The south Bay Area is the most generation-deficient major urban area in the state of California.

3. The local electrical load in the south Bay Area is approximately 2700 MW; existing local generation provides about 240 MW, or fourteen percent of this load.

4. From an electrical system perspective, it is desirable that at least forty percent of an area's load be generated locally.

5. The power from the MEC will likely be used to supply the electrical demands of the south Bay Area.

6. Existing Bay Area generation is on average 38 years old, and is thus less reliable than newer units.

7. Even assuming the construction of a number of new generation facilities already licensed by the Commission and construction of transmission improvements already identified and planned, the San Jose/Silicon Valley area will at some point between 2003 and 2008 fail to meet WSCC criteria for prevention of voltage collapse and criteria for local area generation.

8. The MEC will reduce the potential for voltage collapse in the south Bay Area.

9. The addition of the MEC project reduces line losses in the range of from 21 MW to 84 MW; these losses would otherwise result from transporting power on the transmission system.

10. The addition of the MEC will reduce or eliminate overloads on transmission lines throughout the local system area.

11. The MEC can readily be integrated into the existing system and is compatible with all planned system improvements.

12. The MEC has Final Interconnection approval from the Cal-ISO.

13. The estimated energy savings in 2005 of 81 GWh from the reduced system losses would provide sufficient energy to serve 9,000 to 12,000 homes each year and contribute to a related decrease in the use of fossil fuels, water, and production of air emissions.

14. The MEC project provides a source of real and reactive power to serve loads in the south Bay Area; this reduces the need for imported power over existing transmission facilities.

15. The MEC would provide an increase in reactive margin of hundreds of megavars. This increases the south Bay Area's ability to maintain voltages and prevent voltage collapse, as well as assists in the maintenance of the interconnected system's reliability.

16. The MEC is likely to cause a reduction in Reliability Must Run (RMR) costs and provide additional operational flexibility, especially during medium to high load conditions.

17. The MEC will cause or contribute to the deferral or relocation of substantial capital facilities planned or currently located in the south Bay Area and the Greater Bay Area. Deferral or elimination of the need for linear facilities will likely result in deferral or elimination of the environmental impacts associated with the construction of such facilities.

We therefore conclude that operation of the proposed project will contribute to avoiding or reducing inefficient and unnecessary consumption of energy, and will provide benefits to the electrical systems in the south Bay Area and the Greater Bay Area.

F. TRANSMISSION LINE SAFETY AND NUISANCE

The project's transmission line must be constructed and operated in a manner that protects environmental quality, assures public health and safety, and complies with applicable law. This analysis evaluates the potential impacts of the project's transmission tie-line on aviation safety, radio-frequency interference, audible noise, fire hazards, nuisance shocks and hazardous shocks, as well as whether the tie-line will cause or contribute to unacceptable levels of electric and magnetic fields.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Description of Transmission Tie-Line

The energy generated at the Metcalf Energy Center (MEC) will be transmitted through new a double circuit 230 kV overhead transmission tie-line from a new 230 kV switchyard at the MEC to the existing Metcalf/Monte Vista No. 4 Pacific Gas and Electric (PG&E) transmission line. The new line, approximately 240 feet long, will extend from two 70 foot tall H-shaped take-off support structures within the new switchyard to the existing line. (Ex. 1, section 5, pp. 8.11-15.) These take-off structures will be spaced approximately 50 feet apart. The route of the line will exit MEC to the north and immediately cross Fisher Creek. (Ex. 1, section 5.5-4.) The project's tie-line will be constructed with the same type of conductor used in the existing PG&E line.

The transmission tie-line will traverse an area of primarily vacant land and agricultural land along its 240-foot route. This route minimizes the length of new line necessary to transmit the project's generation into the power grid. The interconnection point will be approximately 250 feet from Monterey Road, the

nearest area of potential public exposure. The PG&E corridor crosses Monterey Road immediately northwest of the interconnection point.

2. Potential Impacts

a. Electric and Magnetic Field Exposure

In recent years, the possibility of adverse health effects from exposure to electric and magnetic fields (EMF) has increased public concern about living near high-voltage lines. The available data evaluated by the California Public Utilities Commission (CPUC) and other regulatory agencies do not definitively establish that EMF poses a significant health risk nor prove the absence of health hazards. While there is 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 relate to the magnetic field.
- The measures employed for field reduction can affect line safety, reliability, efficiency, and maintainability, depending on the type and extent of such measures. (Ex. 7, p. 137.)

Applicant will implement PG&E's EMF reduction measures arising from CPUC Decision 93-11-013. The evidence shows that the Applicant calculated the maximum field strengths at the interconnection point of maximum impact to reflect the maximum contribution of the proposed line to total field strengths, including the proposed line and the other five lines within the existing corridor. The results indicate that the proposed line will not contribute significantly to existing EMF levels within the PG&E right-of-way through which the MEC power will be transmitted. (Ex. 7, pp. 141-142; see also, Ex. 6A; Applicant's Group I

Brief (March 23, 2001), p. I-17.) The calculated values are typical of similar lines within the PG&E service area. (Ex. 7, p. 142.)

The nearest residence to the interconnection point along the Monterey Road will be more than 1,500 feet away. Thus, long-term residential EMF exposure would be minimal, and any exposure of potential concern would be limited to line workers and individuals in transit across the right-of-way. (Ex. 7, pp. 133, 139.) Such short-term exposures are well understood, and are significantly lower than exposures from the use of common household appliances such as hair dryers, toaster ovens, microwave ovens, and electric shavers. (Ex. 7, p. 142.) Condition of Certification **TLSN-3** will ensure that the fields are reduced to the extent proposed by the Applicant.

b. Aviation Safety

Any hazard to area aircraft relates to the potential for collision with the line in the navigable air space. There are no major airports in the immediate project vicinity. The closest airfield is Canyon Creek Heliport at Morgan Hill, 7.2 nautical miles southwest of the MEC. The next closest airport is Reid-Hillview Airport in San Jose, 7.6 miles northwest of MEC. An FAA "Notice of Construction or Alteration" will not be required for the proposed power line, according to existing regulatory criteria. However, owners of transmission lines generally inform the FAA about such lines before construction, even when the FAA notice is not required. Thus, the proposed line will not pose a significant hazard to area aviation. (Ex. 7, p. 140.)

c. Interference With Radio-Frequency Communication

Transmission line related radio-frequency interference is one of the indirect effects of line operation. The level of such interference usually depends on the magnitude of the electric fields involved. Corona discharge, referred to as spark

gap electric discharge, occurs within gaps between the conductor and insulators or metal fittings. Corona related communications interference is most commonly caused by irregularities (such as nicks and scrapes on the conductor surface), sharp edges on suspension hardware, and other irregularities around the conductor surface. The Applicant's use of a low-corona conductor design and construction methods (Ex. 1, section 5, pp. 5-14 and 5-15) should minimize the potential for such interference which is usually of concern only for lines of 345 kV and above. Condition of Certification **TLSN-2** ensures mitigation of any interference-related complaints on a case-specific basis. Condition **TLSN-1** ensures compliance with California Public Utilities Commission General Order 52 (CPUC GO-52), also intended to prevent radio interference. (Ex. 7, pp. 134-135, 140-141.)

d. Audible Noise

As with radio noise, any audible noise from a transmission line usually results from the action of the electric field at the surface of the line conductor and could be perceived as a characteristic crackling, frying or hissing sound, or hum. Such noise is usually generated during wet weather and from lines of 345 kV or higher. As with radio noise, the low-corona conductor proposed for the MEC line will minimize the potential for audible noise. The evidence of record is uncontroverted in establishing that the project's line will not produce significant levels of noise, nor add significantly to existing background noise levels in the area. (Ex. 7, pp. 135, 141.)[26]

e. Fire Hazards

Fires could be caused by sparks from conductors of overhead lines, or could result from direct contact between the line and nearby trees and other

[26] For an assessment of the noise from all phases of the proposed power plant and related facilities, please refer to the **Noise** section in this Decision.

combustible objects. Adequate fire prevention and suppression measures in the area around the proposed line is required by related regulations and industry practices. Compliance with CPUC GO-95 requirements will ensure the clearance necessary to prevent fires from direct contact between the proposed line, trees, and other objects. Condition of Certification **TLSN-4** will prevent accumulation of combustible materials that could contribute to such fires. (Ex. 7, p 141.)

f. Nuisance and Hazardous Shocks

Nuisance shocks around transmission lines are non-hazardous but unpleasant experiences caused by current flow at levels generally incapable of causing significant physiological harm. Such shocks mostly result 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's electric and magnetic fields. For modern high-voltage lines, shocks of this type are effectively minimized through grounding procedures specified in the National Electrical Safety Code and the joint guidelines of the American National Standards Institute (ANSI) and the Institute of Electrical and Electronics Engineers (IEEE). (Ex. 7, pp. 135-136.)

The potential for nuisance shocks will be minimized by ensuring the grounding of all metallic objects within or near the right-of-way, as well as the line to which it will be connected. Compliance with CPUC GO-95's required ground clearance will minimize the potential for electrical charging. (Ex. 7, pp. 135-136, 141.) Condition of Certification **TLSN-5** ensures the necessary grounding.

Hazardous shocks could result from direct or indirect contact between an individual and the energized line. Such shocks are capable of serious physiological harm or death, and remain a driving force in the design and operation of transmission and other high-voltage lines. Compliance with the requirements of CPUC GO-95 will prevent hazardous shocks from direct or indirect human contact with the overhead energized line. Therefore, the MEC line

is not expected to pose any hazardous shock threats to humans. Condition of Certification **TLSN-1** ensures the implementation of the necessary GO-95 related measures. (Ex. 7, pp. 136, 141.)

Applicant agreed to implement all Conditions of Certification pertinent to this topic (Ex. 6A, p. 19), and stipulated with Staff to the evidence on this topic. Intervenor Garbett, on behalf of "T.H.E. P.U.B.L.I.C.," commented that the tie-line should be undergrounded in order to minimize EMF effects and hazards to birds. (1/8/01 RT 267-269.) The Intervenor did not, however, offer any evidence to support the necessity for this measure and other evidence indicates this proposal is undesirable. (3/12/01 RT 28-29.). Based upon the available evidence, we can only conclude that these concerns are speculative, and that the suggested undergrounding is unnecessary.

FINDINGS AND CONCLUSIONS

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

1. Audible noise from the transmission tie-line will be minimal, and will not significantly add to existing background noise levels.

2. The electric and the magnetic field strengths created by the project's transmission tie-line will likely be below field levels associated with similar lines in the PG&E area.

3. The principal human exposure to electric and magnetic fields from the project's transmission line will be transitory and short-term in nature.

4. There are no applicable standards governing levels of electric or magnetic fields. The evidence establishes, however, that exposure to electric and magnetic fields as a result of the project is not likely to create adverse human health effects.

5. The potential for nuisance shocks from the transmission line will be minimized through grounding and other measures to be implemented by the project owner in compliance with applicable law.

6. The line will be located away from all area airports, and any hazard to area aviation will be minimal.

7. The use of low-corona conductors together with an appropriate line maintenance program will minimize the potential for interference with radio-frequency communication.

8. The Conditions of Certification set forth below are sufficient to ensure that no significant adverse impacts will result from operation of the project's transmission tie-line.

The Commission, therefore, concludes that with implementation of the Conditions of Certification, the project will conform with all applicable laws, ordinances, regulations, and standards relating to transmission line safety and nuisance as identified in the pertinent portion of APPENDIX A of this Decision. The Conditions of Certification reasonably ensure that the transmission line will not have significant adverse environmental impacts on public health and safety, nor cause significant impacts in the areas of aviation safety, radio-television communication interference, audible noise, fire hazards, nuisance or hazardous shocks, or result in exposure to excessive levels of electric and magnetic fields.

CONDITIONS OF CERTIFICATION

TLSN-1 The project owner shall construct the proposed transmission line according to the requirements of GO-95, GO-52, Title 8, Group 2, High Voltage Electrical Safety Orders Section 2700 through 2974 of the California Code of Regulations, and PG&E's EMF-reduction measures arising from CPUC Decision 93-11-013.

Verification: Thirty (30) days before start of transmission line construction, the project owner shall submit to the Commission's Compliance Project Manager (CPM) a letter signed by a California registered electrical engineer affirming that the transmission line will be constructed according the requirements of GO-95, Title 8, Section 2700 et seq. of the California Code of Regulations and PG&E's EMF reduction measures arising from CPUC Decision 93-11-013.

TLSN-2 The project owner shall make every reasonable effort to identify and correct, on a case-specific basis, any complaints of interference with radio or

television signals from operation of the line and related facilities. In addition to any transmission repairs, the relevant corrective actions shall include, but not be limited to, adjusting or modifying receivers, repairing, replacing or adding antennas, signal amplifiers, filters, or lead-in cables.

The project owner shall maintain written records, for a period of five (5) years, of all complaints of radio or television interference attributable to operation together with the corrective action taken in response to each complaint. All complaints shall be recorded to include notations on the corrective action taken. Complaints not leading to a specific action, or for which there was no resolution, should be noted and explained. The record shall be signed by the project owner and also the complainant, if possible, to indicate concurrence with the corrective action or agreement, with the justification for a lack of action. The complaint form specified under the General Conditions of Certification shall be used for this purpose.

Verification: All reports of line-related complaints shall be summarized and included for five (5) years in the Annual Compliance Report to the CPM.

TLSN-3 The project owner shall engage a qualified consultant to measure the strengths of the line electric and magnetic fields in the project owner's 240-foot section before and after the 230 kV line is energized. Measurements should be made at the same point for which field strength values were presented by Calpine/Bechtel in the AFC. Measurements shall also be made to identify the electric and magnetic fields from the line in the area along the route away from the influence of fields from the other five lines within the existing PG&E corridor. The areas to be measured shall include the facility switchyard.

Verification: The project owner shall file copies of the pre-and post-energization measurements with the CPM within sixty (60) days after completion of the measurements. These measurements shall be completed within six (6) months of the start of operations.

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

Verification: The project owner shall provide a summary of inspection results and any fire prevention activities carried out along the right-of-way, for five (5) years, in the annual compliance report.

TLSN-5 The project owner shall ensure the grounding of any ungrounded permanent metallic objects within the right-of-way of the overhead section, regardless of ownership. Such objects shall include fences, gates, and other large objects. These objects shall be grounded according to procedures specified in the National Electrical Safety Code.

Protocol: In the event of a refusal by any property owner to permit such grounding, the project owner shall so notify the CPM. Such notification shall include, when possible, the owner's written objection. Upon receipt of such notice, the CPM may waive the requirement for grounding the object involved.

Verification: At least thirty (30) days before the line is energized, the project owner shall transmit to the CPM a letter confirming compliance with this condition.

IV. PUBLIC HEALTH AND SAFETY ASSESSMENT

Operation of the Metcalf Energy Center 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 summarize 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 examine whether the project complies with applicable laws, ordinances, regulations, and standards related to air quality. National ambient air quality standards (NAAQS) have been established for six air contaminants identified as "criteria air pollutants." These include sulfur dioxide (SO_2), carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), lead (Pb), and particulate matter less than 10 microns in diameter (PM_{10}). Also included in this review are the precursor pollutants for ozone, which are nitrogen oxides (NOx) and volatile organic compounds (VOC), and the precursors for PM_{10}, which are NOx, VOC, and sulfates (SOx).

The federal Clean Air Act[27] 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 quality better than the NAAQS) or non-attainment (worse than the NAAQS) for criteria air pollutants. 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.

Both USEPA and the California Air Resources Board (CARB) have established allowable maximum ambient concentrations for the six criteria pollutants listed 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 (O_3)	1 Hour	0.12 ppm (235 $\mu g/m^3$)	0.09 ppm (180 $\mu g/m^3$)
Carbon Monoxide (CO)	8 Hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
	1 Hour	35 ppm (40 mg/m^3)	20 ppm (23 mg/m^3)
Nitrogen Dioxide (NO_2)	Annual Average	0.053 ppm (100 $\mu g/m^3$)	---
	1 Hour	---	0.25 ppm (470 $\mu g/m^3$)
Sulfur Dioxide (SO_2)	Annual Average	80 $\mu g/m^3$ (0.03 ppm)	---
	24 Hour	365 $\mu g/m^3$ (0.14 ppm)	0.04 ppm (105 $\mu g/m^3$)
	3 Hour	1300 $\mu g/m^3$ (0.5 ppm)	---
	1 Hour	---	0.25 ppm (655 $\mu g/m^3$)
Respirable Particulate Matter (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 $\mu g/m^3$)
Visibility Reducing Particulates	1 Observation	---	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent.

Source: Ex. 7, p. 4

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

SUMMARY AND DISCUSSION OF THE EVIDENCE

The project site is located within the Bay Area Air Quality Management District (BAAQMD), which is designated attainment for the state's CO, NO_2, SO_2, SO_4, and lead standards and the federal SO_2 standard, and unclassified/attainment for the federal PM_{10} and CO standards. The BAAQMD is non-attainment for the federal and state 1-hour ozone standards and the state PM_{10} standard. (Ex. 7, pp. 29, 31, 34.)

The EPA and BAAQMD worked in conjunction with Commission staff to determine whether the project's emissions would cause significant air quality impacts and to identify appropriate mitigation measures to reduce potential impacts to levels of insignificance.

1. BAAQMD's Final Determination of Compliance

On August 24, 2000, BAAQMD released its Final Determination of Compliance (FDOC). The FDOC concludes that the MEC will comply with all applicable air quality requirements, and imposes certain conditions necessary to ensure compliance.[28] (Ex. 141.) Pursuant to Commission regulations, the conditions contained in the FDOC are incorporated into this Decision. (20 Cal. Code of Regs., §§ 1744.5, 1752.3.) BAAQMD witness testified that the project would comply with BAAQMD's requirements and with state and federal regulations. (3/1/01 RT 71-74, 105.) Applicant has filed an application for an Authority to Construct permit. Following a Final Biological Opinion from the U.S. EPA (March 13, 2001), the BAAQMD issued its Prevention of Significant Deterioration (PSD)

[28] 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 BAAQMD the authority to implement the federal PSD, nonattainment NSR, and Title V programs. BAAQMD adopted regulations, approved by USEPA, to implement these programs. The MEC is subject to BAAQMD rules and regulations that define requirements for Best Available Control Technology (BACT), offsets, and emission calculation procedures.

Permit on May 4, 2001, incorporating the FDOC and the Biological Opinion Addendum. We take official notice of the PSD permit.

2. CEQA Guidance

The Commission not only reviews compliance with BAAQMD rules, but also evaluates potential air quality impacts pursuant to CEQA's guidance. The Guidelines require analysis 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. (14 Cal. Code of Regs., § 15000 et seq., Appendix G.)

The following discussion provides an overview of air quality in the Bay Area and summarizes the pertinent evidence.

3. Existing Ambient Air Quality

Both the EPA and the CARB have established NAAQS and CAAQS specifying permissible levels for all criteria pollutants. These levels are designed to protect the most sensitive members of the population such as children, elderly, and people with lung or heart diseases. In general, when NAAQS are exceeded more than once a year for one of the criteria pollutants, the area will be designated as nonattainment for that pollutant. For example, the Bay Area air quality basin is classified as nonattainment for ozone. Therefore, the BAAQMD will be obligated in its Air Quality Management Plan to adopt and enforce more stringent control requirements to reduce ozone in the air basin. (Ex. 7, p. 29.)

AIR QUALITY Table 2 summarizes the ambient monitoring data recorded at the San Jose-4th Street monitoring station for ozone, PM_{10}, $NO_{2,}$ and CO from 1993 to 1998. This Table provides the concentration of each pollutant, the averaging time over which the concentration is measured, and the number of days annually which the CAAQS or NAAQS is violated.[29]

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[29] In 1998 the EPA reclassified the Bay Area as nonattainment for ozone based on violations of the federal standards at several locations in the air basin.

AIR QUALITY Table 2

San Jose - 4TH St Ambient Air Quality Monitoring Data

Pollutant		**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**Most Restrictive Ambient Air Quality Standard**
Ozone	Highest 1-hr	0.11	0.11	0.13	0.11	0.094	0.15	0.09(CAAQS) 0.12(NAAQS)
	# of days with violations of CAAQS	3	2	14	5	0	4	---
PM_{10}	Highest 24-hr conc. ($\mu g/m^3$)	92	92.6	59.7	76.1	78	92	150(NAAQS)
	# of days with violations of CAAQS	8	7	4	2	3	3	---
	Highest annual conc. ($\mu g/m^3$)	NA	NA	21.91	22.08	23.73	22.48	30 (CAAQS)
NO_2	Highest 1-hr conc. (ppm)	0.12	0.107	0.116	0.108	0.108	0.083	0.25 (CAAQS)
	Highest Annual conc. ($\mu g/m^3$)	0.027	0.028	0.027	0.025	0.025	0.025	0.053 (CAAQS)
CO	Highest 1-hr conc. (ppm)	14	12	8.9	8.8	9.9	8.6	20.0 (CAAQS)
	Highest 8-hr conc. (ppm)	6.88	8.75	5.84	7	6.11	6.27	9.0 (CAAQS)
SO_2	Highest 1-hr conc. (ppm)	NA	NA	NA	NA	NA	NA	0.05 (CAAQS)
	Annual Avg. (ppm)	NA	NA	NA	NA	NA	NA	0.003

NA: Data are Not Available.
Source: Exhibit 7, p. 31.

Ozone (O3). In the presence of ultraviolet radiation, both NOx and VOC go through a number of complex chemical reactions to form ozone. AIR QUALITY Table 3 summarizes the best representative ambient air quality data collected from three different monitoring stations close to the project site. The Table shows that, generally, the ozone formation is high in summer and low in winter. The San Francisco air basin is classified as a nonattainment area for ozone because it violates CAAQS and, as discussed above, the NAAQS. Table 3 also shows the maximum hourly concentration and the number of days above the state standards.

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AIR QUALITY Table 3
Ozone Air Quality Summary, 1991-1996

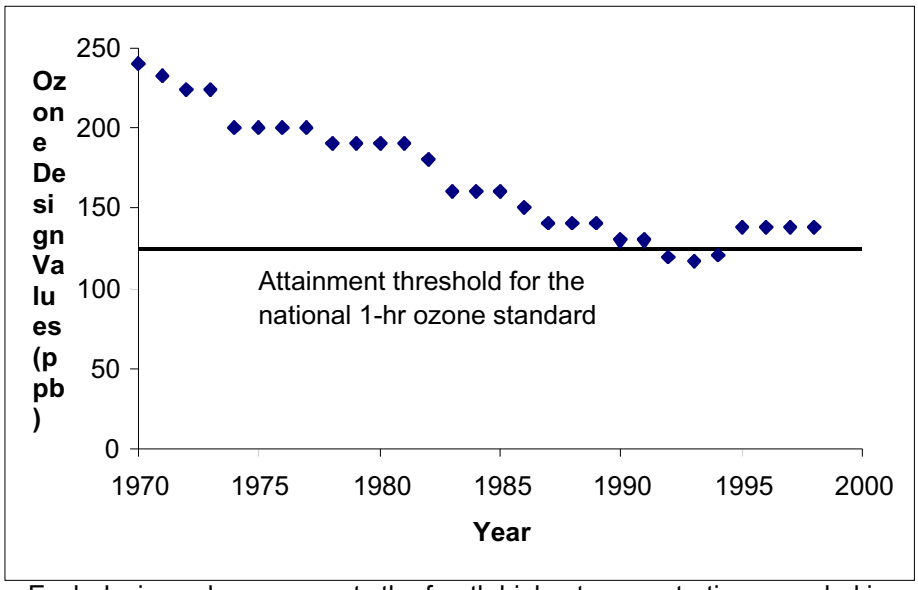
Year	4th Street			Piedmont Street			W San Carlos		
	Max. 1-hr Avg. (ppm)	Days Above State Stand.	Month Violations occurred	Max. 1-hr Avg. (ppm)	Days Above State Stand.	Month Violations occurred	Max 1-hr Avg. (ppm)	Days Above State Stand.	Month Violation occurred
1991	0.1	6	Jl,S,O	NA	NA	NA	0.08	0	0
1992	0.12	3	Jl,S	0.13	5	S,O	0.11	1	S
1993	0.11	3	Ju,Jl,S	0.11	5	Ju,Jl,Au, S	0.13	4	Ju,Jl,Au, S
1994	0.11	2	Ju,Au	0.12	3	Ju,Au,S	0.1098	1	Au
1995	0.13	14	Ju,Jl,Au	0.15	15	Ju,Jl,Au, S	0.047	0	0
1996	0.11	5	Ap,My,Ju ,S0.12	0.12	5	My,Ju,Jl	NA	NA	NA
1997	00.94	0	0	0.095	1	S	NA	NA	NA
1998	0.15	4	Jl,Au,S	0.13	5	Jl,Au,S	NA	NA	NA

California Ambient Air Quality Standard: 0.09 ppm
National Ambient Air Quality Standard: 0.12 ppm
Month abbreviations: J-January, F-February, M-March, Ap-April, My-May, Ju-June, Jl-July, Au-August, S-September, O-October, N-November, D-December
NA: Data are Not Available at this Station.
Source: Exhibit 7, p. 32

Ozone formation is influenced significantly by year-to-year changes in atmospheric conditions. For this reason, a long-term trend in ambient ozone levels is needed to understand if a region is experiencing reductions in its ambient ozone concentrations or not. As shown in AIR QUALITY Figure 1, the long-term statistics of ozone levels in the San Francisco Bay Area region show that this region has made significant strides toward attainment of the federal ozone 1-hour standard.[30]

[30] The reasons for the recent violations of the federal ozone standard are not known. However, one important characteristic of the last few years is that more exceedences have been observed during weekends, when NOx emissions are expected to go down by 30 percent, while VOC emissions would only be reduced by 10 percent from the emission levels expected during weekdays (SCAQMD 1997). The "weekend effect", modeling analyses, and other corroborative analyses suggest that the air basin may be VOC limited. That means by limiting the VOC emissions in the air basin, the formation of ozone will be lower. The BAAQMD has conducted modeling analysis and confirmed the need of reducing VOC emissions. This means that any

AIR QUALITY Figure 1
District Ozone Design Value 1970-1998



Each design value represents the fourth highest concentration recorded in the air basin during the previous three years. Design values are used to determine attainment status. Source: Ex. 7, p. 33.

Carbon Monoxide (CO). As AIR QUALITY Table 2 shows, the highest one-hour and eight-hour concentrations are significantly less than CAAQS.[31] There has been no violation of CAAQS or NAAQS since 1992 for the one-hour or the eight-hour standards in the San Jose area. (Ex. 7, p. 33.)

The highest concentrations of CO occur when low wind speeds and a stable atmosphere trap the pollution emitted at or near ground level in what is known as the stable boundary layer. These conditions occur frequently in the winter late in the afternoon, persist during the night, and may extend one or two hours after sunrise. Since the mobile sector (cars, trucks, busses) is the main source of CO,

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reductions in NOx emissions may be counterproductive unless accompanied by reductions in VOC emissions. (Ex. 7, p. 32.)

[31] CO emissions are a local pollutant found near the source of emission with high concentrations. CO emissions are predominately generated as a result of the internal combustion process. Automobiles and mobile sources are the principal source of CO emissions. CO emissions can also be generated from fireplaces and wood-burning stoves. Industrial sources contribute less than 10 percent of the ambient CO levels in the Bay Area.

ambient concentrations of CO appear highly dependent on emissions from this sector. In fact, the peak CO concentrations occur during rush-hour traffic in the morning and afternoon.[32] (Ex. 7, p. 33.)

Nitrogen Dioxide (NO_2). The highest one-hour and annual concentrations in the San Jose area are significantly less than CAAQS. Approximately 90 percent of the NOx emitted from combustion sources is NO, while 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. The highest concentrations of NO_2 occur during the fall and not in the winter when atmospheric conditions favor the trapping of ground level releases, but lack significant photochemical activity (less sun light). In the summer the conversion rates of NO to NO_2 are high, but the relatively high temperatures and windy conditions disperse pollutants, preventing the accumulation of NO_2 to levels approaching the 1-hour ambient air quality standard.[33] (Ex. 7, p. 34.)

PARTICULATE MATTER (PM). The project area annually experiences a number of violations of the state 24-hour PM_{10} standard. These violations occur predominately between the months of August and February, with the highest number of violations occurring from October through February.[34] Concentrations are shown on AIR QUALITY Table 4.

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[32] Carbon monoxide concentrations in San Jose and the rest of the state have declined significantly due to two state-wide programs: 1) the 1992 wintertime oxygenated gasoline program; and 2) Phases I and II of the reformulated gasoline program. New vehicles with oxygen sensors and fuel injection systems have also contributed to the decline in CO levels in the state. Today, all the counties in California, with the sole exception of Los Angeles County, are in compliance with the CO ambient air quality standards.

[33] In urban areas, ozone concentration level is typically high. That level will drop substantially at night as the above reaction takes place between ozone and NO. This reaction explains why, in urban areas, ozone concentrations at ground level drop, while aloft and in rural areas (without sources of fresh NOx emissions) ozone concentrations can remain relatively high.

[34] The highest PM_{10} concentrations are measured in the winter. During wintertime, the contribution of ground level releases to ambient PM_{10} concentrations is disproportionately high. For example, wood smoke contributes approximately 47 percent of the PM_{10} mass in San Jose, while the contribution at Pittsburg may be on the order of 30 percent. (Ex. 7, p. 36.)

PM_{10} can be emitted directly or it can be formed many miles downwind from emission sources when various precursor pollutants interact in the atmosphere. Gaseous emissions of pollutants like NOx, SOx, and VOC from turbines, and ammonia from NOx control equipment can, given the right meteorological conditions, form particulate matter known as nitrates (NO_3), sulfates (SO_4), and organics. These pollutants are known as secondary particulates because they are not directly emitted, but are formed through complex chemical reactions in the atmosphere.

Although the Bay Area air basin is in attainment for the federal PM_{10} standard, it is nonattainment for the state standard. (3/1/01 RT 53-55; Ex. 7, pp. 50-51.) BAAQMD does not require offsets for state PM_{10} violations. Staff, however, is proposing additional PM_{10} mitigation.

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AIR QUALITY Table 4
PM10 Air Quality Summary, 1991-1998
Maximum 24-hour Average Concentration (µg/m3)

Year	4th Street			Moorpark			Piedont St.			Tully Road			W. San Carlos		
	Max 24-hr Avg. (ppm)	Days Above State Standard	Months Violations occurred	Max 24-hr State Standard	Days Above State Standard	Months Violations occurred	Max 24-hr State Standard	Days Above State Standard	Months Violations occurred	Max 24-hr State Standard	Days Above State Standard	Months Violations occurred	Max 24-hr State Standard	Days Above State Standard	Months Violations occurred
1991	153	26	J,F,O,N,D	120	13	J,O,N,D,	NA	NA	NA	111	11	J,O,N,D	111	14	J,O,N,D
1992	106	13	J,Au,S,O, N,D	104	8	J,N,D	NA	NA	NA	110	11	J,F,JI,O,N, D	112	9	J,Au,N,D
1993	92	8	J,M,N,D	76	3	N,D	NA	NA	NA	101	7	J,N,D	93	5	M,N,D
1994	92.6	7	J,F,D	66.6	4	J,F,D	NA	NA	NA	90.2	7	J,F,N,D	79.5	6	J,F,D
1995	59.7	4	F,O,N	54.5	1	O	57.4	1	O	48.6	0	0	45.8	0	0
1996	76.1	2	F,N	58.4	1	N	58.7	2	F,N	66.8	1	N	NA	NA	NA
1997	78	3		60.7	3	J,D	55.3	1	J	95	3	J,D	NA	NA	NA
1998	92	3	Ap,O,D	42.5	0	0	54.4	1	Ap	88.5	1	D	NA	NA	NA

California Ambient Air Quality Standard: 50 $\mu g/m^3$ (24-hour average)
National Ambient Air Quality Standard: 150 $\mu g/m^3$ (24-hour average)
Month abbreviations: J-January, F-February, M-March, Ap-April, My-May, Ju-June, Jl-July, Au-August, S-September, O-October, N-November, D-December
NA: Data are Not Available at this Station.
Source: Ex. 7, p. 35

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Other Air Pollutants There are also ambient air quality standards for sulfates and lead. A full description of the measured ambient air concentrations in the San Jose area is contained in Exhibit 1, section 8.1.3.5 and 8.1.3.7. The ambient concentrations of these pollutants are well below their respective standards.

4. Modeling

Applicant used the SCREEN model to select the turbine configuration that would produce the highest (worst-case) emission impacts. This model, which is approved by the US EPA, is designed to provide conservative estimates of emission impacts. Based on the results of the SCREEN model, Applicant also modeled the Westinghouse gas turbines and HRSG configuration, including the duct burners, using a more refined modeling analysis. This modeling analysis was done with the US EPA approved Industrial Source Complex model (ISCST3), and used nearby meteorological data collected at the IBM station in 1993.

The Cities of San Jose and Morgan Hill, as well as STCAG, assert that the dispersion model presented by Applicant and used by the BAAQMD and Commission staff in their air quality analyses does not adequately represent conditions at the site. Intervenor witnesses from the Naval Postgraduate School in Monterey, all qualified as experts in meteorology, testified that the atmospheric conditions in the vicinity of the proposed project, including low mixing height, were not properly accounted for in the model used. (3/01/01 RT 145-165; Ex. 139.) The asserted inadequacy of the model is that it does not capture the potentiality that, in the project's valley setting, pollutants will accumulate below an inversion layer. In the opinion of these witnesses, the project is located in a "bowl" bounded by hills which will accumulate or recirculate more and more pollutants during days when there is an inversion layer at or below the hilltops.

(City of San Jose Opening Brief on Group 3 Topics (April 12, 2001), pp. 6-8; STCAG Brief on Group 3 Topics (April 12, 2001), pp. 7-14.)

Upon cross-examination, Applicant's air quality witness acknowledged that traditional air regulatory models, such as the ISCST3 model, do not evaluate the accumulation of pollutants and are therefore limited in that sense. (2/28/01 RT 180.) On that basis, Intervenors assert that the air dispersion modeling is useless and the resultant air quality analysis flawed.

Applicant responds that, notwithstanding the Intervenors' extensive discussion about accumulation and recirculation of pollutants under low inversion layers, the worst-case analysis arises from a different meteorological condition, namely "downwash".[35] (2/28/01 RT 34-38; Ex. 138, pp. 5-6.)

The Morgan Hill witnesses did not model air emissions impacts (3/01/01 RT 169-171, 187), nor establish that the modeling used was inappropriate for its intended purpose. The air dispersion ISCST3 model used by Applicant, BAAQMD, and Staff is a US EPA-and CARB-approved air dispersion model. The purpose of this screening level modeling analysis is to estimate the highest theoretical level of project impacts using inputs that will over-predict the potential impacts. (2/28/01 RT 22, 33-38; 3/1/01 RT 342.) Where this worst-case number exceeds federal significance criteria for any pollutant, it is then added to worst-case ambient background pollutant levels to determine whether there is a violation of the standards for criteria pollutants. Such modeling is overpredictive of impacts. (3/01/01 RT 76-77, 208.) Mixing height is essentially irrelevant to this exercise, since "downwash" represents the worst-case impact.[36] (3/01/01 RT 78-80, 210-211, 353-356, 369.)

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[35] Downwash is a condition wherein the stack exhaust is blown quickly down to ground level.

[36] The extreme low mixing height advocated by Morgan Hill closely resembles the "fumigation" meteorological condition. (2/28/01 RT 172.) This condition was also modeled, and the results indicated impacts at least an order of magnitude lower than for the downwash condition. (3/01/01 RT 354-355.)

The Commission, BAAQMD, and other air districts have experience using this model in settings which share the "bowl-type" topography which tends to trap and recirculate pollutants. In these cases, as with the MEC, the dispersion models show that downwash, not recirculation under an inversion layer, is the worst-case for air quality impacts. The low inversion layer with "trapped" pollution does not reflect maximum potential project impacts because the velocity and thermal lift of the stack exhaust cause it to “punch” through the inversion layer rather than mixing with the "trapped" pollution. The evidence convinces us that the model approved by the regulatory agencies is appropriate for its intended use, and has adequately encompassed worst-case conditions.

Finally, the evidence establishes that the air quality analyses used the best available meteorological data, specifically that from the IBM site on Cottle Road in San Jose. This data included temperature, wind speed, and wind directions, and BAAQMD determined the data were representative of meteorological conditions at the MEC site and met USEPA criteria. (Ex. 1, pp. 8.1-1, 8.1-26.)

5. CONSTRUCTION IMPACTS

Modeling results indicate that temporary construction-related emissions under worst-case conditions would cause violations of the one hour NO_2 standard and the 24-hour and annual PM_{10} standards. These are depicted on Table 5, below.

AIR QUALITY Table 5
Maximum Estimated Construction-Related Incremental Impacts

Pollutant	Averaging Time	Incremental Impacts ($\mu g/m^3$)	Maximum Background ($\mu g/m^3$)[1]	Maximum Total Impacts ($\mu g/m^3$)	State Limiting Standard ($\mu g/m^3$)	Federal Limiting Standard ($\mu g/m^3$)	Percent Of Standard (%)
No_2[2]	1-hour	353	245	598	470		127.2
	Annual	34	51	85	-	100	85
PM_{10}	24-hour	157	114.4	271.4	50	150	543
	Annual	28.6	25.9	54.5	30	-	181.6
CO	1-hour	616	11,500	12,116	23,000	40,000	52.7
	8-hour	607	8,167	8,716	10,000	10,000	87.2
SO_2	1-hour	66	107	173	650	-	26.6
	24-hour	7.6	24	32	109	365	29
	Annual	1.3	0	1.3	-	80	1.6

[1]Based on maximum daily emissions during month 15 of construction period.
[2] Ozone limiting method applied to the 1-hour average using the maximum background 03 and NO_2 levels in the last three years.

Source: Exhibit 7, p. 42.

These emission levels are likely overstated, because of the modeling convention used. Some of the sources of combustion emissions (the bulldozers and trucks) are mobile sources, not stationary sources as input into the model. Therefore, as mobile sources, the air quality impacts would not always be at the same locations. Moreover, it was assumed for modeling purposes that all the equipment identified would be running simultaneously. It is doubtful that all the major equipment (4 large bulldozers, 4 backhoes, 12 cranes, and 5 large flatbed trucks) would all be operating at the same time.

The modeling assumptions reflect the highest monthly emissions assumed during the construction period. These assumptions reflect a period of activity of approximately one year, not the entire 18-24 month period. During the other months of construction, equipment that generate considerably fewer emissions will be used and thus the actual emissions will be lower than modeled. (Ex. 7, p. 43.)

The analysis also assumes that all the NOx emitted from the vehicles is in the form of NO_2. In reality, approximately 90 percent of NOx emissions from a combustion source are in the form of nitrogen oxide (NO), and eventually that NO would oxidize to NO_2. In addition, the maximum fugitive dust PM_{10} emission levels and impacts would not occur during the winter, when the highest measured PM concentrations are historically measured in the Bay Area air basin. This is due to the fact that the ground tends to be wet during the winter because of the rains, and the relative humidity is high; these factors reduce the likelihood and amount of fugitive dust formation.

Applicant will use a number of mitigation measures to control the exhaust emissions from the diesel fueled equipment and to control fugitive dust emissions during the construction phase. Measures such as installing sandbags to prevent silt runoff to roadways, covering all trucks hauling any loose material, using chemical dust suppressant to control dust, and other measures are appropriate. (Ex. 1, section 8.1E.2.) In addition, Conditions of Certification **AQ-48, 49, 50** and **52** ensure that all construction emissions are fully mitigated. (Ex. 7, p. 43.)

6. Operational Impacts

The evidence of record assesses the operational impacts of the facility using US EPA-approved air quality dispersion models and guidelines without considering the offsets that will be provided. (Ex. 1, Appendix 8.1B.) Staff, CARB, and BAAQMD concluded that the Applicant's analysis of the operational impacts was acceptable. These analyses were used to determine the worst-case ground level impacts of the facility. The results show that the facility, by itself, does not violate the state or federal ambient air quality standards for all pollutants. The results are shown on Table 6.

AIR QUALITY Table 6
ISC Modeling Results

Pollutant	Averaging Time	Facility Maximum Impact ($\mu g/m^3$)	Maximum Background ($\mu g/m^3$)	Maximum Total Impacts ($\mu g/m^3$)	State Limiting Standard ($\mu g/m^3$)	Federal Limiting Standard ($\mu g/m^3$)	Percent of Standard (%)
NO_2	1-hour	188	245	433	470		92.1
	Annual	0.67	51	51.7	-	100	51.7
CO	1-hour	650.3	11500	12150	23000	40000	53
	8-hour	549	8167	8716	10000	10000	87.1
PM10	24-hour	9.3	114.4	123.7	50	150	247.4
	Annual	1.1	25.9	27.0	30	-	90
SO_2	1-hour	33.4	107	140.4	650	-	21.6
	24-hour	0.6	24	24.6	109	365	22.6
	Annual	0.06	0	0.1	-	80	0

Source: Ex. 7, p. 44.

The PM_{10} emissions from the facility, when added to the existing background levels which are already above the state 24-hour standard, could on occasion contribute to further violations of that standard. Though not required by BAAQMD regulations, Applicant will provide offsets of regional PM_{10} emissions. In Staff's opinion, this will reduce the operational impacts of PM_{10} emissions to less than significant levels. (Ex. 7, p. 48.)

7. Cumulative Impacts

In analyzing the potential cumulative impact, the modeling evidence includes the following projects: the full build-out of the Coyote Valley Research Park (CVRP) to around 20,000 employees; and the proposed Coyote Urban Reserve Development (CURD) of up to 25,000 dwellings on 170 acres. Dispersion modeling was used to evaluate the ambient impacts of the three projects using the same meteorological data collected from the IBM facility during 1993. Emissions from on-site vehicles and stationary sources (internal combustion diesel engines used as emergency units) at CVRP, mobile emissions from CURD, and emissions from vehicles on Highway 101 were modeled to calculate the cumulative impact. The results are summarized in AIR QUALITY Table 7.

AIR QUALITY Table 7
Maximum Cumulative Impacts

Pollutant	Averaging Time	Impact ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total Impact ($\mu g/m^3$)	Limiting Standard ($\mu g/m^3$)	Percent of Standard (%)
NO2	1-hour	277.8	245	522.8	470	111.2
	Annual	25.5	51	76.5	100	76.5
CO	1-hour	2268.9	11500	13768.9	23,000	60
	8-hour	1108	8167	9275	10,000	92.75
PM10	24-hour	67.7	114.4	182.1	50	364.2
	Annual	25	25.9	50.9	30	169.7

Source: Ex. 7, p. 45.

As Table 7 shows, the one-hour NO_2 emissions maximum impact, the 24-hour and annual PM_{10} maximum impacts exceed the limiting standards. The Table also shows that the ambient PM_{10} background is much higher than the limiting standards.

If CVRP or CURD are developed as planned, the overall cumulative impact with the MEC may contribute to exceedances of the state standards for NO_2 and PM_{10}. However, the MEC project will provide complete offsets that equal or exceed its contribution to any potential air quality exceedance. Having provided its "fair share" of the mitigation to avoid a cumulative impact leads us to conclude that the impact of the MEC is less than cumulatively considerable, and thus not significant.

8. Mitigation

Applicant proposes to mitigate potential air quality impacts by using state-of-the art combustion technology, installing post-combustion control devices, and providing offsets as required by the BAAQMD's regulations.

Best Available Control Techinilogy (BACT). BACT is the emission limitation applicable to individual projects and is typically determined by the local air district with input from CARB and US EPA. Recently, the US EPA indicated that BACT/LAER (Lowest Achievable Emission Rate) analyses for combined-cycle

gas-turbine power plant projects must include consideration of technologies such as SCONOx and XONON to achieve lower NOx and CO limits without the use of ammonia or an oxidation catalyst. The BAAQMD performed these analysis in its FDOC. (Ex. 141; pp. 10-12.)

BAAQMD's estimation, while neither of these technologies can be eliminated as viable control alternatives, the Applicant's proposed use of Selective Catalytic Reduction (SCR) to meet the NOx BACT/LAER requirement is nevertheless acceptable. (Ex. 141, p. 12.) Furthermore, BAAQMD concluded that SCONOx is a technically infeasible control alternative for CO. (Ex. 141, p. 14.) No evidence of record establishes otherwise.

NOX EMISSIONS. The project's NOx emissions consist primarily of NO and a small percentage of NO_2. Thermal NOx is the product of the oxidation of N_2 (present in the air used for combustion) at the temperatures present in the combustion process. Some NOx is formed from the oxidation of nitrogen present in the fuel. Nitrogen is not present in significant quantities in natural gas, so most of the NOx emissions from this project are due to thermal NOx.

ThermalNOx can be controlled by reducing the flame temperature in the combustion chamber through quenching steam and dilution using water and steam injection. Additionally, thermal NOx can be controlled with combustor designs that premix the air and fuel and stage the combustion process (a reducing atmosphere followed by an oxidizing atmosphere). NOx emissions from the MEC will be controlled through the use of dry low-NOx combustors and the use of SCR as a post-combustion emission control. The turbines will be equipped with a number of dry low-NOx combustors to ensure optimal uniform temperature distribution in the primary air zone. A reduction in NOx emissions is also achieved by raising the mean air/fuel ratio.

In addition, the MEC's SCR system[37] will control NOx emission levels to 2.5 ppmvd @ 15 percent O_2, averaged over one hour. (Ex. 7, p. 46; Ex. 141, p. 12.) This meets the applicable BACT/LAER requirements.

CO AND VOC. Gas turbines inherently generate low CO and VOC emissions when burning natural gas. However, while high combustion temperatures, fuel/air mixing, and the excess air inherent in the CTG's combustion process favor complete combustion of fossil fuels, these conditions also lead to higher NOx emissions. Current gas turbine designs attempt to achieve low NOx emissions (from the gas turbine prior to post-combustion controls) while keeping CO and VOC emissions low.

BAAQMD has specified BACT for CO as 10 ppmvd @ 15 percent O_2, averaged over three hours. (Ex. 141, p. 14.) The MEC, however, proposes to meet a CO limit of 6 ppm over a three-hour averaging time during all operating scenarios or equivalent in mass emissions. (Ex. 7, p. 47; Ex. 141, p. 14.)

BAAQMD's BACT determination guidelines for VOC identify an "oxidation catalyst" as the "typical technology" used to minimize emissions, with 50 percent reduction by weight in VOC emissions.[38] As is discussed in the **Public Health** portion of this Decision, we believe an oxidation catalyst is desirable to further reduce VOC emissions. (See, Condition **AQ-55**.)

PM_{10}. PM_{10} will be controlled by inlet air filtering for the gas turbines and HRSG units. In addition, Applicant will use a cooling tower that includes

[37] SCR is a process that chemically reduces NOx by injecting ammonia (NH_3) over a catalyst in the presence of oxygen (O_2). The process is termed selective because the NH_3 reducing agent preferentially reacts with NOx rather than O_2 to form N_2 in the presence of excess O_2 at temperatures in the range of 400 to 750ºF. The District has determined that associated ammonia emissions are insignificant. (Ex. 141, pp. 11-12.)

[38] Applicant believes a CO catalyst could increase the project PM_{10} emissions by approximately 2 lb/hour. Moreover, Condition **AQ-23** requires the installation of an oxidation catalyst if the Applicant cannot meet the specified limits.

0.0005% drift eliminator efficiency to reduce PM_{10} emissions associated with its operation. (Ex. 7, pp. 47-48.)

The BAAQMD has specified a limit on PM_{10} emissions of 9 lb/hr (duct burners unfired) and 12 lb/hr (duct burners fired). (See, Condition **AQ-20** (h).) With these PM_{10} limits, the MEC is below the BAAQMD's 100 tons/year threshold and therefore is not required to provide PM_{10} offsets pursuant to the NSR provisions.

To eliminate the potential for a significant adverse impact, Staff recommends the Applicant fully mitigate the MEC's PM_{10} emissions of 91.3 tons per year including cooling tower emissions. The Applicant will provide 29.2 tons per year of direct PM_{10} emissions, which leaves a balance of 61.1 tons/year. (See, Condition **AQ-51**.) To fully mitigate the MEC's PM_{10} emissions, the Applicant will also provide 124.2 tons/year of VOC emissions reductions.[39] Staff supports providing VOC emissions from the San Jose and Mountainview areas to mitigate PM_{10} emissions at 2:1 ratio. Reduction of VOC emissions will also reduce the formation of ozone during the summer, and further reduce the PM_{10} emissions during winter. (Ex. 7,. p. 49.)

CVRP asserts that the MEC's proposed PM_{10} limits are unrealistically low and cannot be met. (CVRP Opening Brief on Group 3 Topics (April 12, 2001), pp. 13-16.) It therefore suggests that a PM_{10} violation would go undetected if only one annual, announced source test were required to demonstrate compliance with the proposed limits.[40]

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[39] According to CARB guidelines, PM_{10}, VOC, SOx, and NOx emissions can be used to mitigate PM_{10} emissions.

[40] CRVP claims that the MEC's proposed PM_{10} limits are supported by only one source test at a Texas facility which did not have SCR. Applicant counters that there were three source tests on the Texas unit, which is equipped with SCR. All tests came in below the proposed PM_{10} limits. (2/28/01 RT 30-31; Reply Brief on Group 3 Topic (April 24, 2001), p. 3-8; Ex. 134, p. 8.)

We agree that confirmation of the facility's compliance with the proposed limits is necessary. Given the current exceedences of California PM_{10} standards, one PM_{10} source test per year seems insufficient to confirm that the project is meeting its proposed levels. Thus, we require PM_{10} monitoring three times per year during the first two years of operation. One of the annual monitoring tests shall be conducted during the winter to correspond to the historically highest period of ambient PM_{10} as recorded by the IBM monitoring station. All source tests must include operation with duct burners firing, power augmentation employed, and output at full load. If compliance is demonstrated in the six source tests during the first two years, we believe that annual PM_{10} source testing thereafter will be sufficient to confirm compliance with expected PM_{10} emission limits. If compliance is not demonstrated in the six source tests during the first two years, the matter should be referred to the BAAQMD to address the matter. We have added subsection (i) to Condition **AQ-20** to reflect this increased monitoring.

SULFUR DIOXIDE (SO_2). The MEC's SO_2 emissions will be controlled by burning natural gas, which typically contains only traces of sulfur. The emissions from the project are expected to be very small, and do not require the use of any additional post-combustion SO_2 control equipment. The use of natural gas with a sulfur content specification of 0.20 grains per 100 scf meets BACT. (Ex. 141, p. 16.)

9. OFFSET REGIMEN

Emission reduction credits (ERCs) can be created when existing permitted emission sources cease operation or reduce their operation below permitted levels. The ERCs are reviewed and approved by the BAAQMD and recorded in its "bank" for future use. To fully mitigate the MEC's potential emission increases, Applicant will purchase ERCs from the BAAQMD bank. All the project's offsets are located in the San Jose and Mountainview areas.

Many perceive ERCs as not actual mitigation, since the emission reductions have already occurred and, therefore, ambient air quality can only deteriorate with the new source of emissions. However, the BAAQMD, in its Air Quality Management Plan (AQMP), includes banked ERCs in its planning emissions inventories for future years as actual ongoing emissions. Therefore, the future effects of new sources due to emission increases are already taken into account in the AQMP, including the use of ERCs as a source of mitigation or offsets. The new source will thus not detract from the BAAQMD's attainment strategy. Consequently, the evidence establishes that banked offsets in this case constitute real mitigation of potential impacts from the proposed project in the context of the BAAQMD's overall attainment strategy. AIR QUALITY Table 8 shows the amounts of ERCs that are provided, sources of the ERCs, and ratio of mitigation. (See also, Conditions **AQ-40, 41**.)

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AIR QUALITY Table 8
Valid Emission Reduction Credits Proposed
By Applicant

Company Name	Location	BAAQMD Certificate Number[s]	VOC (ton/yr)	NO_X (ton/yr)	PM10 (ton/yr)
Folgers Coffee	San Jose	413	0	1.31	7.7
Frito Lay	San Jose	426	0	6.42	7.64
Glorietta Foods	San Jose	19	0	32.24	1.54
Raisch Products	Mountainview	507	0	6.5	12.33
Quebecor Facility	San Jose	625	356	0	0
Total Available Emission Reduction Credits			356	46.47	29.21
Total Project Emissions (Project liability)			28	185	91.3
BAAQMD required ratio			1:1	1.15:1	1:1
Required Offsets			28	212.75	91.3
Mitigating PM10 using PM10 and VOC (91.3 – 29.21) = 62.09 PM10 * 2 = 124.2 ton/yr			**124.2**	0	**29.21**
Mitigating VOC using VOC			**28**	0	0
Mitigating NOx (ton/yr)			**166.28**	**46.47**	0
Total required ERC's to fully mitigate MEC			**318.48**	**46.47**	**29.21**
Surplus (+) / Shortage (-) Offsets Balance			**+37.52**	**0**	**0**

Source: Ex. 7, p. 49.

As shown above, Applicant has secured 356 tons per year of VOC, 46.47 tons per year of NOx, and 29.21 tons per year of PM_{10} offsets. According to BAAQMD's Regulation 2-2-302, the project's VOC liability will be mitigated at 1:1 ratio. That means the Applicant must provide 28 tons per year of offsets to a fully mitigate the VOC liability of the project under District rules. Pursuant to Regulation 2-2-302.2, the MEC's NOx liability should be mitigated at a ratio of 1.15:1.0. The MEC's NOx liability is 185 tons per year for the first year including emissions during the commissioning. The Applicant will provide a total of 212.75 tons per year which includes 46.47 tons/year of NOx emissions and 166.28 tons/year of VOC emissions to fully mitigate the MEC's NOx emissions. (Ex. 7, p. 48.)

The City of San Jose asserts that regional offsets do not meet CEQA's requirement to mitigate the potential local adverse air quality impacts of the project. Instead, San Jose claims that local "in-kind" mitigation is required. (City's Opening Brief on Group 3 Topics (April 12, 2001), pp. 8-9.) The City suggests that reduction of local back-up diesel generator emissions would be an "in-kind" mitigation for NOx, but did not offer any evidence to establish the feasibility of this mitigation.

Applicant responds that the air quality analysis and mitigation address both local and regional matters. The local air quality concerns are addressed by applying control technologies to the equipment, the air quality impact analysis, and a health risk assessment. (2/28/01 RT 21-23.) The regional air quality issues are related to cumulative impacts that consider basin ambient air quality, the resultant offset requirements, and any additional mitigation imposed by the Commission. (Applicant's Reply Brief on Group 3 Topics (April 24, 2001), p. 3-10.)

We agree. Local offsets at or very near the project site are not required by federal or state law and, as a practical matter, are generally not possible. The

offsets required by the Conditions of Certification, though local in source, are nevertheless used to mitigate the project's contribution to the regional ozone and PM_{10} problems. (2/28/01 RT 25; 3/1/01 RT 60, 234.) In this instance, the MEC will provide PM_{10} mitigation with local offsets even though PM_{10} is a regional, not local, air quality problem. (Ex. 7, pp. 47-50; Ex. 134, p. 5.) Additionally, while ozone is a regional air quality problem, offsets will also benefit air quality in the San Jose area and the MEC will obtain offsets for ozone precursors in the San Jose - Mountainview area. (2/28/01 RT 26; 3/2/01 RT 55-56.)

In any event, there is an established regulatory program to address the potential air quality impacts of this project, and the evidence clearly shows that the project's offset regimen complies with the BAAQMD's adopted program designed to address pollutant emissions. There is no persuasive evidentiary showing otherwise.

10. Facility Closure

Eventually, the MEC will close, either as a result of the end of its useful life, or through some unexpected situation such as a natural disaster or catastrophic facility breakdown. When the facility closes, all sources of air emissions would cease and thus all impacts associated with those emissions would no longer occur.

The Permit to Operate, issued by the BAAQMD, is required for operation of the facility and is usually renewed on a five-year schedule. However, during those five years, the project owner must still pay permit fees annually. If the project owner chooses to close the facility and not pay the permit fees, then the Permit to Operate would be cancelled. In that event, the project could not restart and operate unless the Permit to Operate is renewed.

If the project owner were to decide to dismantle the project, there would likely be fugitive dust emissions associated with this effort. The Facility Closure Plan to be submitted to the Commission's Compliance Project Manager will include plans to comply with closure procedures, including the control of fugitive dust emissions. (Ex. 7, pp. 51-52.)

FINDINGS AND CONCLUSIONS

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

1. NAAQS and CAAQS have been established for six air contaminants identified as criteria air pollutants, including SO_2, CO, ozone O_3, NO_2, Pb, and particulate matter less than 10 microns in diameter (PM_{10}).

2. The BAAQMD is the air quality regulatory agency for the area where the project site is located.

3. The Bay Area air basin is a non-attainment area for both the state and federal 1-hour ozone standards and the state PM_{10} standard, but in attainment for all other criteria pollutants.

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

5. The BAAQMD issued a FDOC for the MEC project that determines the project will comply with all applicable District rules.

6. BACT/LAER for NOx is 2.5 ppmvd @ 15% O_2, averaged over one hour or 2.0 ppmvd averaged over three hours.

7. BACT for CO is an emission limitation of 10 ppmvd @ 15% O_2, averaged over three hours.

8. The MEC project will employ the BACT to limit NOx and CO emissions.

9. The BAAQMD has determined that the use of SCR is acceptable to meet BACT/LAER, and that SCONOx is a technically infeasible control technology for CO emissions.

10. Applicant has secured all required offsets to fully mitigate the project in accordance with the BAAQMD's rules on NSR.

11. All project offsets are located in the San Jose and Mountainview areas.

12. The BAAQMD has issued a final PSD permit for the MEC project.

13. Assuming implementation of the Conditions of Certification, project emissions from construction and operation will be appropriately mitigated and comply with applicable LORS.

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

15. Downwash conditions represent with the worst-case conditions insofar as air quality dispersion modeling is concerned.

16. The modeling used by Applicant, Staff, and the BAAQMD is appropriate, and adequately reflects the worst-case air quality conditions pertinent to the MEC project.

17. The meteorological data used by Applicant, Staff, and the BAAQMD complies with USEPA criteria and is adequately representative of site conditions.

18. Actual project emissions during construction will likely be lower than modeled.

19. In the present circumstance, the BAAQMD does not require offsets for PM_{10} emissions.

20. The Applicant, though not required, has nevertheless obtained PM_{10} offsets for the project.

21. Additional monitoring, as provided in the Conditions of Certification, will ensure that the MEC meets the expected PM_{10} emissions levels.

22. Implementation of the Conditions of Certification, below, reasonably assures that the MEC project will conform with all applicable laws, ordinances, regulations, and standards relating to Air Quality as set forth in the pertinent portion of Appendix A of this Decision.

We, therefore, conclude that the MEC will not result in any significant direct, indirect, or cumulative adverse impacts insofar as air quality is concerned.

CONDITIONS OF CERTIFICATION

METCALF ENERGY CENTER

PERMIT CONDITIONS

Definitions:

Clock Hour:	Any continuous 60-minute period beginning on the hour.
Calendar Day:	Any continuous 24-hour period beginning at 12:00 AM or 0000 hours.
Year:	Any consecutive twelve-month period of time
Heat Input:	All heat inputs refer to the heat input at the higher heating value (HHV) of the fuel, in BTU/scf.
Rolling 3-hour period:	Any three-hour period that begins on the hour and does not include start-up or shutdown periods.
Firing Hours:	Period of time during which fuel is flowing to a unit,measured in fifteen minute increments.
MM BTU:	million british thermal units
Gas Turbine Start-up Mode:	The lesser of the first 180 minutes of continuous fuel flow to the Gas Turbine after fuel flow is initiated or the period of time from Gas Turbine fuel flow initiation until the Gas Turbine achieves two consecutive CEM data points in compliance with the emission concentration limits of Conditions 20(b) and 20(d).
Gas Turbine Shutdown Mode:	The lesser of the 30 minute period immediately prior to the termination of fuel flow to the Gas Turbine or the period of time from non-compliance with any requirement listed in Conditions 20(b) through 20(d) until termination of fuel flow to the Gas Turbine.
Specified PAHs:	The polycyclic aromatic hydrocarbons listed below shall be considered to Specified PAHs for these permit conditions. Any emission limits for Specified PAHs refer to the sum of the emissions for all six of the following compounds. Benzo[a]anthracene Benzo[b]fluoranthene Benzo[k]fluoranthene Benzo[a]pyrene Dibenzo[a,h]anthracene Indeno[1,2,3-cd]pyrene

Corrected Concentration: The concentration of any pollutant (generally NOx, CO, or NH3) corrected to a standard stack gas oxygen concentration. For emission point P-1 (combined exhaust of S-1 Gas Turbine and S-2 HRSG duct burners) and emission point P-2 (combined exhaust of S-3 Gas Turbine and S-4 HRSG duct burners) the standard stack gas oxygen concentration is 15% O2 by volume on a dry basis

Commissioning Activities:	All testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and the MEC construction contractor to insure safe and reliable steady state operation of the gas turbines, heat recovery steam generators, steam turbine, and associated electrical delivery systems.
Commissioning Period:	The Period shall commence when all mechanical, electrical, and control systems are installed and individual system start-up has been completed, or when a gas turbine is first fired, whichever occurs first. The period shall terminate when the plant has completed performance testing, is available for commercial operation, and has initiated sales to the power exchange.
Precursor Organic Compounds (POCs):	Any compound of carbon, excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate
CEC CPM:	California Energy Commission Compliance Program Manager
MEC:	Metcalf Energy Center

CONDITIONS FOR THE COMMISSIONING PERIOD

AQ-1 The owner/operator of the Metcalf Energy Center (MEC) shall minimize emissions of carbon monoxide and nitrogen oxides from S-1 and S-3 Gas Turbines and S-2 and S-4 Heat Recovery Steam Generators (HRSGs) to the maximum extent possible during the commissioning period. Conditions 1 through 12 shall only apply during the commissioning period as defined above. Unless otherwise indicated, Conditions 13 through 47 shall apply after the commissioning period has ended.

Verification: The owner/operator shall submit a monthly compliance report to the California Energy Commission Compliance manager (CPM). In this report the owner/operator shall indicate how this Condition is being implemented.

AQ-2 At the earliest feasible opportunity in accordance with the recommendations of the equipment manufacturers and the construction

contractor, the S-1 & S-3 Gas Turbine combustors and S-2 & S-4 Heat Recovery Steam Generator duct burners shall be tuned to minimize the emissions of carbon monoxide and nitrogen oxides.

Verification: In the monthly compliance report the owner/operator shall indicate how this Condition is being implemented.

AQ-3 At the earliest feasible opportunity in accordance with the recommendations of the equipment manufacturers and the construction contractor, the A-1 and A-2 SCR Systems shall be installed, adjusted, and operated to minimize the emissions of carbon monoxide and nitrogen oxides from S-1 & S-3 Gas Turbines and S-2 & S-4 Heat Recovery Steam Generators.

Verification: In the monthly compliance report the owner/operator shall indicate how this Condition is being implemented.

AQ-4 Coincident with the steady-state operation of A-1 & A-2 SCR Systems pursuant to conditions 3, 10, 11, and 12, the Gas Turbines (S-1 & S-3) and the HRSGs (S-2 & S-4) shall comply with the NOx and CO emission limitations specified in conditions 20(a) through 20(d).

Verification: In the monthly compliance report the owner/operator shall indicate how this Condition is being implemented.

AQ-5 The owner/operator of the MEC shall submit a plan to the District Permit Services Division and the CEC CPM at least four (4) weeks prior to first firing of S-1 or S-3 Gas Turbines describing the procedures to be followed during the commissioning of the turbines, HRSGs, and steam turbine. The plan shall include a description of each commissioning activity, the anticipated duration of each activity in hours, and the purpose of the activity. The activities described shall include, but not be limited to, the tuning of the Dry-Low-NOx combustors, the installation and operation of the required emission control systems, the installation, calibration, and testing of the CO and NOx continuous emission monitors, and any activities requiring the firing of the Gas Turbines (S-1 & S-3) and HRSGs (S-2 & S-4) without abatement by their respective SCR Systems. Neither Gas Turbine (S-1 or S-3) shall be fired sooner than 28 days after the District receives the commissioning plan.

Verification: At least twenty-eight (28) days prior to first firing of the gas turbines, the Project owner shall submit a complete commissioning plan.

AQ-6 During the commissioning period, the owner/operator of the MEC shall demonstrate compliance with conditions 8 through 10 through the use of properly operated and maintained continuous emission monitors and data recorders for the following parameters:

- firing hours
- fuel flow rates
- stack gas nitrogen oxide emission concentrations
- stack gas carbon monoxide emission concentrations
- stack gas oxygen concentrations.

The monitored parameters shall be recorded at least once every 15 minutes (excluding normal calibration periods or when the monitored source is not in operation) for the Gas Turbines (S-1 & S-3) and HRSGs (S-2 & S-4). The owner/operator shall use District-approved methods to calculate heat input rates, nitrogen dioxide mass emission rates, carbon monoxide mass emission rates, and NOx and CO emission concentrations, summarized for each clock hour and each calendar day. All records shall be retained on site for at least 5 years from the date of entry and made available to District personnel upon request.

Verification: In the monthly compliance report to the CPM the owner/operator shall indicate how this Condition is being implemented.

AQ-7 The District-approved continuous monitors specified in Condition 8 shall be installed, calibrated, and operational prior to first firing of the Gas Turbines (S-1 & S-3) and Heat Recovery Steam Generators (S-2 & S-4). After first firing of the turbines, the detection range of these continuous emission monitors shall be adjusted as necessary to accurately measure the resulting range of CO and NOx emission concentrations. The type, specifications, and location of these monitors shall be subject to District review and approval.

Verification: In the monthly compliance report to the CPM the owner/operator shall indicate how this Condition is being implemented.

AQ-8 The total number of firing hours of S-1 Gas Turbine and S-2 Heat Recovery Steam Generator without abatement of nitrogen oxide emissions by A-1 SCR System shall not exceed 300 hours during the commissioning period. Such operation of S-1 Gas Turbine and S-2 HRSG without abatement shall be limited to discrete commissioning activities that can only be properly executed without the SCR system in place. Upon completion of these activities, the owner/operator shall provide written notice to the District Permit Services and Enforcement Divisions and the unused balance of the 300 firing hours without abatement shall expire.

Verification: In the monthly compliance report the owner/operator shall indicate the cumulative number of firing without SCR. The owner/operator shall submit a copy of the completion notice to the CPM.

AQ-9 The total number of firing hours of S-3 Gas Turbine and S-4 Heat Recovery Steam Generator without abatement of nitrogen oxide emissions by A-3 SCR System shall not exceed 300 hours during the commissioning period. Such operation of S-3 Gas Turbine and S-4 HRSG without abatement shall be

limited to discrete commissioning activities that can only be properly executed without the SCR system in place. Upon completion of these activities, the owner/operator shall provide written notice to the District Permit Services and Enforcement Divisions and the unused balance of the 300 firing hours without abatement shall expire.

Verification: n the monthly compliance report the owner/operator shall indicate the cumulative number of firing without SCR. The owner/operator shall submit a copy of the completion notice to the CPM.

AQ-10 The total mass emissions of nitrogen oxides, carbon monoxide, precursor organic compounds, PM10, and sulfur dioxide that are emitted by the Gas Turbines (S-1 & S-3) and Heat Recovery Steam Generators (S-2 & S-4) during the commissioning period shall accrue towards the consecutive twelve-month emission limitations specified in Condition 25, except that total, cumulative NOx mass emissions from S-1, S-2, S-3, and S-4 shall not exceed 185 tons during any consecutive twelve-month period which includes a portion of the Commissioning Period.

Verification: In the monthly compliance report the owner/operator shall indicate the cumulative number of firings without SCR. The owner/operator shall submit a copy of the completion notice to the CPM.

AQ-11 Combined pollutant mass emissions from the Gas Turbines (S-1 & S-3) and Heat Recovery Steam Generators (S-2 & S-4) shall not exceed the following limits during the commissioning period. These emission limits shall include emissions resulting from the start-up and shutdown of the Gas Turbines (S-1 & S-3)

NOx (as NO_2)	4,805 pounds per calendar day	381.2 pounds per hour
CO	11,498 pounds per calendar day	930 pounds per hour
POC (as CH4)	495 pounds per calendar day	
PM10	468 pounds per calendar day	
SO2	42 pounds per calendar day	

Verification: In the monthly compliance report the owner/operator shall indicate any violations of the above emission limits.

AQ-12 Prior to the end of the Commissioning Period, the Owner/Operator shall conduct a District and CEC approved source test using external continuous emission monitors to determine compliance with Condition 21. The source test shall determine NOx, CO, and POC emissions during start-up and shutdown of the gas turbines. The POC emissions shall be analyzed for methane and ethane to account for the presence of unburned natural gas. The source test shall include a minimum of three (3) start-up and three (3) shutdown periods. Twenty (20) working days before the execution of the source tests, the Owner/Operator shall submit to the District and the CEC Compliance Program Manager (CPM) a detailed source test plan designed to satisfy the requirements of this condition.

The District and the CEC CPM will notify the Owner/Operator of any necessary modifications to the plan within twenty (20) working days of receipt of the plan; otherwise, the plan shall be deemed approved. The Owner/Operator shall incorporate the District and CEC CPM comments into the test plan. The Owner/Operator shall notify the District and the CEC CPM within seven (7) working days prior to the planned source testing date. Source test results shall be submitted to the District and the CEC CPM within thirty (30) days of the source testing date.

Verification: Verification: Approval of the source test plan and receipt of the source test reports is the verification of compliance with this Condition.

Conditions for the Gas Turbines (S-1 & S-3) and the Heat Recovery Steam Generators (HRSGs; S-2 & S-4)

AQ-13 The Gas Turbines (S-1 and S-3) and HRSG Duct Burners (S-2 and S-4) shall be fired exclusively on natural gas. (BACT for SO2 and PM10)

Verification: As part of the semiannual Air Quality Reports (as required by **AQ-43**), the project owner shall indicate the date, time, and duration of any violation of this Condition.

AQ-14 The combined heat input rate to each power train consisting of a Gas Turbine and its associated HRSG (S-1 & S-2 and S-3 & S-4) shall not exceed 2,124 MM BTU per hour, averaged over any rolling 3-hour period. (PSD for NOx).

Verification: As part of the Air Quality monthly Reports, the owner/operator shall include information on the date and time when the hourly fuel consumption exceeded this hourly limit.

AQ-15 The combined heat input rate to each power train consisting of a Gas Turbine and its associated HRSG (S-1 & S-2 and S-3 & S-4) shall not exceed 49,908 MM BTU per calendar day. (PSD for PM10)

Verification: As part of the Air Quality monthly Reports, the owner/operator shall include information on the date and time when the daily fuel consumption exceeded this daily limit.

AQ-16 The combined cumulative heat input rate for the Gas Turbines (S-1 & S-3) and the HRSGs (S-2 & S-4) shall not exceed 35,274,060 MM BTU per year. (Offsets)

Verification: As part of the Air Quality monthly Reports, the owner/operator shall include information on the date and time when the daily fuel consumption exceeded this daily limit.

AQ-17 The HRSG duct burners (S-2 and S-4) shall not be fired unless its associated Gas Turbine (S-1 and S-3, respectively) is in operation. (BACT for NOx)

Verification: As part of the Air Quality Reports, the owner/operator shall include information on the date, time, and duration of any violation of this permit Condition.

AQ-18 S-1 Gas Turbine and S-2 HRSG shall be abated by the properly operated and properly maintained A-1 Selective Catalytic Reduction (SCR) System whenever fuel is combusted at those sources and the A-1 catalyst bed has reached minimum operating temperature. (BACT for NOx)

Verification: As part of the semiannual Air Quality Reports, the owner/operator shall provide information on any major problem in the operation of the Oxidizing Catalyst and Selective Catalytic Reduction Systems for the Gas Turbines and HRSGs. The information shall include, at a minimum, the date and description of the problem and the steps taken to resolve the problem.

AQ-19 S-3 Gas Turbine and S-4 HRSG shall be abated by the properly operated and properly maintained A-2 Selective Catalytic Reduction (SCR) System whenever fuel is combusted at those sources and the A-2 catalyst bed has reached minimum operating temperature. (BACT for NOx)

Verification: As part of the semiannual Air Quality Reports, the owner/operator shall provide information on any major problem in the operation of the Oxidizing Catalyst and Selective Catalytic Reduction Systems for the Gas Turbines and HRSGs. The information shall include, at a minimum, the date and description of the problem and the steps taken to resolve the problem.

AQ-20 The Gas Turbines (S-1 & S-3) and HRSGs (S-2 & S-4) shall comply with requirements (a) through (h) under all operating scenarios, including duct burner firing mode and steam injection power augmentation mode. Requirements (a) through (h) do not apply during a gas turbine start-up or shutdown. (BACT, PSD, and Toxic Risk Management Policy)

(a) Nitrogen oxide mass emissions (calculated as NO_2) at P-1 (the combined exhaust point for the S-1 Gas Turbine and the S-2 HRSG after abatement by A-1 SCR System) shall not exceed 19.2 pounds per hour or 0.00904 lb/MM BTU (HHV) of natural gas fired. Nitrogen oxide mass emissions (calculated as NO_2) at P-2 (the combined exhaust point for the S-3 Gas Turbine and the S-4 HRSG after abatement by A-3 SCR System) shall not exceed 19.2 pounds per hour or 0.00904 lb/MM BTU (HHV) of natural gas fired. (PSD for NOx)

(b) The nitrogen oxide emission concentration at emission points P-1 and P-2 each shall not exceed 2.5 ppmv, on a dry basis, corrected to 15% O_2, averaged over any 1-hour period. (BACT for NOx)

(c) Carbon monoxide mass emissions at P-1 and P-2 each shall not exceed 28.07 pounds per hour, averaged over any rolling 3-hour period. (PSD for CO)

(d) When the heat input to a combustion turbine exceeds 1700 MM BTU/hr (HHV), the carbon monoxide emission concentration at P-1 and P-2 each shall not exceed 6.0 ppmv, on a dry basis, corrected to 15% O_2, and the carbon monoxide mass emission rate at P-1 an P-2 each shall not exceed 0.0132 lb/MM BTU of natural gas fired, averaged over any rolling 3-hour period. If compliance source test results and continuous emission monitoring data indicate that a lower CO emission concentration level can be achieved on a consistent basis (with a suitable compliance margin) over the entire range of turbine operating conditions, including duct firing and power steam augmentation operations, and over the entire range of ambient conditions, the District will reduce this limit to a level not lower than 4.0 ppmv, on a dry basis, corrected to 15% O_2. If this limit is reduced, the corresponding mass emission rate limit specified in Condition 20(c) shall also be modified to reflect this reduction. (BACT for CO)

(e) Ammonia (NH_3) emission concentrations at P-1 and P-2 each shall not exceed 5 ppmv, on a dry basis, corrected to 15% O_2, averaged over any rolling 3-hour period. This ammonia emission concentration shall be verified by the continuous recording of the ammonia injection rate to A-1 and A-2 SCR Systems. The correlation between the gas turbine and HRSG heat input rates, A-1 and A-2 SCR System ammonia injection rates, and corresponding ammonia emission concentration at emission points P-1 and P-2 shall be determined in accordance with permit Condition 30. (TRMP for NH_3)

(f) Precursor organic compound (POC) mass emissions (as CH4) at P-1 and P-2 each shall not exceed 2.7 pounds per hour or 0.00126 lb/MM BTU of natural gas fired. (BACT)

(g) Sulfur dioxide (SO2) mass emissions at P-1 and P-2 each shall not exceed 1.28 pounds per hour or 0.0006 lb/MM BTU of natural gas fired. (BACT)

(h) Particulate matter (PM_{10}) mass emissions at P-1 and P-2 each shall not exceed 9 pounds per hour or 0.00452 lb PM10/MM BTU of natural gas fired when HRSG duct burners are not in operation. Particulate matter (PM_{10}) mass emissions at P-1 and P-2 each shall not exceed 12 pounds

per hour or 0.00565 lb PM_{10}/MM BTU of natural gas fired when HRSG duct burners are in operation. (BACT)

(i) Testing to confirm the PM_{10} emissions levels shall occur at least three (3) times per year during each of the first two (2) years of operation. Each year, at least one (1) monitoring test shall occur during winter months.

Verification: As part of the semiannual Air Quality Reports, the owner/operator shall indicate the date, time, and duration of any violation of this Condition. The owner/operator shall also include quantitative information on the severity of the violation.

AQ-21 The regulated air pollutant mass emission rates from each of the Gas Turbines (S-1 and S-3) during a start-up or a shutdown shall not exceed the limits established below. (PSD)

	Start-Up (lb/start-up)	Start-Up (lb/hr)	Shutdown (lb/shutdown)
Oxides of Nitrogen (as NO2)	240	80	18
Carbon Monoxide (CO)	2,514	902	43.8
Precursor Organic Compounds (as CH4)	48	16	5

Verification: As part of the semiannual Air Quality Reports, the owner/operator shall indicate the date, time, and duration of any violation of this Condition. The owner/operator shall also include quantitative information on the severity of the violation.

AQ-22 The Gas Turbines (S-1 and S-3) shall not be in start-up mode simultaneously. (PSD)

Verification: In the monthly compliance report the owner/operator shall indicate any violations of this Condition.

AQ-23 The heat recovery steam generators (S-2 & S-4) and associated ducting shall be designed and constructed such that an oxidation catalyst can be readily installed and properly operated if deemed necessary by the APCO to insure compliance with the CO emission rate limitations of conditions 20(c) and 20(d). (BACT)

Verification: In the semiannual air quality compliance report the owner/operator shall indicate how this Condition is being implemented.

AQ-24 Total combined emissions from the Gas Turbines and HRSGs (S-1, S-2, S-3, and S-4), including emissions generated during Gas Turbine start-ups and shutdowns shall not exceed the following limits during any calendar day:

(a) 1,362.6 pounds of NOx (as NO2) per day (CEQA)
(b) 7,891.1 pounds of CO per day (PSD)
(c) 230.2 pounds of POC (as CH4) per day (CEQA)
(d) 510 pounds of PM10 per day (PSD)
(e) 57.9 pounds of SO2 per day (BACT)

Verification: As part of the semiannual Air Quality Reports, the owner/operator shall indicate the date of any violation of this Condition including quantitative information on the severity of the violation.

AQ-25 Cumulative combined emissions from the Gas Turbines and HRSGs (S-1, S-2, S-3, and S-4), including emissions generated from cooling towers and during gas turbine start-ups and shutdowns shall not exceed the following limits during any consecutive twelve-month period:

(a)123.4 tons of NOx (as NO2) per year (Offsets)
(b)588 tons of CO per year (Cumulative Increase, PSD)
(c)28 tons of POC (as CH4) per year (Offsets)
(d)91.3 tons of PM10 per year (Offsets)
(e)10.6 tons of SO2 per year (Cumulative Increase)

Verification: As part of the annual Air Quality Reports, the owner/operator shall indicate the date of any violation of this Condition including quantitative information on the severity of the violation.

AQ-26 The maximum projected annual toxic air contaminant emissions (per Condition 29) from the Gas Turbines and HRSGs combined (S-1, S-2, S-3, and S-4) shall not exceed the following limits:

formaldehyde	3,796 pounds per year
benzene	480 pounds of per year
Specified polycyclic aromatic hydrocarbons (PAHs)	22.8 pounds of per year

unless the following requirement is satisfied:

The owner/operator shall perform a health risk assessment using the emission rates determined by source test and the most current Bay Area Air Quality Management District approved procedures and unit risk factors in effect at the time of the analysis. This risk analysis shall be submitted to the District and the CEC CPM within 60 days of the source test date. The owner/operator may request that the District and the CEC CPM revise the carcinogenic compound emission limits specified above. If the owner/operator demonstrates to the satisfaction of the APCO that these revised emission limits will result in a cancer risk of not more than 1.0 in one million, the District and the CEC CPM may, at their discretion, adjust the carcinogenic compound emission limits listed above. (TRMP)

Verification: As part of the annual Air Quality Reports, the owner/operator shall indicate the date, duration, and severity of any violations of this Condition including quantitative information on the severity of the violation.

AQ-27 The owner/operator shall demonstrate compliance with conditions 14 through 17, 20(a) through 20(d), 21, 22, 24(a), 24(b), 25(a), and 25(b) by using properly operated and maintained continuous monitors (during all hours of operation including equipment Start-up and Shutdown periods) for all of the following parameters:

(a) Firing Hours and Fuel Flow Rates for each of the following sources: S-1 & S-2 combined and S-3 & S-4 combined.
(b) Oxygen (O2) Concentrations, Nitrogen Oxides (NOx) Concentrations, and Carbon Monoxide (CO) Concentrations at each of the following exhaust points: P-1 and P-2.
(c) Ammonia injection rate at A-1 and A-2 SCR Systems.
(d) Steam injection rate at S-1 & S-3 Gas Turbine Combustors.

The owner/operator shall record all of the above parameters every 15 minutes (excluding normal calibration periods) and shall summarize all of the above parameters for each clock hour. For each calendar day, the owner/operator shall calculate and record the total firing hours, the average hourly fuel flow rates, and pollutant emission concentrations.

The owner/operator shall use the parameters measured above and District-approved calculation methods to calculate the following parameters:

(e) Heat Input Rate for each of the following sources: S-1 & S-2 combined and S-3 & S-4 combined.
(f) Corrected NOx concentrations, NOx mass emissions (as NO2), corrected CO concentrations, and CO mass emissions at each of the following exhaust points: P-1 and P-2.

For each source, source grouping, or exhaust point, the owner/operator shall record the parameters specified in conditions 27(e) and 27(f) at least once every 15 minutes (excluding normal calibration periods). As specified below, the owner/operator shall calculate and record the following data:

(g) total Heat Input Rate for every clock hour and the average hourly Heat Input Rate for every rolling 3-hour period.
(h) on an hourly basis, the cumulative total Heat Input Rate for each calendar day for the following: each Gas Turbine and associated HRSG combined and all four sources (S-1, S-2, S-3, and S-4) combined.
(i) the average NOx mass emissions (as NO2), CO mass emissions, and corrected NOx and CO emission concentrations for every clock hour and for every rolling 3-hour period.

(j) on an hourly basis, the cumulative total NOx mass emissions (as NO2) and the cumulative total CO mass emissions, for each calendar day for the following: each Gas Turbine and associated HRSG combined, and all four sources (S-1, S-2, S-3, and S-4) combined.
(k) For each calendar day, the average hourly Heat Input Rates, Corrected NOx emission concentrations, NOx mass emissions (as NO2), corrected CO emission concentrations, and CO mass emissions for each Gas Turbine and associated HRSG combined.
(l) on a daily basis, the cumulative total NOx mass emissions (as NO2) and cumulative total CO mass emissions, for the previous consecutive twelve month period for all four sources (S-1, S-2, S-3, and S-4) combined.
(1-520.1, 9-9-501, BACT, Offsets, NSPS, PSD, Cumulative Increase)

Verification: As part of the annual Air Quality Reports, the owner/operator shall indicate the date of any violation of this Condition including quantitative information on the severity of the violation.

AQ-28 To demonstrate compliance with conditions 20(f), 20(g), 20(h), 21, 24(c) through 24(e), and 25(c) through 25(e), the owner/operator shall calculate and record on a daily basis, the Precursor Organic Compound (POC) mass emissions, Fine Particulate Matter (PM_{10}) mass emissions (including condensable particulate matter), and Sulfur Dioxide (SO_2) mass emissions from each power train. The owner/operator shall use the actual Heat Input Rates calculated pursuant to Condition 27, actual Gas Turbine Start-up Times, actual Gas Turbine Shutdown Times, and CEC and District-approved emission factors to calculate these emissions. The calculated emissions shall be presented as follows:

(a) For each calendar day, POC, PM_{10}, and SO_2 emissions shall be summarized for: each power train (Gas Turbine and its respective HRSG combined) and all four sources (S-1, S-2, S-3, and S-4) combined.
(b) on a daily basis, the cumulative total POC, PM_{10}, and SO_2 mass emissions, for each year for all four sources (S-1, S-2, S-3, and S-4) combined.
(Offsets, PSD, Cumulative Increase)

Verification: As part of the monthly Air Quality Reports, the owner/operator shall indicate the date of any violation of this Condition including quantitative information on the severity of the violation.

AQ-29 To demonstrate compliance with Condition 26, the owner/operator shall calculate and record on an annual basis the maximum projected annual emissions of: Formaldehyde, Benzene, and Specified PAHs. Maximum projected annual emissions shall be calculated using the maximum Heat Input Rate of 35,274,060 MM BTU/year and the highest emission factor (pounds of

pollutant per MM BTU of Heat Input) determined by any source test of the S-1 & S-3 Gas Turbines and/or S-2 & S-4 Heat Recovery Steam Generators. If the highest emission factor for a given pollutant occurs during minimum-load turbine operation, a reduced annual heat input rate may be utilized to calculate the maximum projected annual emissions to reflect the reduced heat input during gas turbine start-up and minimum-load operation. The reduced annual heat input rate shall be subject to the review and approval of the District. (TRMP)

Verification: As part of the annual Air Quality Reports, the owner/operator shall indicate the date of any violation of this Condition including quantitative information on the severity of the violation.

AQ-30 Within sixty (60) days of start-up of the MEC, the owner/operator shall conduct a District-approved source test on exhaust point P-1 or P-2 to determine the corrected ammonia (NH_3) emission concentration to determine compliance with Condition 20(e). The source test shall determine the correlation between the heat input rates of the gas turbine and associated HRSG, A-1 or A-2 SCR System ammonia injection rate, and the corresponding NH_3 emission concentration at emission point P-1 or P-2. The source test shall be conducted over the expected operating range of the turbine and HRSG (including, but not limited to, minimum and 100% load) to establish the range of ammonia injection rates necessary to achieve NOx emission reductions while maintaining ammonia slip levels. Continuing compliance with Condition 20(e) shall be demonstrated through calculations of corrected ammonia concentrations based upon the source test correlation and continuous records of ammonia injection rate. (TRMP)

Verification: At least ninety (90) days before start-up, the owner/operator shall provide a copy of the source test protocols. Approval of the source test protocols and the source test reports shall be deemed as verification for this Condition. The owner/operator shall notify the District and the CEC CPM within seven (7) working days before the execution of the source tests required in this Condition. Source test results shall be submitted to the District and to the CEC CPM within thirty (30) days of the date of the tests.

AQ-31 Within sixty (60) days of start-up of the MEC and on an annual basis thereafter, the owner/operator shall conduct a District-approved source test on exhaust points P-1 and P-2 while each Gas Turbine and associated Heat Recovery Steam Generator are operating at maximum load (including steam injection power augmentation mode) to determine compliance with Conditions 20(a), (b), (c), (d), (f), (g), and (h), while each Gas Turbine and associated Heat Recovery Steam Generator are operating at minimum load to determine compliance with Conditions 20(c) and (d), and to verify the accuracy of the continuous emission monitors required in Condition 29. The owner/operator shall test for (as a minimum): water content, stack gas flow rate, oxygen concentration, precursor organic compound concentration and mass emissions, nitrogen oxide concentration and mass emissions (as NO_2), carbon monoxide concentration and

mass emissions, sulfur dioxide concentration and mass emissions, methane, ethane, and particulate matter (PM_{10}) emissions including condensable particulate matter. (BACT, offsets)

Verification: At least ninety (90) days before start-up, the owner/operator shall provide a copy of the source test protocols. Approval of the source test protocols, as required in Condition 58, and the source test reports shall be deemed as verification for this Condition. The owner/operator shall notify the District and the CEC CPM within seven (7) working days before the execution of the source tests required in this Condition. Source test results shall be submitted to the District and to the CEC CPM within thirty (30) days of the date of the tests.

AQ-32 The owner/operator shall obtain approval for all source test procedures from the District's Source Test Section and the CEC CPM prior to conducting any tests. The owner/operator shall comply with all applicable testing requirements for continuous emission monitors as specified in Volume V of the District's Manual of Procedures. The owner/operator shall notify the District's Source Test Section and the CEC CPM in writing of the source test protocols and projected test dates at least seven (7) days prior to the testing date(s). As indicated above, the Owner/Operator shall measure the contribution of condensable PM (back half) to the total PM_{10} emissions. However, the Owner/Operator may propose alternative measuring techniques to measure condensable PM such as the use of a dilution tunnel or other appropriate method used to capture semi-volatile organic compounds. Source test results shall be submitted to the District and the CEC CPM within sixty (60) days of conducting the tests. (BACT)

Verification: At least ninety (90) days before start-up, the owner/operator shall provide a copy of the source test protocols. Approval of the source test procedures and receipt of source test results will be deemed as verification of this Condition.

AQ-33 Within sixty (60) days of start-up of the MEC and on an biennial basis (once every two years) thereafter, the owner/operator shall conduct a District-approved source test on exhaust point P-1 or P-2 while the Gas Turbine and associated Heat Recovery Steam Generator are operating at maximum allowable operating rates to demonstrate compliance with Condition 26. The gas turbine shall also be tested at minimum load. If three consecutive biennial source tests demonstrate that the annual emission rates calculated pursuant to Condition 29 for any of the compounds listed below are less than the BAAQMD Toxic Risk Management Policy trigger levels shown, then the owner/operator may discontinue future testing for that pollutant:

Benzene	(	26.8 pounds/year
Formaldehyde	<	132 pounds/year
Specified PAH's	(	0.18 pounds/year (TRMP)

Verification: The owner/operator shall notify the District and the CEC CPM at least seven (7) working days before the owner/operator plans to conduct source testing as required by this Condition. Source test results shall be submitted to the District and the CEC CPM within thirty (30) days of conducting the test.

AQ-34 The owner/operator of the MEC shall submit all reports (including, but not limited to monthly CEM reports, monitor breakdown reports, emission excess reports, equipment breakdown reports, etc.) as required by District Rules or Regulations and in accordance with all procedures and time limits specified in the Rule, Regulation, Manual of Procedures, or Enforcement Division Policies & Procedures Manual. (Regulation 2-6-502)

Verification: At least ninety (90) days before start-up, the owner/operator shall provide a copy of the test protocols. Submittal of the reports to the CEC CPM constitutes verification of compliance with this Condition. All reports shall be submitted to the CEC CPM within when they are due according to District Rules and Regulations.

AQ-35 The owner/operator of the MEC shall maintain all records and reports on site for a minimum of five (5) years. These records shall include but are not limited to: continuous monitoring records (firing hours, fuel flows, emission rates, monitor excesses, breakdowns, etc.), source test and analytical records, natural gas sulfur content analysis results, emission calculation records, records of plant upsets and related incidents. The owner/operator shall make all records and reports available to District and the CEC CPM staff upon request. (Regulation 2-6-501)

Verification: During site inspection, the owner/operator shall make all records and reports available to the District, California Air Resources Board, and CPM.

AQ-36 The owner/operator of the MEC shall notify the District and the CEC CPM of any violations of these permit conditions. Notification shall be submitted in a timely manner, in accordance with all applicable District Rules, Regulations, and the Manual of Procedures. Notwithstanding the notification and reporting requirements given in any District Rule, Regulation, or the Manual of Procedures, the owner/operator shall submit written notification (facsimile is acceptable) to the Enforcement Division within 96 hours of the violation of any permit condition. (Regulation 2-1-403)

Verification: Submittal of these notifications as required by this Condition is the verification of these permit conditions. In addition, as part of the Air Quality Reports, the owner/operator shall include information on the dates when these violations occurred and when the owner/operator notified the District and the CEC CPM.

AQ-37 The stack height of emission points P-1 and P-2 shall each be at least 145 feet above grade level at the stack base. (PSD, TRMP)

Verification: At least forty-five (45) days prior to the release to the manufacturer of the emission stack's "approved for construction" drawings, the Owner/Operator shall submit the drawings to the CEC CPM for review and approval.

AQ-38 The Owner/Operator of MEC shall provide adequate stack sampling ports and platforms to enable the performance of source testing. The location and configuration of the stack sampling ports shall be subject to BAAQMD review and approval. (Regulation 1-501)

Verification: At least one hundred and twenty (120) days before initial operation, the Owner/Operator shall submit to the BAAQMD and the CEC CPM a plan for the installation of stack sampling ports and platforms. Within sixty (60) days of receipt of the plan, the BAAQMD will advise the Owner/Operator and the CEC CPM of the acceptability of the plan; otherwise the plan shall be deemed approved.

AQ-39 Within 180 days of the issuance of the Authority to Construct for the MEC, the Owner/Operator shall contact the BAAQMD Technical Services Division regarding requirements for the continuous emission monitors, sampling ports, platforms, and source tests required by Conditions 27, 30, 31, 33, and 47. All source testing and monitoring shall be conducted in accordance with the BAAQMD Manual of Procedures. (Regulation 1-501)

Verification: The owner/operator shall notify the CEC CPM at least seven (7) working days before these contacts are made.

AQ-40 Prior to the issuance of the BAAQMD Authority to Construct for the Metcalf Energy Center, the Owner/Operator shall demonstrate that valid emission reduction credits in the amount of 212.75 tons/year of Nitrogen Oxides and 28 tons/year of Precursor Organic Compounds or equivalent (as defined by District Regulations 2-2-302.1 and 2-2-302.2) are under their control through enforceable contracts, option to purchase agreements, or equivalent binding legal documents. (Offsets)

Verification: No more than thirty (30) days after the issuance of an Authority to Construct, the Owner/Operator shall provide a copy of the ATC to the CEC CPM for review.

AQ-41 Prior to the start of construction of the Metcalf Energy Center, the Owner/Operator shall provide to the District valid emission reduction credit banking certificates in the amount of 212.75 tons/year of Nitrogen Oxides and 28 tons/year of Precursor Organic Compounds or equivalent as defined by District Regulations 2-2-302.1 and 2-2-302.2. (Offsets, CEC)

Verification: At least thirty (30) days prior to the start of construction, the owner/operator must submit a copy of the required offset or emission reduction credit (ERCs) certificates to the CEC CPM.

AQ-42 Pursuant to BAAQMD Regulation 2, Rule 6, section 404.1, the owner/operator of the MEC shall submit an application to the BAAQMD for a major facility review permit within 12 months of the issuance of the PSD permit for the MEC. (Regulation 2-6-404.1)

Verification: The owner/operator shall notify the CEC CPM of the submittal of this application. In addition, the owner/operator shall submit to the CPM a copy of the Federal (Title V) Operating Permit within thirty (30) days after it is issued by the District.

AQ-43 Pursuant to 40 CFR Part 72.30(b)(2)(ii) of the Federal Acid Rain Program, the owner/operator of the Metcalf Energy Center shall submit an application for a Title IV operating permit to the BAAQMD. Operation of any of the gas turbines (S-1 & S-3) or HRSGs (S-2 & S-4) without a Title IV operating permit may not occur sooner than 24 months after the application is received by the BAAQMD. (Regulation 2, Rule 7)

Verification: At least twenty-four (24) months before the initial operation, the owner/operator shall submit to the CEC CPM a copy of the application for the Title IV operating permit.

AQ-44 The Metcalf Energy Center shall comply with the continuous emission monitoring requirements of 40 CFR Part 75. (Regulation 2, Rule 7)

Verification: At least sixty (60) days before the initial operation, the owner/operator shall submit to the CEC CPM a plan on how the measurements and recordings required by this Condition will be performed. Submittal of the reports will also provide verification of compliance with this Condition.

AQ-45 The owner/operator shall take monthly samples of the natural gas combusted at the MEC. The samples shall be analyzed for sulfur content using District-approved laboratory methods. The sulfur content test results shall be retained on site for a minimum of five (5) years from the test date and shall be utilized to satisfy the requirements of 40 CFR Part 60, subpart GG. (cumulative increase)

Verification: The owner/operator shall maintain on site the records of all the guarantees received from its natural gas suppliers indicating that the fuel delivered to the MEC complies with the 40 CFR Part 60, Subpart GG. These records shall be made available to the District or the CEC CPM upon request during on-site compliance inspections.

AQ-46 The cooling towers shall be properly installed and maintained to minimize drift losses. The cooling towers shall be equipped with high-efficiency mist eliminators with a maximum guaranteed drift rate of 0.0005%. The maximum total dissolved solids (TDS) measured at the base of the cooling towers or at the point of return to the wastewater facility shall not be higher than 5,438 ppmv (mg/l). The owner/operator shall sample the water at least once per day. (PSD)

Verification: At least thirty (30) days prior to installation, the owner/operator shall submit to the CEC CPM a performance guarantee letter from the cooling tower manufacturer. As part of the compliance record, the owner/operator shall keep records on-site on the TSC content of water in the cooling tower.

AQ-47 The owner/operator shall perform a visual inspection of the cooling tower drift eliminators at least once per calendar year, and repair or replace any drift eliminator components which are broken or missing. Prior to the initial operation of the Metcalf Energy Center, the owner/operator shall have the cooling tower vendor's field representative inspect the cooling tower drift eliminators and certify that the installation was performed in a satisfactory manner. Within sixty (60) days of the initial operation of the cooling tower, the owner/operator shall perform an initial performance source test to determine the PM10 emission rate from the cooling tower to verify compliance with the vendor-guaranteed drift rate specified in Condition 46. The CPM may, in years 5 and 15 of cooling tower operation, require the owner/operator to perform source tests to verify continued compliance with the vendor-guaranteed drift rate specified in Condition 46. (PSD)

Verification: As part of the monthly Air Quality Reports, the owner/operator shall indicate the date of any violation of this Condition including quantitative information on the severity of the violation.

For the purposes of the following Conditions, the following definitions apply:

(1) ACTIVE OPERATIONS shall mean any activity capable of generating fugitive dust including, but not limited to, earth-moving activities, construction/demolition activities, or heavy- and light-duty vehicular movement.

(2) CHEMICAL STABILIZERS mean any non-toxic chemical dust suppressant which must not be used if prohibited for use by the Regional Water Quality Control Boards, the California Air Resources Board, the U.S. Environmental Protection Agency (U.S. EPA), or any applicable law, rule or regulation; and should meet any specifications, criteria, or tests required by any federal, state, or local water agency. Unless otherwise indicated, the use of a non-toxic chemical stabilizer shall be of sufficient concentration and application frequency to maintain a stabilized surface.

(3) CONSTRUCTION / DEMOLITION ACTIVITIES are any on-site mechanical activities preparatory to or related to the building, alteration, rehabilitation, demolition or improvement of property including, but not limited to, the following activities; grading, excavation, loading, crushing, cutting, planing, shaping, or ground breaking.

(4) DISTURBED SURFACE AREA means a portion of the earth's surface which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed natural soil condition, thereby increasing the potential for emission of fugitive dust.

(5) DUST SUPPRESSANTS are water, hygroscopic materials, or non-toxic chemical stabilizers used as a treatment material to reduce fugitive dust emissions.

(6) EARTH-MOVING ACTIVITIES shall include, but not be limited to, grading, earth cutting and filling operations, loading or unloading of dirt or bulk materials, adding to or removing from open storage piles of bulk materials, landfill operations, or soil mulching.

(7) FUGITIVE DUST means any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of man.

(8) INACTIVE DISTURBED SURFACE AREA means any disturbed surface area upon which active operations have not occurred or are not expected to occur for a period of ten consecutive days.

(9) STABILIZED SURFACE means:
(A) any disturbed surface area or open storage pile which is resistant to wind-driven fugitive dust;
(B) any unpaved road surface in which any fugitive dust plume emanating from vehicular traffic does not exceed 20 percent opacity.

(10) VISIBLE ROADWAY DUST means any sand, soil, dirt, or other solid particulate matter which is visible upon paved road surfaces and which can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

AQ-48 The project owner shall implement a CEC CPM approved fugitive Dust Control Plan during the construction phase of the project.

The plan shall include the following:

1. A description of each of the active operation(s) which may result in the generation of fugitive dust;

2. An identification of all sources of fugitive dust (e.g., earth-moving, storage piles, vehicular traffic, etc.);

3. A description of the Best Available Fugitive Dust Control Measures (see Table 1 attached) to be applied to each of the sources of dust emissions identified above (including those required in **AQ-2** below). The description must be sufficiently detailed to demonstrate that the applicable best available control measure(s) will be utilized and/or installed during all periods of active operations;

4. In the event that there are special technical (e.g., non-economic) circumstances, including safety, which prevent the use of at least one of the required control measures for any of the sources identified, a justification statement must be provided to explain the reason(s) why the required control measures cannot be implemented.

Verification: Not later than sixty (60) days prior to the commencement of construction, the project owner shall submit the plan to the CEC CPM for review and approval. The project owner shall maintain daily records to document the specific actions taken pursuant to the plan. A summary of the monthly activities shall be submitted to the CPM via the Monthly Compliance Report.

AQ-49 During the construction phase of the project, the project owner shall:

1. Prevent or remove within one hour the track-out of bulk material onto public paved roadways as a result of their operations, or take at least one of the actions listed in Table 2 (attached) to prevent the track-out of bulk material onto public paved roadways as a result of their operations and remove such material at anytime track-out extends for a cumulative distance of greater than 50 feet on to any paved public road during active operations;

2. Install and use a track-out control device to prevent the track-out of bulk material from areas containing soils requiring corrective action (as currently identified in drawing no. 5-1 of the addendum dated February 12, 1999 to the Corrective Measures Study performed by the Mark Group for USS-POSCO Industries) to other areas within the project construction site and lay-down area;

3. Minimize fugitive particulate emissions from vehicular traffic on paved roads and paved parking lots on the construction site by vacuum mechanical sweeping or water flushing of the road surface to remove buildup of loose material. The project owner shall inspect on a daily basis

the conditions of the paved roads and parking lots to determine the need for mechanical sweeping or water flushing.

Verification: The project owner shall maintain a daily log during the construction phase of the project indicating: 1) the manner in which compliance with **AQ-2** is achieved; and 2) the date and time when the inspection of paved roads and parking lots occurs and the date and time(s) when the cleaning operation occurs. The logs shall be made available to the CEC CPM upon request.

AQ-50 At any time when fugitive dust from Metcalf Energy Center project construction is visible in the atmosphere beyond the property line, the project owner will identify the source of the fugitive dust and implement one or more of the appropriate control measures specified in Table 3 (attached)

Verification: The project owner will maintain a daily log recording the dates and times that measures in Table 3 (attached) have been implemented and make them available to the CEC CPM upon request.

TABLE 1
BEST AVAILABLE FUGITIVE DUST CONTROL MEASURES

FUGITIVE DUST SOURCE CATEGORY	**CONTROL ACTIONS**
Earth-moving (except construction cutting and filling areas, and mining operations)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the CEC CPM. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR
	For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.
Earth-moving: Construction fill areas:	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the CEC CPM. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the CEC CPM, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations.

TABLE 1 (Continued)

FUGITIVE DUST SOURCE CATEGORY	**CONTROL ACTIONS**
Earth-moving: Construction cut areas and mining operations:	Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.
Disturbed surface areas (except completed grading areas)	Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 percent of the unstabilized area.
Disturbed surface areas: Completed grading areas	Apply chemical stabilizers within five working days of grading completion; OR
	Take actions (3a) or (3c) specified for inactive disturbed surface areas.
Inactive disturbed surface areas	Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; OR
	Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR
	Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR
	Utilize any combination of control actions (3a), (3b), and (3c) such that, in total, these actions apply to all inactive disturbed surface areas.

TABLE 1 (Continued)

FUGITIVE DUST SOURCE CATEGORY	**CONTROL ACTIONS**
Unpaved Roads	Water all roads used for any vehicular traffic at least once per every two hours of active operations; OR
	Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; OR
	Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.
Open storage piles	Apply chemical stabilizers; OR
	Apply water to at least 80 percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR
	Install temporary coverings; OR
	Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile.
All Categories	Any other control measures approved by the CEC CPM as equivalent to the methods specified in Table 1 may be used.

TABLE 2
TRACK-OUT CONTROL OPTIONS

(1)	Pave or apply chemical stabilization at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface, and extending for a centerline distance of at least 100 feet and a width of at least 20 feet.
(2)	Pave from the point of intersection with the public paved road surface, and extending for a centerline distance of at least 25 feet and a width of at least 20 feet, and install a track-out control device immediately adjacent to the paved surface such that exiting vehicles do not travel on any unpaved road surface after passing through the track-out control device.
(3)	Any other control measures approved by the CEC CPM as equivalent to the methods specified in Table 2 may be used.

TABLE 3
CONTROL MEASURES FOR WIND CONDITIONS EXCEEDING 25 MPH

FUGITIVE DUST SOURCE CATEGORY	**CONTROL MEASURES**
Earth-moving	Cease all active operations; OR
	Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR
	Apply chemical stabilizers prior to wind event; OR
	Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR
	Take the actions specified in Table 1, Item (3c); OR
	Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	Apply chemical stabilizers prior to wind event; OR
	Apply water twice [once] per hour during active operation; OR
	Stop all vehicular traffic.
Open storage piles	Apply water twice [once] per hour; OR
	Install temporary coverings.
Paved road track-out	Cover all haul vehicles; OR
	Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.
All Categories	Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 may be used.

AQ-51 To fully mitigate PM_{10} emissions and prior to the start of construction, the Metcalf Energy Center owner/operator must surrender to the Bay Area Air Quality Management District valid ERC certificates for PM_{10} for the amount of

29.21 tons per year and for VOC for the amount of 124.2 tons per year from the following sources:

- Folgers Coffee in San Jose (Certificate # 413) for the amount of 7.7 tons/year of PM_{10} emissions;
- Frito Lay in San Jose (Certificate # 426) for the amount of 7.64 tons/year of PM_{10} emissions;
- Glorietta Food in San Jose (Certificate # 19) for the amount of 1.54 tons/year of PM_{10} emissions;
- Raisch Products in Mountainview (Certificate # 507) for the amount of 12.33 tons/year of PM_{10} emissions;
- Quebecor Facility in San Jose (Certificate # 625) for the amount of 124.2 tons/year of VOC emissions.

This portion of required PM_{10} ERCs and VOC ERCs and offsets are to be provided in addition to the requirements of Condition 41.

Verification: At least thirty (30) days prior to the start of construction, the project owner must submit a copy of the required ERC certificates to the CPM and the District.

AQ-52 The project owner shall ensure that all heavy earthmoving equipment including, but not limited to, bulldozers, backhoes, compactors, loaders, motor graders and trenchers, and cranes, dump trucks, and other heavy duty construction related trucks, have been properly maintained and the engines tuned to the engine manufacturer's specifications. The project owner shall also install oxidizing soot filters on all suitable construction equipment used either on the power plant construction site or associated linear construction sites. Suitability is to be determined by an independent California Licensed Mechanical Engineer who will stamp and submit for approval an initial and all subsequent Suitability Reports as necessary containing at a minimum the following:

Initial Suitability Report:

- The initial suitability report shall be submitted to the CPM for approval 60 days prior to breaking ground on the project site.
- A list of all fuel burning, construction related equipment used,
- a determination of the suitability of each piece of equipment to work appropriately with an oxidizing soot filter,
- if a piece of equipment is determined to be suitable, a statement by the independent California Licensed Mechanical Engineer that the oxidizing soot filter has been installed and is functioning properly, and
- if a piece of equipment is determined to be unsuitable, an explanation by the independent California Licensed Mechanical Engineer as to the cause of this determination.

Subsequent Suitability Reports:

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

Verification: The project owner shall submit to the CPM, via the Monthly Compliance Report, documentation which demonstrates that the contractor's heavy earthmoving equipment is properly maintained and the engines are tuned to the manufacturer's specifications. The project owner shall maintain all records on the site for six (6) months following the start of commercial operation. The project owner will submit to the CPM for approval the initial suitability report stamped by an independent California Licensed Mechanical Engineer, sixty (60) days prior to breaking ground on the project site. The project owner will submit to the CPM for approval, subsequent suitability reports as required, stamped by an independent California Licensed Mechanical Engineer no later than ten (10) working days following a change in the suitability status of any construction equipment.

AQ-53 The heat input to the fire pump diesel engine resulting from maintenance and testing activities shall not exceed 211 MM BTU totaled over any consecutive twelve month period. (TRMP)

Verification: As part of the monthly Air Quality Reports, the owner/operator shall indicate the date of any violation of this Condition including quantitative information on the severity of the violation.

AQ-54 The total hours of operation of the emergency generator shall not exceed 200 hours per calendar year, plus an additional 100 hours per calendar year for the purposes of maintenance and testing. (Regulation 2-1-114.2.3.1)

Verification: As part of the monthly Air Quality Reports, the owner/operator shall indicate the date of any violation of this Condition including quantitative information on the severity of the violation.

AQ-55 The project owner shall install an oxidation catalyst to control VOC emissions.

Verification: As part of the final design plans, specifications, and drawings, the project owner shall submit to the District and the CPM for review and approval the final selection and design details of the combustion equipment, including all emission control systems.

TABLE 1 (Continued)

FUGITIVE DUST SOURCE CATEGORY	**CONTROL ACTIONS**
Earth-moving: Construction cut areas and mining operations:	Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.
Disturbed surface areas (except completed grading areas)	Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 percent of the unstabilized area.
Disturbed surface areas: Completed grading areas	Apply chemical stabilizers within five working days of grading completion; OR
	Take actions (3a) or (3c) specified for inactive disturbed surface areas.
Inactive disturbed surface areas	Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; OR
	Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR
	Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR
	Utilize any combination of control actions (3a), (3b), and (3c) such that, in total, these actions apply to all inactive disturbed surface areas.

TABLE 1 (Continued)

FUGITIVE DUST SOURCE CATEGORY	**CONTROL ACTIONS**
Unpaved Roads	Water all roads used for any vehicular traffic at least once per every two hours of active operations; OR
	Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; OR
	Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.
Open storage piles	Apply chemical stabilizers; OR
	Apply water to at least 80 percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR
	Install temporary coverings; OR
	Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile.
All Categories	Any other control measures approved by the CEC CPM as equivalent to the methods specified in Table 1 may be used.

TABLE 2
TRACK-OUT CONTROL OPTIONS

(1)	Pave or apply chemical stabilization at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface, and extending for a centerline distance of at least 100 feet and a width of at least 20 feet.
(2)	Pave from the point of intersection with the public paved road surface, and extending for a centerline distance of at least 25 feet and a width of at least 20 feet, and install a track-out control device immediately adjacent to the paved surface such that exiting vehicles do not travel on any unpaved road surface after passing through the track-out control device.
(3)	Any other control measures approved by the CEC CPM as equivalent to the methods specified in Table 2 may be used.

TABLE 3
CONTROL MEASURES FOR WIND CONDITIONS EXCEEDING 25 MPH

FUGITIVE DUST SOURCE CATEGORY	**CONTROL MEASURES**
Earth-moving	Cease all active operations; OR
	Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR
	Apply chemical stabilizers prior to wind event; OR
	Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR
	Take the actions specified in Table 1, Item (3c); OR
	Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	Apply chemical stabilizers prior to wind event; OR
	Apply water twice [once] per hour during active operation; OR
	Stop all vehicular traffic.
Open storage piles	Apply water twice [once] per hour; OR
	Install temporary coverings.
Paved road track-out	Cover all haul vehicles; OR
	Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.
All Categories	Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 may be used.

AQ51. To fully mitigate PM10 emissions and prior to the start of construction, the Metcalf Energy Center owner/operator must surrender to the Bay Area Air Quality Management District valid ERC certificates for PM10 for the amount of 29.21 tons per year and for VOC for the amount of 124.2 tons per year from the following sources :

- Folgers Coffee in San Jose (Certificate # 413) for the amount of 7.7 tons/year of PM10 emissions;
- Frito Lay in San Jose (Certificate # 426) for the amount of 7.64 tons/year of PM10 emissions;
- Glorietta Food in San Jose (Certificate # 19) for the amount of 1.54 tons/year of PM10 emissions;
- Raisch Products in Mountainview (Certificate # 507) for the amount of 12.33 tons/year of PM10 emissions;
- Quebecor Facility in San Jose (Certificate # 625) for the amount of 124.2 tons/year of VOC emissions.

This portion of required PM10 ERCs and VOC ERCs and offsets are to be provided in addition to the requirements of condition 41.

Verification: At least 30 days prior to the start of construction, the project owner must submit a copy of the required ERC certificates to the CPM and the District.

AQ52. The project owner shall ensure that all heavy earthmoving equipment including, but not limited to, bulldozers, backhoes, compactors, loaders, motor graders and trenchers, and cranes, dump trucks and other heavy duty construction related trucks, have been properly maintained and the engines tuned to the engine manufacturer's specifications. The project owner shall also install oxidizing soot filters on all suitable construction equipment used either on the power plant construction site or associated linear construction sites. Suitability is to be determined by an independent California Licensed Mechanical Engineer who will stamp and submit for approval an initial and all subsequent Suitability Reports as necessary containing at a minimum the following:

Initial Suitability Report:

- The initial suitability report shall be submitted to the CPM for approval 60 days prior to breaking ground on the project site.
- A list of all fuel burning, construction related equipment used,
- a determination of the suitability of each piece of equipment to work appropriately with an oxidizing soot filter,
- if a piece of equipment is determined to be suitable, a statement by the independent California Licensed Mechanical Engineer that the oxidizing soot filter has been installed and is functioning properly, and
- if a piece of equipment is determined to be unsuitable, an explanation by the independent California Licensed Mechanical Engineer as to the cause of this determination.

Subsequent Suitability Reports:

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

Verification: The project owner shall submit to the CPM, via the Monthly Compliance Report, documentation, which demonstrates that the contractor's heavy earthmoving equipment is properly maintained and the engines are tuned to the manufacturer's specifications. The project owner shall maintain all records

on the site for six months following the start of commercial operation. The project owner will submit to the CPM for approval, the initial suitability report stamped by an independent California Licensed Mechanical Engineer, 60 days prior to breaking ground on the project site. The project owner will submit to the CPM for approval, subsequent suitability reports as required, stamped by an independent California Licensed Mechanical Engineer no later than 10 working day following a change in the suitability status of any construction equipment.

AQ53. The heat input to the fire pump diesel engine resulting from maintenance and testing activities shall not exceed 211 MM BTU totaled over any consecutive twelve month period. (TRMP)

Verification: As part of the monthly Air Quality Reports, the owner/operator shall indicate the date of any violation of this Condition including quantitative information on the severity of the violation.

AQ54. The total hours of operation of the emergency generator shall not exceed 200 hours per calendar year, plus an additional 100 hours per calendar year for the purposes of maintenance and testing. (Regulation 2-1-114.2.3.1)

Verification: As part of the monthly Air Quality Reports, the owner/operator shall indicate the date of any violation of this Condition including quantitative information on the severity of the violation.

B. PUBLIC HEALTH

The public health analysis supplements the previous discussion on air quality and examines potential public health effects from project emissions of toxic air contaminants. In this analysis, we consider whether such emissions will result in significant adverse public health impacts that violate standards for public health protection.[41]

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.[42] In the absence of adopted standards, state and federal regulatory programs have developed a health risk assessment procedure to evaluate potential health effects from TAC emissions.[43] 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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[41] This Decision also addresses potential public health concerns in other 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 **Soils and Water Resources** section. Hazardous and non-hazardous wastes are described in **Waste Management**.

[42] 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.

[43] The health risk assessment protocol is set forth in the Air Toxics "Hot Spot" Program Risk Assessment Guidelines developed by the California Air Pollution Control Officers Association (CAPCOA) pursuant to the Air Toxics "Hot Spots" Information and Assessment Act (Health and Safety Code, § 44360 et seq.).

1. Health Risk Assessment

Applicant performed a health risk assessment that was reviewed by Staff and the Air District. Applicant's risk assessment employed scientifically accepted methodology that is consistent with the California Air Polution Control Officer's Association (CAPCOA) Guidelines and with methods developed by the California Office of Environmental Health Hazard Assessment (OEHHA). This approach emphasizes a worst-case "screening" analysis to evaluate the highest level of potential impact. (Ex. 7, pp. 81-82.) The analysis included the following steps:

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

The evidence shows that, subsequent to identifying the locations of maximum impact, a multi-pathway analysis was performed for the maximum impact and sensitive receptor locations. The multi-pathway analysis included the inhalation pathway, dermal (skin) absorption, ingestion of soil with deposited pollutants, and exposure to pollutants potentially in mother's milk. (Ex. 7, pp. 81-84.)

The risk assessment addresses three categories of health impacts: acute (short-term); chronic (long-term); and carcinogenic adverse health effects. Regulatory agencies use the hazard index method to assess the likelihood of acute or chronic non-cancer effects. In this approach, a hazard index is a numerical representation of the likelihood of significant health impacts at the reference exposure levels (RELs) expected for the source in question. After calculating the

hazard indices for the individual pollutants,[44] 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.

Potential cancer risk is calculated by multiplying the exposure estimate by the potency factors for the individual carcinogens involved.[45] The exposure estimate is based on a worst-case scenario, which assumes a maximally exposed individual (MEI) at the point of highest toxicity 24 hours a day, 365 days a year over a 70-year period. The greatest true exposure is likely to be at least 10 times lower than that calculated using the MEI assumption since no real person would be in the same spot for 70 years. (Ex. 7, pp. 82-85.) Further, annual emissions are calculated assuming simultaneous operation of both turbines at 100 percent load, which will not always occur under real operating conditions. Given the conservative approach taken in making these calculations, the numerical estimates are designed to represent the upper bounds of cancer risk. Staff considers a potential cancer risk of one in one million as the level of significance.[46]

2. Potential Impacts

Sensitive receptors are located within a 3-mile radius of the site. The nearest residence is on the west side of Monterey Road, about 1,150 feet away (south-southeast of the proposed site). On the east side of Monterey Road, there is a residence about 2,050 feet away. A residential area is located about three-

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

[45] The following noncriteria pollutants were considered with regard to possible cancer risk: acetaldehyde, benzene, 1,3 butadiene, formaldehyde, PAHs, and propylene oxide.

[46] Various state and federal agencies specify different cancer risk significance levels. Under the Air Toxics "Hot Spots" and the Proposition 65 programs, for example, a risk of 10 in a million is considered significant and used as a threshold for public notification.

quarters of a mile to the northwest. The nearest schools are located about 1.1 miles to the west northwest and 1.4 miles to the southeast. The planned campus industrial development will also contain a day-care center located within these distances.

Construction Phase. The construction phase of the MEC is expected to take approximately 18-24 months. Impacts during this phase can occur from human exposure to the windblown dust from site grading and other construction-related activities, and emissions from the heavy equipment and vehicles used for such construction.[47] (Ex. 7, pp. 90-91.)

The evidence establishes that no significant public health effects are expected during construction since construction-related emissions are temporary and localized. All predicted maximum concentrations of pollutants from construction vehicles and equipment will occur at locations along the immediate property boundary. As discussed in the **Air Quality** section, these impacts will be appropriately minimized.

Operations Phase. TACs emitted in combustion byproducts from the project's exhaust stacks have the potential to cause adverse health effects. Exhibit 5, Table 3.1-5, lists noncriteria pollutants that may be emitted from the MEC's turbines as combustion byproducts, along with their anticipated amounts (emission factors). Exhibit 1, Tables 8.6-2 and PH-63-1, list toxicity values used to characterize cancer and noncancer health impacts from project pollutants.[48]

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[47] Since no hazardous substances were identified from the Environmental Site Assessment for the project, any health impacts from dust exposure would result only from the physical presence of the inhaled PM_{10} fraction, without additional toxicity from toxicants that could have been absorbed onto them. The procedures for mitigating these short-term PM_{10} emissions are addressed in the **Air Quality** section.

[48] The toxicity values include reference exposure levels, which are used to calculate short-term and long-term noncancer health effects, and cancer unit risks, which are used to calculate the lifetime risk of developing cancer, as published in the CAPCOA Guidelines (CAPCOA 1993).

The following two Tables identify noncriteria pollutants that may be emitted from the project, and which were considered in the HRA. These Tables depict potential health risks as a result of a multi-pathway analysis and the category of the risk, but do not indicate that such effects will actually occur as a result of project emissions. They form a basis upon which the actual risk assessment is performed. PUBLIC HEALTH Table 1 lists combustion-related toxic emissions and shows how each contributes to the health risk analysis.[49]

PUBLIC HEALTH Table 1
Types of Health Impacts and Exposure Routes Attributed to Combustion-Related Toxic Emissions

Substance	Oral Cancer	Oral Noncancer	Inhalation Cancer	Noncancer (Chronic)	Noncancer (Acute)
Acetaldehyde			✓	✓	
Acrolein				✓	✓
Ammonia				✓	✓
Benzene			✓	✓	
1,3-Butadiene			✓		
Formaldehyde			✓	✓	✓
Napthalene		✓		✓	
PAHs	✓		✓		
Propylene oxide			✓	✓	✓
Toluene				✓	
Xylene				✓	✓

Source: Exhibit 1, Table 8.1-18.

Noncriteria emissions may also originate from contaminants in the cooling source water that become entrained in water droplets emitted as cooling tower drift. The MEC will use treated wastewater from the SBWR for cooling. PUBLIC HEALTH

[49] For example, the first row shows that oral exposure to acetaldehyde is not of concern but, if inhaled, may have cancer and chronic (long-term) noncancer health effects, but not acute (short-term) effects.

Table 2 lists these substances and shows how each contributes to the health risk analysis.

PUBLIC HEALTH Table 2
Types of Health Impacts and Exposure Routes
Attributed to Cooling Tower Emissions

Substance	Oral Cancer	Oral Noncancer	Inhalation Cancer	Chronic Noncancer	Acute Noncancer
Ammonia				✓	✓
Arsenic	✓	✓	✓	✓	
Cadmium		✓	✓	✓	
Copper				✓	
Lead		✓	✓	✓	
Mercury		✓			✓
Nickel			✓	✓	✓
Zinc				✓	

Source: Exhibit 1, Table 8.1A-3.

In addition to the substances identified above, there has been public concern that viruses and bacteria could remain in treated wastewater, and that they could be released to the atmosphere in the cooling tower drift at levels that could affect public health.

The California Department of Health Services (DHS) is proposing to regulate the use of recycled water in cooling towers under Title 22 of the California Code of Regulations (proposed section 60306). When recycled water is used in a cooling tower that creates a mist, the regulations would require the following:

- The recycled water used must be disinfected tertiary recycled water (DTRW).
- A drift eliminator shall be used whenever the cooling system is in operation.
- A chlorine, or other biocide, shall be used to treat the recirculating water to minimize the growth of *Legionella* and other micro-organisms.

The SBWR water would be provided by the San Jose/Santa Clara Water Pollution Control Plant (WPCP), an advanced tertiary treatment facility which produces water treated to the proposed Title 22 standards for unrestricted use. Reclaimed water from the WPCP is subject to regulatory limits for the above substances, which are set by the San Francisco Bay Regional Water Quality Control Board. In addition, monitoring requirements are also established.

Water from the WPCP is disinfected using chlorine to reduce pathogenic organisms. The MEC will employ additional routine water treatment with chlorine to minimize bacterial growth, corrosion, and formation of mineral scale. The MEC will also use an automated chemical feed system to supply conditioning chemicals (sulfuric acid, organic phosphate, and sodium hypochlorite) to the cooling water. This system will continuously monitor several water parameters and provide real time data to the plant operators, as well as alarm enunciation if specified levels are exceeded. Such routine water treatment also serves to minimize conditions which are conducive to the growth of pathogenic organisms such as *Legionella* bacteria. (Ex. 7, p. 95.) The evidence thus indicates that disinfection byproduct formation associated with the use of reclaimed water is not a significant health issue. (Ex. 7, pp. 93-95.)

The MEC project will use high-efficiency drift eliminators which limit the amount of drift loss to approximately 0.0005 percent of the circulating water rate, resulting in a drift rate of about 0.7 gallon per minute.[50] The drift eliminators must be properly installed and maintained in order to achieve efficient operation over the life of the facility. Following installation, proper maintenance includes periodic inspection and repair or replacement of any components found to be

[50] This amount of water lost as liquid from the cooling towers is in contrast to the amount of water evaporated as steam, estimated to be from 1,500 to 2,500 gallons per minute, depending on ambient temperatures. Steam emitted from the cooling towers is distilled water, and will not contain contaminants.

broken or missing. Condition of Certification **PUBLIC HEALTH-1** requires the inspection and maintenance of the drift eliminators.

Health Risk from Power Plant Emissions. Applicant calculated a *chronic* non-cancer hazard index of 0.06 (Significance Level = 1.0) for the maximum impact location for all toxic endpoints, assuming SCR for NO_x control. Applicant also calculated an *acute* non-cancer hazard index of 0.33 (Significance Level = 1.0) for the same maximum impact location using the SCR system. Cancer risk was calculated as 0.20 in one million, well below the significance level of 1 in one million. (Ex. 7, pp. 98-99.)

Staff reviewed Applicant's Health Risk Assessment and concurred with its conclusions. (Ex. 7, pp. 95-100.) The BAAQMD also reviewed the Applicant's assessment and found it to be in accordance with adopted Guidelines. (Ex. 7, p. 100; Ex. 141, pp. 21-22.) STCAG's witness testified that Applicant's Health Risk Assessment is inadequate, underestimates risks to the public, and does not conform with various protective guidelines. This witness believes the public health risks associated with the MEC are not acceptable. (3/20/01 RT 60-63; Ex. 153.)

Acrolein. Acrolein is a common byproduct of combustion which, in the case of the MEC, would result from the combustion of natural gas. Acrolein is defined as a toxic, colorless mobile aldehyde with acrid odor and irritating vapors.[51] It is one of a number of chemical substances that were addressed by the Applicant in its health risk assessment.[52] Acrolein is an identified TAC and, at sufficiently high levels, can result in breathing difficulties and mortality. The testimony demonstrates that 97 percent of the acute health risk for the MEC is made up of acrolein. (2/28/01 RT 83.) However, until recently, this substance was not

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[51] Webster's' Third New International Dictionary, unabridged, 1971.

[52] Other chemical substances include acetaldehyde, benzene, formaldehyde, toluene, and xylene. (Ex. 1, p. 8.6-1.)

thought to be emitted by gas-fired combustion in amounts large enough to be considered significant as determined by health risk assessments.

This changed in 2000, when OEHHA established a new, much lower acrolein REL for eye irritation. (2/28/01 RT 55.) The new REL has the effect of elevating the hazard index for TACs that pose acute health effects. The analysis of acrolein impacts is further complicated by the fact that, in April of 2000, the California Air Resources Board (CARB) issued an advisory recommending against the use of emission factors that are based on tests using CARB Method 430, the previously approved testing method for acrolein.

Applicant's witnesses testified that, by including the Conditions of Certification proposed by Staff, all potential health risks will be mitigated to a level of less than significance. (Ex. 134, p. 17.) The testimony describes the four-step process for the health risk assessment (HRA) performed by Applicant. The methodology is based on guidelines developed by the CAPCOA, in collaboration with CARB and OEHHA, and is consistent with the methods developed by USEPA. (2/28/01 RT 47.) The testimony further indicates that the assumptions used in Applicant's analysis were extremely conservative, resulting in conclusions that substantially overstate the risks associated with emissions from the facility. (2/28/01 RT 47-48.)

To supplement its HRA and in response to data requests from CVRP, Applicant performed a series of tests on emissions samples taken at a Calpine facility in Pasadena, Texas in order to determine likely acrolein emissions from the MEC. Since CARB had previously issued a recommendation against the use of Method 430, Calpine developed new test methods in consultation with Air Toxics Ltd. (ATL). Applicant's witnesses testified that ATL was selected to help develop the acrolein testing method precisely because it was an ATL scientist who had originally identified and publicized the problem with CARB's Method 430 for testing acrolein. (Ex. 138, p. 1.)

Using "Summa canisters", emissions sampling data was taken at the Texas facility on turbines operating at 70 percent and 100 percent of load. The 70 percent level was analyzed for "low-load" emissions.[53] (2/28/01 RT 91.) Using its own methodology and most of the emission stack samples, Applicant determined that the health hazard index for acrolein at the MEC is likely to be 0.8 or 0.9. (2/28/01 RT 83.) BAAQMD treats a health hazard index of 1.0 as a "bright line" below which the risk from acrolein is insignificant. At indexes greater than one, the agency will exercise its judgment regarding whether a significant risk exists. (3/1/01 RT 299-300.)

Applicant's witness further testified that one of the acrolein samples was eliminated, based on a determination that it was either contaminated or otherwise invalid. (2/28/01 RT 110.) The witness based this determination upon a comparison of the excluded high-level acrolein sample with other measured constituents of acetaldehyde and formaldehyde. Since the other elements did not have comparable increased levels, the "outlier" sample was eliminated from the analysis. (2/28/01 RT110-113.) The witness opined that it is appropriate to eliminate outlier data so long as a rationale is provided, the data is disclosed to the regulatory agency, and the agency can evaluate the reasonableness of the conclusion. (2/28/01 RT 114-115.)

In response to concerns regarding higher emissions during startup and shutdown periods, Applicant's witness testified that the 832 hours per year during which the MEC is allowed to be in startup or shutdown mode is within the general range of that allowed for other power plants previously licensed by the Commission (2/28/01 RT 28; Ex. 134, p. 9, Table 2.) All air quality analysis done for the MEC

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[53] One of Applicant's witnesses acknowledged that these tests do not reflect startup conditions, but testified that it is not possible to accurately test for acrolein during startup. (2/28/01 RT 126.) In this witness' opinion, even if turbines are kept in a "hold" state during startup, emissions for acrolein are likely to be too low to be accurately measured during the startup transition. (2/28/01 RT 129-130.)

reflect this frequency of startup and shutdowns. The witness concluded that the data show the project will be safe at anytime under all weather conditions and at all locations. (2/28/01 RT 28.) Applicant's health risk analyst concluded that there will be no significant increases in human health risks from facility emissions. (2/28/01 RT 42.)

Staff's witness relied upon the HRA conducted by Applicant. (3/1/01 RT 285.) This witness explained the many layers of conservatism involved in conducting an HRA (3/1/01 RT 63), and stated that the REL for acrolein was based on the relatively mild health impact of eye irritation. The REL was then divided by 6 to account for testing errors, and then further divided by a safety factor of 10 to account for sensitive individuals. (3/1/01 RT 63-64.) In addition, the witness noted that the maximum modeled impacts for the project's emissions were on uninhabited hilltops and at night, thus reducing human exposure and adding to the conservatism of the analysis. (3/1/01 RT 66.) The Staff witness concluded that the MEC would cause no significant impact related to public health from all TACs, including acrolein. (Ex. 7, p. 103.)

CVRP took the position that the HRA conducted by Applicant does not accurately account for acrolein emissions from the MEC's gas turbines. (Ex. 145.) CVRP contended that acrolein emissions are higher during startup and low-load operation than at full-load operation because of less complete fuel combustion. (Ex. 145, pp. 2-15.) The CVRP witness testified that, based on extrapolations from established data, the emission factors for acrolein are approximately 20 times greater during startup than at full-load operations. (3/2/01 RT 17.) As a result, CVRP contends that acrolein emissions from the MEC will pose a significant health hazard if not further mitigated.[54] (Ex. 145.)

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[54] In addition to contending that Applicant's tests for acrolein do not reflect startup turbine emissions, CVRP states that the acrolein source tests submitted by Applicant were measured with a method not approved by CARB or EPA and that certain source test samples were discarded improperly. (Ex. 145, pp. 3-8.)

CVRP also takes issue with Applicant's position that low-load conditions cannot be measured. In fact, during cross-examination, Applicant's witness acknowledged that it is possible to measure emissions at a steady-state load as low as 25 percent. (2/28/01 RT 128.) CVRP argues that a supporting study, though it did not test for acrolein, does accurately demonstrate that turbine emissions are elevated during startup.[55] (CVRP Opening Brief on Group 3 Topics (April 12, 2001), p. 10, fn. 13.)

CVRP further contends that Applicant severely underestimated the level of toxic emissions by excluding the acrolein sample with the highest concentration. CVRP notes that one of Applicant's witnesses acknowledged that, if the high sample had been included, the Applicant's stated health hazard index of .8 or .9 would jump to 3.8 or 4.3, far exceeding the significance threshold. (2/28/01 RT 86-87.) CVRP challenged Applicant's other witness on this topic for excluding the high acrolein sample, noting that both the firm which took the sample and the lab which analyzed it confirmed that the sample was valid and without contamination. (2/28/01 RT 108-109; Ex 129.)

CVRP's attack on Applicant's methodology is based, in part, on the use of Summa canisters to gather emission samples. EPA or other regulatory agencies do not approve use of these canisters since moisture in the high-temperature exhaust-gas samples tends to condense as it cools. Because acrolein is water soluble, it can dissolve in the condensed water and thus not be measurable in the sample. (2/28/01 RT 148-149; Ex. 145, p. 6.) EPA has expressed "qualms" regarding the use of Summa canisters for acrolein emissions. (2/28/01 RT 142.) In addition, ATL was reluctant to use canisters for exhaust-gas sampling for acrolein. (2/28/01 RT 143.)

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[55] In its proposed Condition of Certification **AQ-21** Staff seems to acknowledge the fact of high emission rates during startup by allowing higher startup emissions for NO_2, CO, and POCs. (Ex. 7, p. 61.)

CVRP's witness testified that he applied emission factors which more accurately reflect turbine emissions during startup conditions, i.e. at about 25 percent load. (3/2/01 RT 21-22.) This analysis used all emission samples taken by Applicant, without discarding ones that exceeded certain averaging times or which Applicant omitted as excessively high. CVRP's analysis revealed that the health hazard index (HHI) for acrolein emissions during startup conditions would, in some neighborhoods near the MEC, be 40 to 80 times the health hazard index threshold. (3/2/01 RT 22.) At the nearest school, located approximately 1.4 miles from the MEC, the witness estimated an HHI for acrolein on the order of 50. (3/2/01 RT 23; Ex. 145, p. 41, Fig. 7.)

To mitigate what it characterizes as significant public health impacts due the project's acrolein emissions, CVRP asks that the MEC be required to install an oxidizing catalyst or, in the alternative, limit the number of startups. (Ex. 145, p. 14.) An oxidizing catalyst would reduce acrolein emissions by oxidizing various VOCs, thus reducing concentrations by 70 to 90 percent. (3/2/01 RT 25.) It would reduce over 90 percent of TACs and carbon monoxide emitted by the MEC, and consequently reduce health impacts from acrolein to below significant levels. (3/2/01 RT 51-52; Ex. 145, pp. 14-15.) The evidence establishes that the oxidation catalyst is technically feasible.[56] (Ex. 145.)

We have closely considered the evidence regarding the MEC's likely emissions of acrolein. Notwithstanding the many layers of conservatism which the evidence demonstrates have been built into establishing the health hazard index for acrolein, we remain concerned that, without additional mitigation, the project is likely to release unacceptable levels of this toxic substance.

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[56] CVRP points out that oxidizing catalysts have been required by the Commission for other projects including Elk Hills (Docket No. 98-AFC-1), Sunrise (Docket No. 98-AFC-4), Three Mountain Power (Docket No. 99-AFC-2), and La Paloma (Docket No. 98-AFC-2). CVRP further notes that Staff originally recommended requiring that the MEC use an oxidizing catalyst to control VOCs (Preliminary Staff Assessment at page 41).

We believe that Applicant's testing methods have likely underestimated the impacts of acrolein emissions. First, Applicant has not based its health risk assessment on any startup or low-load conditions. We are not persuaded to adopt CVRP's specific estimates for worst-case impacts that result from the low-load emissions extrapolations. Nevertheless, while not adequately quantified in the record, the evidence is undisputed that turbine combustion is less efficient during startup than at full load. Applicant's analysis (based on 70-percent load) does not adequately account for this inefficiency. Since the project is permitted to be in a startup mode for over 800 hours annually, the effects of the resulting inefficient combustion are not inconsiderable.

Furthermore, we are concerned by the exclusion of the highest acrolein sample from the analysis. The evidence demonstrates that no contamination of the sample occurred. The fact that the acrolein level of the discarded sample appeared to be an "outlier" does not justify its exclusion. By including the excluded sample, the health hazard index for acrolein increases four-fold. In our view, the failure to include startup emissions and the questionable exclusion of the outlier sample raise a reasonable possibility that Applicant has substantially underestimated actual acrolein emissions.

We believe an extra degree of conservatism is required in the present case, due to the MEC's location in an urban area with an approved adjoining campus industrial complex and daycare center. Therefore, to ensure an adequate reduction of acrolein emissions, we have added Condition of Certification **AQ-55** to require installation of an oxidation catalyst at the MEC:

> **AQ-55** The project owner shall install an oxidation catalyst to control VOC emissions.
>
> **Verification:** As part of its final design plans, specifications, and drawings, the project owner shall submit to the District and the CPM for review and approval the final selection and design details of combustion equipment, including emission systems.

Applicant and Staff shall address, in their respective comments on the PMPD, whether this Condition necessitates changes to Condition **AQ-23** and, if so, submit such proposed changes.

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.

The maximum cancer risk for the MEC facility is 0.2 in one million, about 0.5 mile northwest of the proposed site, while the maximum risk from the diesel fire pump is 4.3 in one million, on the southern edge of the facility property line. As noted above, maximum risk from both sources is 0.91 in one million at the nearest residence. (Ex. 7, pp. 99-100.)

These maximum impacts occur where pollutant concentrations from the MEC would theoretically be the highest. Even at this location, the evidence does not establish that there is any significant change in lifetime risk to any person, and the increase does not represent any real contribution to the ambient risk of 194 in one million.[57] Modeled facility-related risks are lower at all other locations, and actual risks are expected to be much lower, since worst-case estimates are based on conservative assumptions, and overstate the true magnitude of the risk expected. Therefore, the incremental impact of the additional risk posed by the MEC does not appear to be either significant or cumulatively considerable.

[57] In comparison, BAAQMD estimated the Bay area average lifetime cancer risk for inhalation of ambient air to be 199 in one million based on 1998 ambient average toxic concentration data.

With the acrolein emissions mitigated by the oxidation catalyst, the worst-case long-term health impact from MEC (0.06 hazard index) is well below the significance level of 1.0 at the location of maximum impact. As with cancer risk, the long-term hazard would be lower at all other locations and cumulative impacts at other locations would also be less than significant.

BAAQMD also examined the issue of cumulative impacts from facilities affecting the same neighborhood. The District concluded that elevated concentrations of toxic air contaminants from stationary sources tend to be quite localized, and that cumulative risks are likely to occur only when multiple facilities with substantial low-level emissions are immediately adjacent, or very close, to one another.

Even in the unlikely event that worst-case emissions from an existing facility were to coincide both geographically and temporally with the MEC's emissions at the location of maximum impact, the overall long-term health outlook would not change for anyone. Thus, the MEC project will not result in any significant cumulative cancer or chronic noncancer health impacts.

FINDINGS AND CONCLUSIONS

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

1. Operation of the MEC will result in the routine release of criteria and noncriteria pollutants that have the potential to adversely impact public health.

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

3. There are sensitive receptors within a three-mile radius of the project site.

4. Applicant performed a health risk assessment, using well-established scientific protocol, to analyze potential adverse health effects of noncriteria pollutants emitted by the MEC.

5. The point of maximum impact for toxic contaminant dispersion is located about 0.5 mile from the site.

6. With the implementation of the Conditions of Certification, acute and chronic non-cancer health risks from project construction and operation emissions, including from the cooling tower, are insignificant.

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

8. Project emissions will not significantly contribute to adverse cumulative public health impacts.

9. With the acrolein emissions mitigated by the oxidation catalyst, the construction and operation of the proposed natural gas-fired project will not pose a significant public health risk.

10. Implementation of the Conditions of Certification reasonably ensure that the MEC will be constructed and operated in conformity with the applicable laws, ordinances, regulations, and standards reflected in the appropriate portion of Appendix A of this Decision.

We therefore conclude that, with the implementation of the Conditions of Certification, project emissions of noncriteria pollutants do not pose a significant direct, indirect, or cumulative adverse public health risk.

CONDITION OF CERTIFICATION

PUBLIC HEALTH-1 The project owner shall perform a visual inspection of the cooling tower drift eliminators once per calendar year, and repair or replace any drift eliminator components which are broken or missing. Prior to initial operation of the project, the project owner shall have the cooling tower vendor's field representative inspect the cooling tower drift eliminator and certify that the installation was performed in a satisfactory manner. The CPM may, in years 5 and 15 of project operation, require the project owner to perform a source test of the PM_{10} emissions rate from the cooling tower to verify continued compliance with the vendor guaranteed drift rate.

Verification: The project owner shall include the results of the annual inspection of the cooling tower drift eliminators and a description of any repairs performed in the next required annual compliance report. The initial compliance report will include a copy of the cooling tower vendor's field representative's inspection report of the drift eliminator installation. If the CPM requires a source test as specified in Condition **Public Health-1**, the project owner shall submit to the CPM for approval a detailed source test procedure sixty (60) days prior to the test. The project owner shall incorporate the CPM's comments, conduct testing, and submit test results to the CPM within sixty (60) days following the tests.

C. WORKER SAFETY AND FIRE PROTECTION

Industrial workers are exposed to potential health and safety hazards on a daily basis. This analysis assesses whether the Applicant's proposed health and safety plans adequately address worker safety during the project's construction and operation phases. Specifically, we examine whether the measures to be contained in the health and safety plans will comply with applicable laws, ordinances, regulations, and standards designed to protect industrial workers.

During the evidentiary hearings, it became apparent that much community concern, and a degree of analytic overlap, existed between this topic area and that of "Hazardous Materials Handling," specifically regarding the adequacy of the response time of the San Jose Fire Department's Hazardous Incident Team (HIT Unit). This issue was, with the agreement of all participating parties, deferred to the discussion concerning the handling and management of hazardous materials. (1/8/01 RT 279.) We follow a similar convention here.

SUMMARY AND DISCUSSION OF THE EVIDENCE

Industrial workers at MEC will operate process equipment, and may face other workplace hazards that can result in accidents, serious injury, or even death. The worker safety and fire protection measures for this project are designed to either eliminate or minimize such hazards through special training, protective equipment, or procedural controls.

The evidence establishes that the features of the proposed project, in association with the proposed worker safety plans and procedures, will comply with applicable laws, ordinances, regulations, and standards, and minimize the exposure of workers to industrial accidents or hazards. (Ex. 6A; Ex. 7, p. 113.)

a. Fire Protection

The project will rely on both on-site fire protection systems and the San Jose Fire Department's fire protection services.

The project's on-site fire protection system will be adequate for fighting incipient (small) fires. This system will include fire alarms, detection systems, fire hydrants, a dedicated water supply, and hose stations throughout the facility. Fixed fire suppression systems will be installed at pre-determined fire risk areas such as the transformers, turbine lubrication oil equipment, and cooling tower. The facility's fire mains will also supply a vapor suppression system at the aqueous ammonia storage tank area. The system will be designed and operated in accordance with National Fire Protection Association (NFPA) standards and recommendations. Sprinkler systems will be installed in the Control/Administration Building and Fire Pump Building, as required by NFPA requirements. Hand-held fire extinguishers will be located in accordance with NFPA standards throughout the facility. All Fire Department access roads, water mains, and fire hydrants shall be installed and operational during construction in accordance with Article 87 of the Fire Code. A final inspection by the San Jose Fire Department will be required to confirm that the facility meets all the Fire and Building Code requirements, as a condition of the Building Permit. (Ex. 6A, p. 29; Ex. 7, p. 118.)

A major fire or emergency rescue would require the services of the San Jose Fire Department. The existing stations, response times, equipment, and personnel are depicted on TABLE 1 below:

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

Station	Response time	Equipment[1] (personnel per vehicle listed in parenthesis)	Number of Firefighters
Station 27 239 Bernal Road near Santa Teresa Park (408) 277-8900	Approximately 7 minutes	1 – Type 1 Engine (4) 1 – Type 4 Brush Patrol	4
Station 12 502 Calero Avenue San Jose (408) 277-4612	Approximately 12 minutes	1 – Type 1 Engine (4) 1 – Type 4 Brush Patrol	4
Station 18 Intersection of Monterey Road and Skyway Avenue (408) 277-4618	Approximately 12-15 minutes	1 – Type 1 Engine (4) 1 – Fire Truck (5) 1 – Light Unit 1 – Water Tender	9
Station 29 199 Innovation Drive (408) 277-4629	Greater than 30 minutes	1 – Type 1 Engine (4) 1 – Fire Truck (5) 1 – HIT Unit (4)	14

Following is a general description of the listed response equipment:

- The Fire Engine is a primary response unit. It has a 600 gallon water tank, a minimum of 1,500 gallon per minute (gpm) pump, 2,400 feet of hose, and an advance life support (ALS) medical response unit.
- Fire Trucks are also primary response units, and have a 500-gallon water tank, a 1,250-gpm pump, 1,000 feet of hose, and an aerial ladder with stream capability of 1000 gpm.
- Brush Patrol is primarily used for fighting wild fires such grass fires. Each consists of a 265-gallon water tank, 150 gpm-water pump, and comes with 4-wheel drive.
- Water Tender has a 1,250-gallon water supply, a 500-gpm pump, and an auxiliary 2,000-gallon folding tank.
- Light Unit consists of a 20 kw generator and lighting capability for night operations and for use with rescue equipment on fire truck.

Source: Exhibit 7, p. 117.

The nearest stations are Station 27 (7 minutes away) and Station 12 (12 minutes away). (Ex. 7, p. 118.) The response times from these stations do not meet that deemed acceptable by the City of San Jose Fire Department (i.e., 4 to 6 minutes; Ex. 7, pp. 118-119.) According to the San Jose Fire Department, development of the MEC project would initiate the need for a new fire station and staffing, with a minimum of one engine and truck company. The MEC project will also require additional water main distribution lines, public water lines, public (off-site) and private (on-site) fire hydrants, and other improvements required pursuant to the Uniform Fire Code.[58] (Ex. 7, p. 119.) Additionally, planned development of the proposed business complex on the nearby 400-acre portion of land in the North Coyote Valley Campus industrial area will accommodate 20,000 additional jobs and also require additional infrastructure development.

In order to address these concerns, we have adopted the Staff's recommended approach that the costs for building and staffing a new station and supplying associated equipment be shared among all project owners who are planning development in the North Coyote Valley. The City of San Jose has expressed a desire to take the lead in this regard, and has proposed to establish a community Facilities District to assess fees on area development. (Ex. 7, p. 119.) Condition of Certification **WORKER SAFETY–3** assures that the MEC will be obligated to contribute its proportionate share to mitigate the project's impacts associated with fire protection.[59]

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[58] The testimony indicates that, insofar as a water supply for fire protection is concerned, the project will be required to have on-site storage as well as access to water from wells and/or the water purveyor. (1/18/01 RT 83-84, 321.)

[59] The City of San Jose apparently believes this mitigation is overly vague. (See City of San Jose, Group 1& 2 Opening Brief (March 23, 2001), p. 16; Reply Brief (April 9, 2001), p. 4.) We note, however, that the measure meets the "nexus" and "rough proportionality" requirements of case law and the CEQA guidelines. [See also, 20 Cal. Code of Regs., secs. 15041 (a), 15126.4 (a)(4).] These requirements could arguably be violated were we to require, e.g., the construction of a fire station solely because of the MEC project. Moreover, the City has a primary role in implementing the Condition and should therefore have adequate input on the issue.

b. Worker Safety

During construction and operation of the MEC facilities, there is the potential for both incipient fires, accidental releases of flammable gasses or liquids, or emergency response incidents. Electrical sparks, combustion of fuel oil, natural gas or flammable liquids, and over-heated equipment may cause incipient fires. Although unlikely, larger fires could develop from uncontrolled incipient fires. It is therefore important that there be well-defined policies and procedures, training, and hazard recognition and control at the facility to minimize such hazards and protect workers. (Ex. 7, p. 119.)

The "Construction Safety and Health Program" and the "Operation Safety and Health Program" are intended to protect workers. Construction Safety Orders are published at Title 8 of the California Code of Regulations beginning with section 1502 (8 CCR, § 1502, et seq.). These requirements are promulgated by Cal/OSHA and are applicable to the construction phase of the project. The Construction Safety and Health Program will include a Construction Injury and Illness Prevention Program (8 CCR, § 1509), Construction Fire Protection and Prevention Plan (8 CCR, § 1920), and Personal Protective Equipment Program (8 CCR, §§ 1514-1522). Additional programs are set forth under General Industry Safety Orders (8 CCR, §§ 3200-6184), Electrical Safety Orders (8 CCR, §§ 2299-2974), and Unfired Pressure Vessel Safety Orders (8 CCR, §§ 450-544). The evidence establishes that Applicant has adequately outlined each of the above programs.[60] (Ex. 6A, p. 30, Ex. 7, pp. 120-121.) Prior to construction, detailed programs and plans will be provided pursuant to Condition of Certification **WORKER SAFETY-1**.

[60] CARE's desire that we infer these plans and the analysis of record are inadequate because of ". . . the applicant's apparent problems with workers at the Los Medanos Energy Center being exposed to toxic levels of Arsenic" is simply unpersuasive and unsupported by credible evidence. (See CARE's Group 1 & 2 Opening Brief (March 23, 2001), p. 1.)

Upon completion of construction and prior to operations at MEC, the Operations Safety and Health Program will be prepared pursuant to regulatory requirements of Title 8 of the California Code of Regulations, which includes an Injury and Illness Prevention Program (8 CCR, § 3203), Emergency Action Program/Plan (8 CCR, § 3220), Fire Protection and Prevention Program (8 CCR, § 3221) and Personal Protective Equipment Program (8 CCR, §§ 3401-3411). Additional programs are set forth under General Industry Safety Orders (8 CCR, §§ 3200-6184), Electrical Safety Orders (8 CCR, §§ 2299-2974), and Unfired Pressure Vessel Safety Orders (8 CCR, §§ 450-544). The evidence indicates that Applicant has adequately outlined each of the above programs. (Ex. 6A, pp. 30-31; Ex. 7, pp. 121-122.) Prior to operation, detailed programs and plans will be provided pursuant to Condition of Certification **WORKER SAFETY-2**.

FINDINGS AND CONCLUSIONS

Based on the evidence of record, the Commission makes the following findings and reaches the following 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, including an accident/injury prevention program, a personal protective equipment program, an emergency action plan, a fire protection and prevention plan, and other general safety procedures.

3. The project will rely on local fire protection services and on-site fire protection systems.

4. The San Jose Fire Department is responsible for providing fire protection and emergency services to the project.

5. The nearest fire station (Station 27) has a response time of at least 7 minutes.

6. With the planned development of a nearby business complex, it is anticipated that improvements in the fire protection services will be

planned, funded, and constructed through the creation of an assessment district by the City of San Jose.

7. If MEC provides funding for additional fire protection services capabilities as required in Condition of Certification **Worker Safety-3**, and procures adequate water for fire protection, the project will incorporate sufficient measures to ensure adequate levels of worker safety and fire protection, and can comply with applicable laws, ordinances, regulations, and standards.

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

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

CONDITIONS OF CERTIFICATION

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

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

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

The Construction Fire Protection and Prevention Plan shall be submitted to the City of San Jose Fire Department for review and acceptance.

Verification: At least thirty (30) days prior to the start of construction, or a later date agreed to by the CPM, the project owner shall submit to the CPM a copy of the Project Construction Safety and Health Program and the Personal Protective Equipment Program, with a copy of the cover letter transmittal of the

programs to Cal/OSHA Consultation Service. The project owner shall provide a letter from the San Jose Fire Department stating that it has reviewed and accepted the Construction Fire Protection and Prevention Plan.

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

- an Operation Injury and Illness Prevention Plan;
- an Emergency Action Plan;
- an Operation Fire Protection Plan; and
- a Personal Protective Equipment Program.

> Protocol: The Operation Injury and Illness Prevention Plan, Emergency Action Plan, and Personal Protective Equipment Program shall be submitted to the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) Consultation Service for review and comment concerning compliance of the program with all applicable Safety Orders. The project's Emergency Action Plan and Fire Protection Plan shall be submitted to the San Jose Fire Department for review and acceptance. The final versions of the Operation Injury and Illness Prevention Plan, Emergency Action Plan, Fire Protection Plan and Personal Protective Equipment Program shall incorporate Cal/OSHA and San Jose Fire Department comments that were received and accepted.

Verification: At least thirty (30) days prior to the start of operation, the project owner shall submit to the CPM a copy of the final version of the Project Operation Safety & Health Program with a copy of the cover letter to Cal/OSHA's Consultation Service, and San Jose Fire Department comments stating that the Fire Department has reviewed and accepted the specified elements of the proposed Operation Safety and Health Plan.

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

WORKER SAFETY-3 The project owners shall reach an agreement with the City of San Jose Fire Department, through the City of San Jose Community Facilities District, on the amount of fees and timing of payment the project owners will provide to cover project-specific impacts associated with worker safety and fire protection.

If an agreement cannot be reached at least sixty (60) days prior to construction, the project owner will inform the CPM and propose a plan to mitigate impacts on fire services. The plan shall include interim funding of an additional fire station,

staffing, equipment, one engine, truck; requirements for water main distribution lines, public water lines, public (off-site) and private (onsite) fire hydrants. Within sixty (60) days the CPM in consultation with the parties will propose an interim fee schedule for payment by the project owners.

Verification: Not later than sixty (60) days prior to any ground disturbance, the project owners shall provide the CPM with a copy of an agreement with the City of San Jose Fire Department or shall provide an acceptable interim plan to address impacts until a permanent agreement can be reached.

D. HAZARDOUS MATERIALS MANAGEMENT

This analysis considers whether the construction and operation of the MEC 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**, the **Worker Safety and Fire Protection**, and the **Traffic and Transportation** portions of this Decision.

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

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. *Natural Gas*

Natural gas, which will be used as a fuel by the project, poses a fire and/or explosion risk as a result of its flammability. While natural gas will be used in significant quantities, it will not be stored on-site. The evidence establishes that the risk of a fire and/or explosion from natural gas can be reduced to insignificant levels through adherence to applicable codes and the development and implementation of effective safety management practices. (Ex. 7, pp. 156-157.) The National Fire Protection Association (NFPA) Code 85A requires:

- the use of double block and bleed valves for gas shut-off;
- automated combustion controls; and
- burner management systems.

These measures will significantly reduce the likelihood of an explosion in gas-fired equipment. Additionally, start-up procedures will require air purging of the gas turbines prior to start-up, thus precluding the presence of an explosive mixture. (Ex. 7, p. 157.)

The facility will also require the installation of a one-mile natural gas pipeline that could result in accidental release of natural gas. The design of the natural gas pipeline is governed by laws and regulations discussed in the **Facility Design** section of this Decision. The evidence establishes that these measures, and Conditions **HAZ-6, HAZ-7,** and **HAZ-9,** are sufficient to reduce the risk of a natural gas release to insignificant levels. (1/19/01 RT 34-35, 216-217; Ex. 7, p. 157.)

2. Aqueous Ammonia

Based on the environmental mobility, toxicity, quantities present at the site, and frequency of delivery, aqueous ammonia poses the predominant risk associated with hazardous materials transportation and use at the proposed facility. The evidence shows that the risk associated with other hazardous materials does not significantly increase the risk of impact beyond that associated with ammonia. (Ex. 7, p. 147.) We therefore focus this discussion on that substance.

The only Acutely Hazardous Material proposed for use at the MEC in quantities exceeding the reportable amounts defined in the California Health and Safety Code, section 25532 (j), is aqueous ammonia in a 25-30 percent solution. (1/19/01 RT 216.) The use of aqueous ammonia eliminates the high internal energy associated with the more hazardous anhydrous form, which is stored as a liquefied gas at high pressure. An accidental release of aqueous ammonia is less violent and easier to contain than anhydrous ammonia, which can rapidly introduce large quantities of the material to the ambient air, where it can be transported in the atmosphere and result in high downwind concentrations. The emission rate from a release of aqueous ammonia is limited by mass transfer from the free surface of the spilled material, hence a reduction in the rate

of emission to the atmosphere. (Ex. 7, p. 147.) The evidence establishes that aqueous ammonia is intrinsically the safest type of ammonia. (1/19/01 RT 274-245.)

Aqueous ammonia will be used in controlling the emission of oxides of nitrogen (NO_x) from the combustion of natural gas in the facility. To assess the potential impacts associated with an accidental release of ammonia, Staff typically evaluates where four "benchmark" exposure levels of ammonia gas could occur off-site. (Ex. 7, pp. 170-175.) These are:

- the lowest concentration posing a risk of lethality, 2,000 ppm;
- the Immediately Dangerous to Life and Health (IDLH) level, of 300 ppm;
- the Emergency Response Planning Guideline (ERPG) level 2, of 200 ppm, which is also the RMP level 1 criterion used by the U.S. EPA and California; and
- the 75 ppm level, considered by Commission staff to be without serious adverse effects on the public for a one-time exposure. (Ex. 7, p. 154.)

If the exposure associated with a potential release would exceed 75 ppm at any public receptor, Staff presumes the potential release poses a risk of significant impact. The testimony also establishes that this 75 ppm level is extremely conservative -- essentially a *de minimus* criteria in that there are no significant consequences associated with exposures at this level. (1/19/01 RT 223, 280-281.) However, the probability of occurrence of a release and/or the nature of the potential receptor may determine whether a potential exposure is sufficient to be a potentially significant impact. (Ex. 7, p. 154.) Accidental releases can occur during the transportation of ammonia, or during its delivery or storage.

<u>Transport of Aqueous Ammonia</u>. Hazardous materials including aqueous ammonia, sulfuric acid, and sodium hypochlorite will be transported to the facility via tanker truck. The transportation of hazardous materials is not an infrequent or unique event. Both aqueous and anhydrous ammonia, as well as much more hazardous substances, are transported throughout the area on a daily basis. (1/19/01 RT 31, 282; Ex. 7, p. 156.) The transportation of hazardous materials to the facility is of great concern to the

residents and workers in the surrounding community due to the possibility of an accident involving a delivery vehicle and a resultant chemical spill. While many types of hazardous materials will be transported to the site, the evidence establishes that transport of aqueous ammonia poses the predominant risk associated with such transport. (Ex. 7, p. 154.)

If aqueous ammonia is released from a delivery vehicle during transport, it can result in hazardous ambient concentrations. The extent of impact in the event of such a release would depend on the location and on the rate of dispersion of ammonia vapor from the surface of the aqueous ammonia pool. The likelihood of an accidental release during transport is dependent on accident rates, the type of vehicle used for transport, and on the skill of the drivers utilized.

Staff evaluated the risk of accidental release in the project area. This analysis focused on the project area after the delivery vehicle leaves the main highway. Staff determined that the frequency of release for transportation of hazardous materials in the U.S. is between 0.06 and 0.19 releases per million miles traveled on well designed roads and highways. It is estimated that about 8.9 percent of such incidents would involve more than 10 people and that less than 1.4 percent would involve more than 33 people. Thus the maximum risk of an accident exposing more than 10 people is about 0.018 (0.19 x 0.089) in one million per tanker mile traveled. The maximum risk of such an accident exposing 100 or more people is less than 0.0027 (0.19 x 0.014) in one million per tanker mile traveled. [61]

Assuming maximum continuous usage of aqueous ammonia each year, operation of the proposed facility will require about 100 tank truck deliveries per year. Each delivery truck will travel about 10 miles loaded between Highway 101 and the facility per year, resulting in 1,000 miles of delivery truck travel in the project area per year. Thus, the maximum risk of accidental release and potential exposure of more than 10 people in

[61] This does not include any mitigating affect resulting from meteorological conditions existing at the time of the event that may result in rapid dispersion of released materials, thus lessening potential impacts.

the project area is less than 17 in one million per year, and the risk of exposing more than 100 people is less than 2.7 in one million (.00027% risk). (Ex. 7, p. 155.)

Staff typically uses a significance threshold of 1 in 100,000 for risk of 10 exposures and a threshold of one in one million for risk of 100 exposures (.0001% risk). The risk estimate of 2.7 in one million exceeds the one in one million criteria (.0001% risk). However, this estimate is based on a screening level of analysis. The analysis does not include assessment of the probability of an actual impact in the event of a release. Such an analysis would also include probability of pessimistic dispersion and atmospheric transport in the direction of receptors. The analysis also used the upper end (0.19 in one million) of the accidental release rate per mile of travel.[62]

Considering these factors, Staff concluded that the actual risk of ammonia release and impact on 100 people does not exceed one in one million (.0001% risk). (Ex. 7, p. 156.) Staff believes its analysis captures the upper bounds of the risk of exposure to significant concentrations of aqueous ammonia during transportation to the facility (1/19/01 RT 220), and that these risks are insignificant because of the remote possibility of accidental release of a sufficient quantity to present a danger to the public.

CVRP presented evidence suggesting than Staff underestimated the risks of significant releases because: 1) it does not follow standard protocols routinely used to make these analyses; 2) it is based on generic estimates of population densities, accident rates, and release probabilities, rather than site specific information; 3) it does not consider the entire route; 4) it does not consider future growth and development in the project area.

[62] The range of this rate is from 0.06 to 0.19 in one million.

CVRP's analysis concluded that the risk of exposing more than 10 individuals to more than the 75 ppm threshold would be greater than one in 1000, or a hundred times higher than Staff's significance threshold. (Ex. 33, p. 2.) As a result, CVRP contended that additional mitigation is required and suggested changes to Staff's proposed versions of Conditions of Certification **HAZ-2**, **HAZ-3**, **HAZ-4**, **HAZ-5,** and **HAZ-8**. In addition, this Intervenor suggested the addition of a new Condition (**HAZ–12)** to limit aqueous ammonia strength to 20 percent (Ex. 33, p. 3) and **HAZ-13** to ensure LORS compliance. In turn, both Applicant and Staff challenged the methodology employed by CVRP's witness. (1/19/01 RT 96-99, 223-224.)

Aqueous Ammonia on-site. The Applicant modeled a worst-case accidental release of aqueous ammonia. This release scenario is associated with a postulated spontaneous catastrophic storage tank failure. In conducting this analysis, Applicant assumed that spilled material would be contained in the covered basin below the storage vessel, and that winds of 1.0 meter per second and category F stability would exist at the time of the accidental release. This screening analysis was designed to predict the maximum possible impact based on distance from the storage tank without regard to the specific direction of transport. This analysis indicated that concentrations exceeding 75 ppm would be confined to the project site (Ex. 7, p. 154; Ex. 8, p. 17), and that ammonia levels at the property line would be 13.4 ppm (1/19/01 RT 193).

Staff agreed with Applicant's modeling approach and estimates of downwind concentrations associated with the storage tank failure scenario. However, Staff believes that a more likely (if not worst-case) scenario would involve a release during transfer of ammonia from the delivery vehicle to the storage tank. Staff contends that provisions to catch a release between the delivery vehicle and the storage vessel are necessary to avoid such a release. Staff asserts that material spilled during delivery could result in a pool with significantly greater surface area than that reflected in the Applicant's modeling. (Ex. 7, p. 162.)

Thus, Staff proposed a Condition of Certification requiring a catchment basin between the delivery vehicle and the storage loading connection. This basin would passively drain into the basin below the storage tank or into a separate covered basin capable of containing the entire delivery vehicle's volume and eliminating the downwind effect. (**HAZ-5**; Ex. 7, p. 162.) Staff also proposed a Condition requiring development of a safety management plan for delivery of aqueous ammonia in order to further reduce the risk of any accidental release (**HAZ-3**.)

Testimony on behalf of Intervenor CVRP contends that Applicant's analysis of on-site risks underestimates the risks of ammonia accidents because Applicant: 1) did not consider all reasonable failure modes; 2) assumed most of the release would be captured in a secondary containment structure; and 3) underestimated the rate at which ammonia would be released to the atmosphere. CVRP's analysis indicates that on-site ammonia storage at the MEC would exceed the 75 ppm threshold of 1 in 100,000 for 10 exposures, resulting in 10 exposures for 30 percent aqueous ammonia, but would be less than this threshold for 20 percent aqueous ammonia with only 8 exposures above the 75 ppm threshold. (Ex. 33, p. 4.) Because the SCR system and ammonia vessel would be located within 1000 feet of occupied office space for the proposed campus industrial development, this Intervenor recommended additional mitigation measures to mitigate the risk of on-site unloading and storage/use accidents.

Responders. Intervenor Ajlouny offered testimony (accepted by stipulation), explaining the type of emergency response capabilities available in the Santa Clara Valley. This testimony detailed the various levels and capabilities of available responders (principally area fire departments) and indicated that response from San Jose's Hazardous Incident Team (HIT) could take as long as an hour. In this witness' opinion, locating a HIT unit in south San Jose is desirable.[63] (Ex. 32.)

[63] The existing HIT unit is located in north San Jose. The Intervenor's witness did not provide testimony on behalf of the San Jose Fire Department. (1/19/01 RT 134.)

Applicant's witness explained that the project's employees will be trained to two levels of emergency response. The first responder level encompasses training so that employees can recognize the existence of an incident involving hazardous substances. These employees will be able to identify hazardous substances and be trained to take appropriate action. Operations personnel will receive additional training in the selection of proper protective equipment and methods enabling them to control any release of a hazardous substance. Employees will also be trained when to call for outside assistance, such as that from the fire department. (1/19/01 RT 58-61.) Applicant's witnesses also established that the facility would be designed to prevent any off-site consequences from the spill of a potentially hazardous substance such as aqueous ammonia , and that it was very unlikely that a chemical spill would trigger the need to rely upon an emergency response from the HIT unit. (1/19/01 RT 22-23, 37, 141-144, 160-161.) Even should this happen, however, the project's employees could contain the event until fire department assistance arrived. (1/19/01 RT 37.) Staff's witness testified that, given the design features to guard against catastrophic incidents, he could not conceive of a plausible scenario that would require a response from the HIT unit. (1/19/01 RT 277.)

In our opinion, the evidence indicates that while a second HIT unit appears desirable because of the overall projected level of development in the south San Jose area, the MEC project does not create the need for such response capability. The evidence conclusively establishes that the project will be designed to a level which will guard against realistic possibilities of off-site consequences resulting from releases of hazardous materials, and that all personnel will be trained to appropriate levels in order to contain any reasonably foreseeable incident, including one which would require HIT unit response. (1/19/01 RT 294-298, 329-331.) Fundamentally, the decision as to whether a response from the HIT unit is required rests with the nearby fire department engine company which would be the first to respond to a hazardous materials release at the MEC. (1/19/01 RT 38.) Moreover, the ultimate decision as to whether a second HIT unit should be placed in the local area rests with the San Jose Fire Department and/or the City. We have already required, in Condition **WORKER SAFETY-3**, that Applicant

contribute its representative share toward providing additional emergency response capabilities as may be determined to be necessary. It is simply unnecessary to require a second HIT unit solely in order to reasonably assure protection of public health and safety from hazardous materials accidents which are unlikely to occur at the MEC. (1/19/01 RT 299.)

4. Disputed Conditions of Certification

In light of the competing bodies of evidence summarized above, the parties had various disputes over the wording and content of various proposed Conditions of Certification. Staff submitted certain modifications to those Conditions a few days before the evidentiary hearing on this topic. The changes proposed to **HAZ-1, HAZ-6, HAZ-10,** and **HAZ-11** were acceptable to all parties. (1/19 RT 24-25, 46, 61, 63, 215, 235, 239, 240; CVRP's Opening Brief (March 23, 2001), p. 18.) We incorporate those changes. No dispute surfaced over **HAZ-7** or **HAZ-9**. We discuss the remaining Conditions below.

HAZ-2 CVRP suggested changes which, in Applicant's estimation, would result in the necessity for approval of its Risk Management Plan by multiple agencies not otherwise vested with such authority. (1/19/01 RT 48.) Intervenor basically appeared to desire assurance that the Risk Management Plan/Hazardous Material Management Plan/Business Plan in fact contained in the same items, subject to appropriate agency approval. (1/19/01 RT 109 ; see also 1/19/01 RT 235.) The testimony indicates that the addition of the City as a reviewing entity would not be consistent with governing procedures since this role is reserved to the Certified Unified Program Authority (CUPA) which is the County of Santa Clara. (1/19/01 RT 232-236; see also, 1/19/01 RT 195-196, 259-260.) We see no reason to create a level of agency review in addition to that already established, and therefore adopt the amended version proposed by Staff and agreed to by Applicant.

HAZ-3 CVRP recommended that Condition HAZ-3 be modified to require Applicant to develop and implement driver training and vehicle inspection and maintenance programs for truck deliveries of ammonia. (1/19/01 RT 306-307; Ex. 33, p. 2.) Applicant and Staff view the training as unnecessary. (1/19/01 RT 48, 236, 237.) We agree that it is appropriate to rely on the extensive regulatory program that establishes requirements for transporters of hazardous materials on California Highways to ensure safe handling in general transportation.

CVRP also desires to limit ammonia deliveries to only daytime hours during weekends and holidays in order to reduce potential risks to employees at the future campus industrial complex. This development will include approximately 20,000 employees, as well as a day-care center. Applicant does not object to limiting ammonia deliveries to daytime hours, but contends that this limitation would either create the need for more on-site ammonia storage or result in an increased number of deliveries. (1/19/01 RT 49.)

The crux of this problem seems to be CVRP's legitimate concern that tanker deliveries could pose a risk to its employees. Applicant, on the other hand, is also legitimately concerned that it may need to enlarge the ammonia storage facility in order to be able to maintain project operations from weekend to weekend. We believe there is a way of accommodating both interests. Presumably, the bulk of CVRP's employees and the children will not be present weekends, holidays, or weekdays after 6 p.m. (the normal close of business hours). Therefore, we have modified Condition **HAZ-3** to provide for ammonia deliveries on the weekends, but also to allow for deliveries, as needed, during weekdays after 6 p.m. In our estimation, this reasonably addresses the concerns of both parties, while minimizing any risk to the greatest extent reasonable.

HAZ-4 & HAZ-5 CVRP's contentions over the terms of these Conditions center on the design of the ammonia storage facility and the role of local governmental agencies. Basically, the Intervenor would prefer the use of an underground storage tank or, if not, the installation of a "scrubber" or water spray system as a specific part of the proposed storage/containment facilities. The evidence indicates that both double wall and underground storage facilities are technically feasible, although it is apparently questionable whether the latter would be feasible from an environmental perspective. (1/19/01 RT 51-52.) The testimony further indicates that Applicant is considering the option of a double walled tank and that it is proposing a covered ammonia containment facility equipped with suppression sprays. (1/19/01 RT 53, 187.)

This matter is also pertinent to Condition **HAZ-5**; we believe our modification to that Condition (specifying of the inclusion of a water suppression system) sufficiently addresses issues raised. Finally, we note that we have included local jurisdictions for purposes of reviewing and submitting comment on the ammonia storage tank and secondary containment basin for consideration by the CPM as part of the "verification" provisions for both Conditions.

HAZ-8 CVRP seeks to ensure that project vendors delivering hazardous material use transportation routes approved not only by the CPM, but also by the County and the City; it would also prefer that vendors be specifically required to comply with applicable LORS. (Ex. 33, p. 3.) Applicant and Staff do not view these requests necessary. The testimony establishes that hazardous materials transporters are already required to comply with applicable law and that Applicant will also

contractually require that its vendors so comply. (1/19/01 RT 54: 5-12.) We view this as sufficient. We agree that local jurisdictions should have a role in commenting upon the delivery route(s) and have included a provision similar to that discussed previously. [Possible alternative delivery routes are described at 1/19/01 RT 91-93.]

HAZ-12(proposed). This additional Condition proposed by CVRP would limit the concentration of aqueous ammonia used at the MEC to "less than 20 percent by volume." (Ex. 33, Attachment 1, pp. 3-4.) In the opinion of Applicant and Staff, this additional dilution would only slightly reduce the already insignificant risk associated from use of the 25-30 percent solution proposed. (1/19/01 RT 56-57, 240-241.) More deliveries would also be needed, thus increasing the possibility of risks from accidents or spills. (1/19/01 RT 55-57.)

We do not adopt this proposal. The evidence of record has convinced us that risks associated with the transportation and storage of aqueous ammonia are already minimal. We have also imposed additional measures to further reduce the level of any remaining risks. In our opinion, this suffices to alleviate any reasonable concerns.

HAZ-13(proposed). This proposal by CVRP would specifically require hazardous materials facilities to conform with City and County regulatory requirements. (1/19/01 RT 316-317.) Applicant and Staff believe it duplicates existing provisions and is therefore unnecessary (1/19/01 RT 57, 264-265), especially since the testimony also indicates that the Commission's standards are more stringent than that of local jurisdictions (1/19/01 RT 241). CVRP's proposal would further require *approval* by the City and/or County.

We are persuaded, for the sake of clarity, to expressly require this linkage with local LORS and to specify the *comment and review* roles of local jurisdictions. We have therefore included a modified version of this proposal as **HAZ-12**.

4. Closure

The requirements for handling and storage of hazardous materials remain in effect until such materials are removed from the site. The facility owners are responsible for continuing to handle such materials in a safe manner, as required by applicable laws. In the event that the facility owner abandons the facility in a manner which poses a risk to surrounding populations, Staff will coordinate corrective action with the California Office of Emergency Services, Santa Clara County Environmental Health Department, and the California Department of Toxic Substances Control (DTSC) to ensure that any

unacceptable risk to the public is eliminated. Funding for such emergency action can be provided by federal, state or local agencies until the cost can be recovered from the responsible parties. (Ex. 7, p. 163.)

FINDINGS AND CONCLUSIONS

Based on our consideration of the evidence of record, we make the following findings and reach the following conclusions:

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

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

3. The Conditions of Certification reduce risks to the public health and safety from natural gas use at the MEC to below levels of significance.

4. A second Hazardous Incident Team is not required to adequately protect public health and safety from hazardous materials accidents reasonably likely to occur at the MEC.

5. The project owner will submit an approved Safety Management Plan for ammonia delivery, an approved Hazardous Materials/Business Plan, and an approved Risk Management Plan prior to delivery of any hazardous materials to the site.

6. The Conditions of Certification ensure that any risks associated with the transport, storage, and use of hazardous materials at the MEC, including aqueous ammonia, will be minimal and will not pose a significant risk to public health and safety.

7. Ammonia levels at the project's property line, in the case of a catastrophic storage tank failure, would not exceed a level of 75 ppm. This level is very conservative, and exposure to this level would not result in significant risks to health or safety.

8. Implementation of the Conditions of Certification, below, assures that the Metcalf Energy Center will comply with all applicable laws, ordinances, regulations, and standards identified in the pertinent portion of Appendix A of this Decision.

We conclude, therefore, that the use of hazardous materials by the Metcalf Energy Center will not result in any significant adverse public health and safety impacts.

CONDITIONS OF CERTIFICATION

HAZ-1 The project owner shall not use any hazardous material in reportable quantities, not listed in Attachment 1, below, or in greater quantities or strengths than those identified by chemical name in Attachment 1, below, unless approved in advance by Santa Clara County and the CPM.

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

HAZ-2 The project owner shall provide a Risk Management Plan to Santa Clara County and the CPM for review at the time the plans are first submitted to the U.S. Environmental Protection Agency (EPA). The project owner shall include methods to address the inadvertent mixing of incompatible materials and all recommendations of Santa Clara County and the CPM in the final document. A copy of the final plans, including all comments, shall be provided to Santa Clara County and the CPM once approved by EPA.

Verification: At least sixty (60) days prior to the delivery of aqueous ammonia, the project owner shall provide the final plans listed above and accepted by Santa Clara County to the CPM for approval.

HAZ-3 The project owner shall develop and implement a safety management plan for the delivery of aqueous ammonia. The plan shall include procedures, protective equipment requirements, training, and a checklist. Ammonia deliveries shall be limited to weekends and holidays to the greatest extent possible. As necessary for plant operations and maintenance, aqueous ammonia deliveries may also occur during weekdays, but only after 6 p.m.

Verification: At least sixty (60) days prior to the delivery of aqueous ammonia to the MEC 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, the storage tank shall be protected by a secondary containment basin capable of holding 150% of the storage volume plus the volume associated with 24 hours of rain assuming the 25-year storm. The secondary containment basin must be designed so as to limit the airborne concentration of ammonia at the facility fenceline to 75 ppm or less under the worst-case scenario assessed in the RMP.

Verification: At least sixty (60) days prior to delivery of aqueous ammonia to the MEC, the project owner shall submit final design drawings and specifications for the ammonia storage tank and secondary containment basin to the County of Santa Clara and the City of San Jose for review and comment, and to the CPM for review and approval.

HAZ-5 The project owner shall provide a covered secondary containment basin to passively contain any spill during the delivery of aqueous ammonia to the storage facility. The secondary containment basin must include a water spray suppresssion system and be designed so as to limit the airborne concentration of ammonia at the facility fenceline to 75 ppm or less under the worst-case scenario assessed in the RMP.

Verification: At least sixty (60) days prior to construction of the secondary containment basin described above, the project owner shall provide detailed design drawings and specifications for the secondary containment basin to the County of Santa Clara and the City of San Jose for review and comment, and to the CPM for review and approval.

HAZ-6 The project owner shall prepare and implement a pipeline maintenance plan which shall include a requirement that the gas pipeline undergo a complete design review and detailed inspection every thirty (30) years and each five (5) years thereafter.

Verification: At least thirty (30) days prior to the initial flow of gas in the pipeline, the project owner shall provide a detailed maintenance plan and a detailed plan to accomplish a full and comprehensive pipeline design review in the future to the CPM for review and approval. This plan shall be amended, as appropriate, and submitted to the CPM for review and approval, not later than one (1) year before the plan is implemented.

HAZ-7 After any significant seismic event in the area where surface rupture occurs within one (1) mile of the pipeline, the gas pipeline shall be inspected by the project owner.

Verification: At least thirty (30) days prior to the initial flow of gas in the pipeline, the project owner shall provide to the CPM for review and approval a detailed plan to accomplish a full and comprehensive pipeline inspection in the event of an earthquake. This plan shall be amended as appropriate, and submitted to the CPM for review and approval, at least every five (5) years.

HAZ-8 The project owner shall direct all vendors delivering any hazardous material to the site to use only the route(s) approved by the CPM.

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

HAZ-9 The natural gas pipeline shall be designed to meet CPUC General Order 112-D and 58 A standards, or any successor standards, and shall be designed to meet Class III service. The pipeline shall be designed to withstand seismic stresses and shall be leak surveyed annually for leakage. The project owner shall incorporate the following safety features into the design and operation of the natural gas pipeline: (1)

the pipeline shall be designed and constructed to carry natural gas at a pressure of 400 psig; (2) butt welds will be x-rayed and the pipeline will be pressure tested prior to the introduction of natural gas into the line; (3) the pipeline shall be surveyed for leakage annually according to the "Periodic Leak Surveys of Gas Transmission and Distribution Facilities" document provided by the Applicant; (4) the pipeline shall be marked to prevent rupture by heavy equipment excavating in the area; and (5) valves shall be installed to isolate the line if a leak occurs.

Verification: Prior to the introduction of natural gas into the pipeline, the project owner shall submit design and operation specifications to the CPM for review and approval.

HAZ-10 The project owner shall design and operate the facility to ensure that no fuels or lubricants are permanently or temporarily stored within 100 feet of the sulfuric acid tank.

Verification: At least sixty (60) days prior to receipt of sulfuric acid on-site, the project owner shall provide copies of the facility design drawings showing the location of the sulfuric acid storage tank and the location of any tanks, drums, or piping containing any fuels or lubricants and the route by which such materials will be transported through the facility.

HAZ-11 The project owner shall direct all vendors delivering aqueous ammonia to the site to use only transport vehicles which meet or exceed the specifications of the DOT MC-307 tanker trucks (as described in the data response dated July 19, 2000 from CH2Mhill).

Verification: At least sixty (60) days prior to receipt of aqueous ammonia on-site, the project owner shall submit copies of the notification letter to supply vendors indicating the transport vehicle specifications to the CPM for review and approval.

HAZ-12 The project owner shall design, construct, and operate the project in conformance with all applicable laws, ordinances, regulations, and standards pertaining to the transport, storage, and handling of hazardous materials, including the requirements of Santa Clara County and the City of San Jose.

Verification: At least sixty (60) days prior to the delivery of any hazardous materials to the MEC site, the project owner shall submit final design drawings and specifications for all hazardous material storage areas and equipment to Santa Clara County and the City of San Jose for review and comment, and to the CPM for review and approval.

E. WASTE MANAGEMENT

The Metcalf Energy Center (MEC) project will generate hazardous and nonhazardous wastes during construction and operation. Here we review the types of wastes generated and the Applicant's waste management plans for reducing the risks and environmental impacts associated with the handling, storage, and disposal of project-related wastes.[64]

SUMMARY AND DISCUSSION OF THE EVIDENCE

The land at the proposed site has never been developed, although a portion was used for agriculture until about 1970. Over the past decade, mixed construction and other wastes have been brought to the site and stored or dumped there. In addition, vehicle storage and, probably, maintenance have occurred there.

1. Current Site Conditions / Site Excavation

Environmental Resources Management (ERM) performed a Phase I Environmental Site Assessment (ESA), using methods prescribed by the American Society for Testing and Materials (ASTM), to determine the potential for the presence or likely presence of any hazardous substances or petroleum products under conditions that may indicate a release or threat of a release from present or past activities. The Phase I ESA concluded that there were some conditions and materials that necessitated the need for additional study of the site. Specifically, the Phase I ESA identified the following:

- aboveground storage tanks were seen, although ERM was unable to verify if they were empty or full;
- evidence of hydraulic oil leaking into the soil from heavy equipment;

[64] The disposal of project wastewater, which requires a National Pollutant Discharge Elimination System (NPDES) permit, is discussed in the **Soil and Water Resources** section of this Decision.

- discolored soil in and around open landfill areas;
- cans and drums with unknown contents; and
- possible existence of asbestos-containing material in piles of roofing or building debris.

ERM also researched the area around the site for possible problems stemming from off-site contamination. Based on the results of that study, ERM recommended sampling to assess potential impacts in shallow soils, debris, and groundwater. (Ex. 6A, pp. 21-22; Ex. 7, pp. 179-180.)

A Phase II ESA (conducted in June 1999) revealed no soil or groundwater contamination (other than some trace amounts of pesticides at one location and some elevated levels of chromium and nickel at two locations not likely related to any releases at the site). About 40 cubic yards of asbestos-containing debris were identified as needing removal from the site and subsequently were removed by a licensed asbestos removal contractor. (Ex. 6A, p. 22; Ex. 7, pp. 179-180.)

The Department of Toxic Substances Control (DTSC) provided comments based on the Phase I and Phase II ESAs.[65] Accordingly, an Interim Final Phase II ESA was then conducted and submitted in May 2000. This assessment indicates that additional site characterization is still needed. (Ex. 6A, p. 22.)[66]

In addition to the ESAs performed for the proposed site, a database search was performed for potentially contaminated sites which may be encountered during construction of the linear facilities. This search focused on known hazardous substance release sites and operating underground storage tanks up to one-half mile of either side of the proposed and alternative linear facility routes. It revealed

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[65] DTSC noted that although uncovered asbestos was found in stockpiles, surface soil samples were not collected. Further, the unlabeled drums and the area immediately surrounding them were not sampled, and it was unclear whether the stained surface soil near the open landfill areas was sampled. Also, it did not appear that any attempt was made to sample in the areas previously identified as inaccessible. (Ex. 7, p. 180.)

28 leaking underground storage tanks within 250 feet of either side of the linear facilities. Of these, 23 occur right on or directly adjacent to the proposed and alternative linear facilities. However, many of the sites are considered "closed" by the Santa Clara Valley Water District (SCVWD) and require "no further action," meaning that the site has been cleaned, or no cleanup activities were deemed necessary. Twelve of the sites are still under oversight by the SCVWD for potential groundwater contamination. Contaminated soil or groundwater is likely to exist at the listed sites, but the extent of contamination is not known. (Ex. 7, p. 181.)

In addition to the reported leaking underground storage tanks, there are 24 sites within 250 feet of the linear routes that have a total of 79 active operating underground storage tanks. (Ex. 7, p. 181.)

2. Construction

Project site preparation and construction will generate both nonhazardous and hazardous wastes.

a. Nonhazardous

The proposed site currently contains wrecked automobiles, lumber, makeshift buildings, and assorted trash and debris. The nonhazardous waste will be removed by a waste removal company. The recyclable portion of the waste will be recovered with the remaining waste transferred to a Class III landfill. (Ex. 1, p. 8.13-2; Ex. 7, p. 182.)

A variety of nonhazardous waste streams will be generated from construction of the generating plant, electric transmission line, natural gas supply line, and water supply and wastewater discharge lines. Paper, wood, glass, and plastics will be generated from packing materials, waste lumber, insulation, and empty chemical

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[66] Condition of Certification **WASTE-7** requires that additional site characterization be conducted prior to facility construction.

containers. The Applicant estimated that about 100 tons of these wastes will be generated and those which cannot be recycled will be disposed weekly in a Class III landfill. It is expected that about 70 tons of excess concrete will be generated during the course of construction. This will be disposed weekly in a Class III landfill or at clean fill sites. In addition, metal wastes will be generated from welding/cutting operations, packing materials, empty chemical containers, and wiring. About 25 tons of metal wastes are expected, and that which cannot be recycled will be deposited in a Class III landfill. Drilling will be necessary for some sections of the natural gas and water pipelines, and will require the use of nontoxic drilling mud. About 1300 barrels will be used, and will be disposed at a Class II or III landfill. (Ex. 1, p. 8.13-3; Ex. 7, p. 182.)

b. Hazardous Wastes

Hazardous wastes that may be generated during construction include waste oil and grease, paint, spent solvent, welding materials, and cleanup materials from spills of hazardous substances.[67] Such wastes will be collected in hazardous waste accumulation containers near the point of generation. The containers will be taken to the construction contractor's hazardous waste storage area and, within ninety days, delivered to an authorized hazardous waste management facility. (Ex. 1, p. 8.13-4; Ex. 7, p. 182.)

Initial pre-operational cleaning of internal surfaces of the Heat Recovery Steam Generators and auxiliary boiler will also generate chemical waste cleaning solutions and filters. These wastes will be stored temporarily on-site in portable tanks, and will be disposed off-site by a chemical cleaning contractor in accordance with applicable regulatory requirements. (Ex. 1, p. 2-13; Ex. 7, pp. 182-183.)

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[67] The construction contractor is considered the actual waste generator and will be responsible for proper hazardous waste handling.

Hazardous wastes may also be generated if contaminated soils are encountered during site preparation or linear facility construction. When construction or excavation is planned in areas near known contaminated sites, Applicant has committed to the following procedures to assure proper management of soil suspected to be contaminated:

- Hand-held detection equipment, such as photoionization detectors, will be used in the field during excavation to ascertain the presence of volatile hazardous substances in excavated soil.
- Health and safety precautions will be implemented to prevent or minimize exposure to workers and the public if contaminated soil is determined to be present.
- Soil samples will be taken by trained personnel to confirm the nature of contamination.
- Soil suspected to be contaminated will be stockpiled near the site of excavation on polyethylene sheeting and covered while awaiting laboratory confirmation.
- Contaminated soil will be transported to an appropriately permitted facility.
- Only clean soil will be deposited back into the original excavation site. (Ex. 7, p. 183.)

Condition of Certification **WASTE-4,** in conjunction with an approved Health and Safety Plan (see the **Worker Safety and Fire Protection** section of this Decision) will ensure that contaminated soil discovered during excavation will be properly handled with appropriate worker and environmental protection. In areas where there is no known or suspected contamination, soil which is discolored or has a petroleum hydrocarbon odor will be safely stockpiled until the nature of the contamination is determined by laboratory analysis. If the soil is found to be

contaminated, procedures similar to those listed above will be followed. (Ex. 7, p. 183.)

3. Operation

Under normal operating conditions, the proposed facility will generate both nonhazardous and hazardous wastes.

a. Nonhazardous

Nonhazardous wastes generated during plant operation include trash, office wastes, empty containers, broken or used parts, used packing material, and used filters. The quantities of nonhazardous wastes generated from gas-fired facilities such as the MEC project are typically minor and, in the present case, are estimated to be about 70 cubic yards annually. (Ex. 7, p. 183.)

b. Hazardous Wastes

During routine project operation, hazardous wastes likely to be generated include cleaning solutions, spent air pollution control catalysts, used oil and filters, used cleaning solvents, cooling tower sludge, and contaminated cleanup materials. The hazardous wastes expected to be generated at the MEC facility, their origin, quantity, and disposal method are depicted on Table 1 below.

TABLE 1 (OPERATIONAL HAZARDOUS WASTES)

Waste	Origin	Composition	Quantity	Classification	Disposal
Lubricating oil	Gas turbine lubricating oil system	Hydrocarbons	Small amounts from leaks and spills	Hazardous	Cleaned up using sorbent and rags – disposed by certified oil recycler
Lubricating oil filters	Gas turbine lubricating oil system	Paper, metal and hydrocarbons		Hazardous	Recycled by certified oil recycler
Laboratory analysis waste	Water treatment	Sulfuric acid	Approximately 500 gallons per year	Hazardous	Recycled by certified recycler
SCR catalyst units	SCR system	Metal and heavy metals, including vanadium	Warranty is 3 years-use tends to be 3 to 5 years	Hazardous	Recycled by SCR Manufacturer or disposed in Class I landfill
CO catalyst units	Auxiliary boiler		3 to 5 years	Hazardous	Recycled by manufacturer
Oily rags	Maintenance, wipe down of equipment, etc	Hydrocarbons, cloth	Approximately 800 rags per year	Hazardous	Recycled or disposed of by certified oil recycler
Oil sorbents	Cleanup of small spills	Hydrocarbons	Approximately 200 pounds per year	Hazardous	Recycled or disposed of by certified oil recycler
Cooling tower sludge[68]	Deposited in cooling tower basin by cooling water	Dirt from air, arsenic from water	100 to 200 pounds per year	May be hazardous, but usually not	Class II landfill if nonhazardous; Class I if hazardous

Source: Exhibit 1, p. 8.13-6

The majority of these wastes will be recycled.

[68] Cooling tower sludge, which consists of suspended solids that accumulate as sediment in the tower basin, may or may not be classified as hazardous, depending on operating conditions of the plant. Sediment accumulates at the rate of 100-200 pounds annually, and is removed every few years. Prior to removal, the material will be tested to determine if it must be managed as hazardous. (Ex. 6, p. 23; Ex. 7, p. 183.)

Hazardous wastes will be stored on-site up to ninety days prior to their transport to a permitted facility by a licensed hauler. The project will have a storage area surrounded by a berm sized to hold the contents of the single largest container plus an additional 20 percent to allow for rainfall. The Hazardous Material Compliance Division of Santa Clara County reviews hazardous waste containment plans when issuing the required Hazardous Material Clearance Form. (Ex. 1, p. 8.13-11; Ex. 7, p. 184.) The project owner must obtain such a form under Condition of Certification **WASTE-5**.

Chemical feed area drains consisting of spillage, tank overflows, effluent from maintenance operations, and liquid from area washdowns will be routed to a neutralization facility for pH adjustment. Elementary neutralization is a type of hazardous waste treatment under California regulations (Cal. Code of Regs., tit. 22, § 67450.1 et seq.) and requires a permit from the Department of Toxic Substances Control.

4. Potential Impacts on Waste Disposal Facilities

Nonhazardous waste which is not recycled will be disposed at one of the regional Class III landfills in the area. Even discounting the effects of recycling on the total amount of non-hazardous wastes destined for landfilling, the amount of waste generated during project construction and operation is insignificant relative to existing disposal capacity.

Three Class I landfills in California (Kettleman Hills in King's County, Buttonwillow in Kern County, and Westmoreland in Imperial County) are permitted to accept hazardous waste. There is a combined total in excess of twenty million cubic yards of remaining hazardous waste disposal capacity at these facilities with remaining lifetimes as long as 50 years. Even without recycling, the generation of hazardous waste from MEC would comprise only a

small fraction of existing capacity (less than one percent), and not significantly impact the capacity of any of the state's Class I landfills. (Ex. 7, p. 184; see also, Ex. 6A, p. 23.)

5. Mitigation

Applicant has agreed to implement the following mitigation measures:

- Hazardous wastes will not be stored on-site for longer than ninety days and will be stored in segregated hazardous waste storage areas with containment structures to control any releases.
- Employees will be trained in hazardous waste procedures, spill contingencies, and waste minimization.
- Procedures will be developed to reduce the quantity of hazardous wastes generated. Nonhazardous materials will be used instead of hazardous materials whenever possible, and wastes will be recycled whenever possible.
- Hazardous wastes will be collected and transported by licensed hazardous waste haulers using manifests and managed only at appropriately permitted facilities.

(Ex. 1, p. 8.13-11; Ex. 6A, p. 23; Ex. 7, p. 185; Ex. 22; see also Ex. 3, p. 313; Ex. 5, p. 3.13.)

Staff and Applicant stipulated to the evidence on this topic, and no other party offered contradictory evidence. (1/8/01 RT 271-278.) Applicant has also accepted the Conditions of Certification proposed by Staff. (Ex. 6A, p. 21.) The evidence thus establishes that hazardous and nonhazardous wastes generated by the MEC project will not cause any significant adverse impacts and will be appropriately managed in compliance with all applicable law.

FINDINGS AND CONCLUSIONS

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

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

2. Nonhazardous wastes that cannot be recycled will be deposited at a Class III landfill.

3. Hazardous wastes that cannot be recycled will be transported within ninety days by registered hazardous waste transporters to an authorized hazardous waste management facility.

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

5. Wastes generated during construction and operation of the project will not result in any significant adverse impacts if the project owner implements the mitigation measures identified in the evidence of record, as well as the Conditions of Certification.

6. The Conditions of Certification below adequately ensure that the project's construction and operation wastes will not create significant adverse impacts and that any associated impacts will be reduced to a level of insignificance.

The Commission, therefore, concludes that the management of project wastes will comply with all applicable laws, ordinances, regulations, and standards as identified in the pertinent portion of Appendix A of this Decision, and that neither hazardous or nonhazardous wastes generated through construction or operation of the project will create any significant adverse impact.

CONDITIONS OF CERTIFICATION

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

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

WASTE-2 The project owner shall notify the CPM of any waste management-related enforcement action taken or proposed to be taken against it, 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 ten (10) days of becoming aware of an impending enforcement action.

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

- A description of all 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 sixty (60) days prior to the start of construction, the project owner shall submit the construction waste management plan to the CPM for review. The operation waste management plan shall be submitted no less than sixty (60) days prior to the start of project operation. The project owner shall submit any revisions required by the CPM within thirty (30) days of notification by the CPM (or mutually agreed upon date). In the Annual Compliance Reports, the project owner shall document the actual waste management methods used during the year compared to planned management methods.

WASTE-4 The project owner shall have an environmental professional available for consultation during soil excavation and grading activities. The environmental professional shall be given full authority to oversee any earth moving activities that have the potential to disturb contaminated soil. The environmental professional shall meet the qualifications of such as defined by the American Society for Testing and Materials designation E 1527-97 Standard Practice for Phase I Environmental Site Assessments as evidenced by one of the following or similar credentials:

(1) Certified Industrial Hygienist with experience in worker exposure monitoring,

(2) Qualified Environmental Professional certification,

(3) Registered Environmental Assessor II, or

(4) Registered Professional Engineer with experience in remedial investigation and feasibility studies.

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

WASTE-5 If potentially contaminated soil is unearthed during excavation at either the proposed site or linear facilities as evidenced by discoloration, odor, detection by handheld instruments, or other signs, the environmental professional shall inspect the site, determine the need for sampling to confirm the nature and extent of contamination, and file a written report to the project owner and CPM stating the recommended course of action. Depending upon the nature and extent of contamination, the environmental professional 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 environmental professional, significant remediation may be required, the project owner shall contact representatives of the Santa Clara County Department of Environmental Health and Region 2 of the California Department of Toxic Substances Control for guidance and possible oversight.

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

WASTE-6 The project owner shall obtain a Hazardous Material Clearance Form from the Santa Clara County Hazardous Materials Compliance Division.

Verification: Prior to the start of construction, the project owner shall provide an approved copy of the Santa Clara County Hazardous Materials Compliance Division's Hazardous Material Clearance Form to the CPM.

WASTE-7 The project owner shall perform additional limited investigations to fully characterize the site, including sampling soil in the area of the former asbestos containing material (ACM) piles to confirm that ACM is no longer present, sampling of the contents of the unlabeled drums and above ground storage tanks, and sampling of areas previously identified as inaccessible in the Phase II ESA.

Verification: Prior to the start of construction, the project owner shall submit analytical results of the additional sampling to the CPM as an ESA Addendum.

WASTE-8 All site debris, including stockpiles, drums, automotive debris, storage sheds, and living quarters, shall be removed from the site as soon as possible after the project owner has control of the site.

Verification: The project owner shall notify the CPM in writing within ten (10) days of removal of site debris.

VII. ENVIRONMENTAL ASSESSMENT

Under its statutory mandate, the Commission must evaluate a project's potential effect upon the environment. The Commission reviews the individual topics of biological resources, soil and water resources, cultural resources, and geological/paleontological resources to determine whether project-related activities will result in adverse impacts to the natural and the 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, and other topics of critical biological interest such as unique habitats. The following review describes the biological resources of the project site and ancillary facilities, assesses the potential for impacts on biological resources, and determines the adequacy of proposed mitigation measures in order to ensure compliance with all applicable laws, ordinances, regulations, and standards.

SUMMARY AND DISCUSSION OF THE EVIDENCE

i. Regional Description

The proposed project site is located in the Santa Clara Valley south of San Jose and just north of the town of Coyote. The Santa Clara Valley is bordered by the Santa Cruz Mountains to the west and the Diablo Range to the east. The MEC site is situated southeast of the base of Tulare Hill and directly adjacent to Fisher Creek. Special-status species known to occur in the vicinity or identified during field surveys are listed in **Biological Resources Table 1**.

BIOLOGICAL RESOURCES Table 1
Special Status Species within the Vicinity of the Metcalf Energy Center

Species Name	Regulatory Status[#]	Suitable Habitat for the Species[†]	Known Occurrence In Project Area
Habitats			
Serpentine bunchgrass	NA	Serpentine soils	Known occurrence on Tulare Hill, Coyote Ridge, and Santa Teresa Hills.
Sycamore alluvial woodland	NA	RIP	Coyote Creek riparian corridor.
Plants			
Fragrant fritillary *Fritillaria liliacea*	1B, SC	AG	Suitable habitat in project area, but none observed during surveys in impact areas.
Metcalf Canyon jewel-flower *Streptanthus albidus* ssp. *Albidus*	FE, 1B	SB	Historic occurrences on northwest flank of Tulare Hill, but none observed during surveys. May be extirpated from hill.
Most beautiful jewel-flower *Streptanthus albidus* ssp. *Peramoenus*	SC, 1B	SB, CH	Suitable habitat in project area, but none observed during surveys in impact areas.
Mt. Hamilton thistle *Cirsium fontinale* var. *campylon*	SC, 1B	CH, AG, SB, OW	Known occurrence along Fisher Creek south of Tulare Hill and in Coyote Creek pond area south of the proposed MEC gas pipeline.
Santa Clara Valley dudleya *Dudleya setchellii*	FE, 1B	SB rocky outcrops	Known occurrences on serpentine outcrop areas of Tulare Hill and found during surveys, but not in construction zone.
Smooth lessingia *Lessingia micradenia* var. *glabrata*	SC, 1B	CH, SB	Suitable habitat in project area, but none observed during surveys in impact areas.
Tiburon Indian paintbrush *Castilleja affinis* ssp. *Neglecta*	FE, CT, 1B	SB (rocky), AG	Suitable habitat in project area, but none observed during surveys in impact areas.
Invertebrates			
Bay checkerspot butterfly *Occidryas editha* ssp. *Bayensis*	FT	SB	Known habitat and occurrences on Tulare Hill; assumed present.
Edgewood blind harvestman *Calicina sitalcina minor*	SC	SB	Potential habitat in moist areas of Tulare Hill, but not found during surveys.
Opler's longhorn moth *Adela oplerella*	SC	SB	Known population occurrence on Tulare Hill; assumed present.

Species Name	Regulatory Status[#]	Suitable Habitat for the Species[†]	Known Occurrence In Project Area
Fish			
Central California Coast steelhead *Oncorhynchus mykiss*	FT	R	Potential migration and spawning habitat in Coyote Creek.
Fall/late fall-run chinook salmon *Oncorhynchus tshawytscha*	C	R	Potential migration and spawning habitat in Coyote Creek.
Sacramento splittail *Pogonichthys macrolepidotus*	FT	R, SL	Potential spawning habitat in Coyote Creek.
Reptiles and Amphibians			
California red-legged frog *Rana aurora* ssp. *draytonii*	FT	SL, W	Known historic occurrence from upper Fisher Creek drainage. Potential dispersal habitat along Fisher and Coyote creeks.
California tiger salamander *Ambystoma californiense*	C	AG, VP	Potential dispersal and aestivation habitat along Fisher creek.
Western pond turtle *Clemmys marmorata*	SC	SL, R, W	Potential habitat in ponds of Fisher Creek and Coyote Creek.
Birds			
American peregrine falcon *Falco peregrinus anatum*	SE, FP, (FE-delisted)	AG, W	Potential occasional winter forage on Tulare Hill and agriculture land.
Great blue heron (rookery site) *Ardea herodias*	CSC	RIP	Potential rookery habitat in Coyote Creek corridor; none observed during surveys.
Ferruginous hawk *Buteo regalis*	SC, CSC	AG	Potential occasional winter forage on Tulare Hill and agriculture land.
Tricolored blackbird *Agelaius tricolor*	SC, CSC	W, C	Potential suitable habitat along portions of Fisher Creek. None observed in project area.
White-tailed kite *Elanus leucurus*	SC, FP	AG, RIP	Potential for nesting in trees on MEC site and Coyote Creek riparian corridor and forage on Tulare Hill and crop lands.
Western burrowing owl *Athene cunicularia* ssp. *hypugea*	SC, CSC	AG	One owl and den observed on Tulare Hill in February 1999 above MEC project site.
Golden eagle *Aquila chrysaetos*	FP, CSC	AG, CS	Known to nest at Calero Reservoir; observed foraging on Tulare Hill and Coyote Ridge.

Species Name	Regulatory Status[#]	Suitable Habitat for the Species[†]	Known Occurrence In Project Area
Mammals			
Fringed myotis bat *Myotis thysanodes*	SC	OW	Potential habitat along Coyote Creek riparian corridor.
Greater western mastiff bat *Eumops perotis californicus*	SC, CSC	OW, CS, CH	Potential habitat along Coyote Creek riparian corridor.
Long-eared myotis bat *Myotis evotis*	SC	OW	Potential habitat along Coyote Creek riparian corridor.
Long-legged myotis bat *Myotis volans*	SC	CH, OW	Potential habitat along Coyote Creek riparian corridor.
Pacific western big-eared bat *Plecotus townsendii townsendii*	SC, CSC	OW	Potential habitat along Coyote Creek riparian corridor.
Small-footed myotis bat *Myotis ciliolabrum*	SC	OW	Potential habitat along Coyote Creek riparian corridor.
Yuma myotis bat *Myotis yumanensis*	SC, CSC	RIP, CH	Potential habitat along Coyote Creek riparian corridor.
Riparian brush rabbit *Sylvilagus bachmani riparius*	FE, SE	OW, RIP	Potential habitat along Coyote Creek riparian corridor. None observed during surveys.
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	SC, CSC	CH, RIP	Potential habitat in Fisher Creek riparian corridor. None observed near MEC site.
San Joaquin kit fox *Vulpes macrotis mutica*	FE, ST	AG	Known historic (1975) habitat east of U.S. 101 on Coyote Ridge.

[#] Federal-, state-, and CNPS-listed species.
FE: Federally Endangered.
FT: Federally Threatened.
SC: Federal Species of Concern.
PE: Federal Proposed Endangered.
PT: Federal Proposed Threatened.
C: Candidate Species for Listing
SE: California Endangered.
ST: California Threatened.
CPE: California Proposed Endangered.
CSC: California Species of Special Concern.
FP: California Fully-Protected species.
CR: California Rare.
1A: Extinct.
1B: CNPS rare or endangered in California and elsewhere.
2: CNPS rare or endangered in California, more common elsewhere.

[+] Abbreviations for habitat areas.
AG: Annual grassland.
AW: Alkali wetlands.
C: Crop.
CH: Chaparral.
CS: Coastal sage scrub.
CW: Coniferous woodland.
ID: Interior dunes.
MA: Marine.
OW: Oak woodland.
R: River system and tributaries, open water.
RIP: Riparian habitat along Coyote Creek.
SB: Serpentine bunchgrass.
SL: Sloughs, slow moving water, lake.
W: Wetland habitat; fresh and/or brackish.
VP: Vernal pool.

(Source: Exhibit 7, pp. 478-482

Protocol surveys were conducted in compliance with the California Department of Fish and Game (CDFG) regulations, focusing on special-status species that could potentially occur in the area such as California red-legged frogs, California tiger salamanders, and western pond turtles. The surveys included the project site, an area within a one-mile radius from the site, and the areas within 1,000 feet of either side of the linear facility alignments. The presence or potential presence of sensitive biological resources was determined from information gathered during field surveys that were conducted for the project, published and unpublished literature, and natural resource databases. (2/15/01 RT 60-61, 135-146; Ex. 95, p. 5.)

These surveys revealed no special-status species or active raptor nests at the project site or riparian corridor. The evidence shows that the site does not currently support breeding habitats for special-status species. (2/15/01 RT 150-151, 218; Ex. 95, pp. 7-8.)

Serpentine Habitats. The surrounding hills, including Coyote Ridge to the east, Santa Teresa Hills to the west, and Tulare Hill contain soils derived from serpentine rock and support unique serpentine grasslands, considered a sensitive habitat by the CDFG. Serpentine habitats support proportionately high numbers of rare and/or endemic plant species. Serpentine soils are found in parts of eight counties within the San Francisco Bay Area: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, and Sonoma. (Ex. 7, p. 473.)

Serpentine habitats also support endemic or nearly endemic invertebrates such as the federally threatened Bay checkerspot butterfly (*Occidayas editha* spp. *bayensis*) whose primary larval host plant, dwarf plantain (*Plantago erecta*), is abundant on serpentine soils. The Opler's longhorn moth (*Adela oplerella*), a federal species of concern, is found exclusively on its host plant, California cream cups (*Platystemon californicus*), in serpentine soils. The Edgewood blind

harvestman (*Calicina sitalcina minor*), also a federal species of concern, are restricted to serpentine soils in the San Francisco Bay Area. (Ex. 7, p. 473.)

Tulare Hill is a serpentine formation in the center of Santa Clara Valley, immediately west of the MEC site, and serves as a stepping stone connection between the serpentine habitats of the Santa Cruz Mountains and Diablo Range. The federally endangered Santa Clara Valley dudleya (*Dudleya setchellii*) and several invertebrate host species (dwarf plantain, California cream cups, and owl's clover) occur on the hill. Tulare Hill supports the Bay checkerspot butterfly during productive years and is listed as a high priority area for this species and an important area for the Opler's longhorn moth in the *Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area*. The surrounding Coyote Ridge and Santa Teresa Hills are considered core areas and high priority areas, respectively, for the butterfly. (Ex. 7, pp. 473-474.)

Fisher and Coyote Creeks. Fisher Creek is a tributary to Coyote Creek that flows from the Santa Teresa Hills into the Santa Clara Valley along the southern and eastern base of Tulare Hill. Fisher Creek supports intermittent occurrences of riparian habitat and sparse vegetation due to disturbance from cattle grazing. Various waterfowl, water birds, and warm water fish species occur in Fisher Creek. No special status species are known to occur, but the creek could provide dispersal habitat for the California tiger salamander (*Ambystoma californiense*; federal candidate) and California red-legged frog (*Rana aurora* spp. *draytonii*; federally threatened). Mt. Hamilton thistle (*Cirsium hamiltonii*), a federal species of concern and California Native Plant Society (CNPS) list 1B plant, was observed along Fisher Creek, southwest of the MEC site, in 1991. However, the plant was not observed during surveys conducted in March and May of 1999. (Ex. 7, p. 474.)

Coyote Creek flows northward into the San Francisco Bay, 38 miles from the MEC site. The Coyote Creek riparian corridor is a significant feature of the Santa

Clara landscape and supports several riparian trees, shrubs, and associated wildlife. Coyote Creek contains habitat for both cold and warm water fish species, including the fall-run chinook salmon (*Oncorhynchus tshawytscha*), is a migration corridor for neotropical migrants, and provides potential breeding and migration habitat for the western pond turtle (*Clemmys marmorata*; federal species of concern), California red-legged frog, and California tiger salamander. (Ex. 7, p. 474.)

Ordinance Trees. Santa Clara County defines "ordinance trees" as any tree with a diameter at breast height (DBH) of 12 inches or greater at 4.5 feet above ground surface. The City of San Jose defines ordinance trees as any tree having a circumference of 56 inches measured 24 inches above natural grade slope. Removal of ordinance trees requires city and county permits. Ordinance trees in the project vicinity include Valley oak (*Quercus lobata*), elderberry (*Sambucux mexicana*), English walnut (*Juglans regia*), olive (*Lea europaea*), pear (*Malus* sp.), and California coffeeberry (*Rhamnus californica* spp*. californica*). Heritage trees are defined by the City to have a special significance to the community because of a unique quality, species, size, or historic value. Keesling black walnut trees occur throughout the Santa Clara Valley, particularly along Monterey Road. The Keesling black walnut trees were designated by the State of California as a Point of Historical Interest in the mid 1980's. A large grove of black walnut trees were planted along the southeastern border of the MEC site; however, these are not listed as Heritage Trees. (Ex. 7, p. 475.)

ii. Site Vicinity

Power Plant Site and Laydown Area. The proposed MEC site is bordered by Monterey Road and the UPRR railroad tracks on the east, Tulare Hill and Fisher Creek on the north and west, and an agricultural field that extends to Blanchard Road to the south. The power plant will require about 10.7 acres for the footprint, including generation facilities, storage tanks, parking area, administration building, water treatment, switchyard, and stormwater detention pond. The site

supports elderberry savanna that may be considered potential upland habitat for red-legged frogs. However, the site has been highly disturbed by the current tenant and is littered with old cars, trailers, debris, and has several pens holding numerous roosters. The area has been severely overgrazed by cattle and goats. Approximately 80 trees are located within the construction area. A temporary construction laydown area will require about 12 acres of agricultural land south of the MEC site. (Ex. 7, p. 475.)

Configuration of the MEC site includes a 100-foot setback from the Fisher Creek riparian corridor,[69] in accordance with the City of San Jose's *Riparian Corridor Policy Study.* The MEC footprint will be elevated to 255 feet with the edge sloping into the setback. A 75-foot wide temporary construction area will be within the setback on the west side of the cooling tower. A stormwater detention pond located at the southern end of the site will consist of a discharge pipe placed through the Fisher Creek levee; it will release collected stormwater into Fisher Creek. (Ex. 7, p. 475.)

The area of Fisher Creek that is adjacent to the MEC site is mostly disturbed from over grazing of cattle. A total of 80 trees, dominated by Valley oak and red willow (*Salix laevigata*), and two shrub species, elderberry and mule fat (*Baccharis viminea*), were identified within the corridor. Fisher Creek has a 50-foot wide levee along the eastern and southern banks. The majority of the riparian vegetation occurs along a band between the top of the inside bank of the levee and the creek. A portion of the levee near the north side of the MEC site has been breached by a Pacific Gas and Electric (P.G.&E) maintenance easement to access transmission towers and power lines on Tulare Hill. (Ex. 7, pp. 475-476.)

A roughly graded road located along the western side of Fisher Creek at the base of Tulare Hill functions as a partial levee (about 5 feet lower than the levee

across the creek). Intensive grazing of the area has severely disturbed the site as evidenced by bare soil areas and erosion. A natural spring on the southeast flank of Tulare Hill forms a 0.5-acre wetland at the toe of the hill. The wetland is currently overgrazed and trampled by cattle. Water from the spring is collected by hoses and barrels and transported to the MEC site by the current tenant. The southwestern slope of Tulare Hill supports western burrowing owls (*Speotyto cunicularia hypugea*), Santa Clara Valley dudleya, and Bay checkerspot butterflies and host plant species. The Hill also supports Opler's loghorn moth and host plant species and may support Edgewood blind harvestman. Historic observations of Metcalf Canyon jewel-flower (*Streptanthus albidus* ssp. *albidus*) a federally endangered species, are known for the northwest flank of the Hill. (Ex. 7, p. 476.)

Access Road and Landscape Corridor. A 150-foot wide access road and landscape corridor is proposed just west of the UPRR tracks, extending from the MEC site south to Blanchard Road. The habitats along this proposed road include 6 acres of agricultural land, ruderal grassland, and a row of small trees near the MEC site. If City streets are developed for the proposed Coyote Valley Research Park and MEC is granted access rights, Applicant proposes to construct a western access road to parallel Fisher Creek (at a distance of at least 100 feet from the riparian setback area) from MEC to Santa Teresa Boulevard. The habitats along this route are 2.5 acres of agricultural land, farm roads, and annual grasslands. No sensitive species were found in these areas. However, Mt. Hamilton thistle was observed along Fisher Creek in 1991. (Ex. 7, p. 476.)

Water Supply and Disposal. Applicant proposes to obtain recycled water from the South Bay Water Recycling Program (SBWR). The water will be delivered from the San Jose/Santa Clara Water Pollution Control Plant via a 10.3-mile, 20-inch pipeline through San Jose city streets to the MEC. The new portion of the

[69] The "riparian corridor" is defined as the entire area within the banks of the creek extending to the top of the bank and encompassing the dripline of riparian trees. The "setback" is essentially a specified distance beginning at the outer edge of the riparian corridor.

pipeline route begins at Sender Road and runs down the middle of city streets to Santa Teresa Boulevard, just south of Fisher Creek. This pipeline will then be placed within agricultural land from Santa Teresa Boulevard to the MEC site. Applicant proposes to discharge cooling process water blowdown (wastewater) and sanitary wastes into the San Jose sewer via a 12-inch pipe, running in the same trench as the supply pipe; this line will connect to an existing sewer at Santa Teresa Boulevard. If the western access road is built, pipelines would be placed under the road. (Ex. 7, pp. 476-477; see also, the **Soil and Water Resources** portion of this Decision.)

Natural Gas Pipeline. Natural gas will be delivered via a new 16-inch pipe from the MEC site to an existing PG&E pipe located east of U.S. 101. The pipeline travels from MEC south along the proposed access road to Blanchard Avenue, under the UPPR tracks, Monterey Road, and Coyote Creek, follows Coyote Ranch Road to U.S.101, and goes under U.S. 101. The pipeline will be constructed using horizontal directional drilling methods to avoid the Coyote Creek corridor. Other portions of the route will follow existing roads. The County of Santa Clara requires a 150-foot setback from Coyote Creek and that the drilling sites avoid any sensitive areas. (Ex. 7, p. 477.)

Transmission Line. A new 240-foot long transmission tie-line will run from the MEC site northwest to an existing 230-kV line at the top of Tulare Hill. The new line will span Fisher Creek approximately 70 to 170 feet above ground; this is approximately 50 feet or more above the riparian tree canopy. Tulare Hill supports several sensitive serpentine endemics, including the Bay checkerspot butterfly host plant species and Santa Clara Valley dudlyea. A burrowing owl and den were observed on the west face of the hill during surveys. (Ex. 7, p. 477.)

iii. Direct Impacts

Applicant's testimony indicates that it has designed the MEC project to reduce direct impacts to sensitive biological resources. The power plant, laydown area,

and access roads are located in disturbed habitats or agricultural fields. The power plant is positioned to adhere to a 100-foot setback from the Fisher Creek riparian corridor. The pipeline routes are mostly located in roadways and agricultural fields, and will be directionally drilled to avoid sensitive habitats such as Coyote Creek and its associated riparian corridor by a distance of 500 feet. (Ex. 95, pp. 7-10.)

Nevertheless, the MEC has the potential to cause the following direct biological resources impacts:

- Loss of potential red-legged frog upland habitat.
- Temporary loss of 10,500 square feet of serpentine habitat from the connection of the new transmission line to the existing line.
- Potential bird collisions with the new 240-foot transmission line and two 145-foot tall HRSG stacks.
- Temporary disturbance to the riparian corridor from construction activities.
- Water quality degradation from stormwater discharge into Fisher Creek.
- Loss of 80 trees, of which 59 are "ordinance trees" under Santa Clara County's definition (53 of these are "ordinance trees" under the City's definition.).

(Ex. 7, pp. 477, 483.)

Red-legged Frogs. Even though species of concern, such as the red-legged frog and the tiger salamander have not been found on the MEC site (2/1/5/01 RT 134-136), impacts upon potential habitat of these species were also evaluated. The MEC site supports degraded elderberry savanna that could be considered potential California red-legged frog upland habitat. During wet weather, starting in fall, dispersing frogs use upland habitats. In summer, if water is not available, frogs may leave their breeding aquatic habitats and seek refuge under rocks, logs, organic debris, or in small mammal burrows. The California ground squirrel

burrows along and adjacent to Fisher Creek could provide such refuges.[70] The evidence shows that the United States Fish and Wildlife Service (USFWS) considers the Fisher Creek corridor to be marginal red-legged frog habitat; moreover, none were observed during surveys. Nonetheless, restoring Fisher Creek and providing compensation habitat on Tulare Hill and Coyote Ridge would mitigate any loss of potential upland habitat. (Ex. 7, p. 483.)

Temporary Habitat Disruption. Construction of the transmission line will require a crane and flatbed truck and will result in temporary disturbance to an area about 500 square feet on the south side of existing PG&E tower 0/6 and a 50-foot radius around the tower, for a total area of about 10,500 square feet. No grading or blading is required. The habitat is serpentine grasslands that supports host plant species for the Bay checkerspot butterfly and Opler's longhorn moth. Impacts to larvae could occur from soil compaction and dust. No Santa Clara Valley dudleya were observed in the impact area. (Ex. 7, p. 483.)

Avian Collisions. The new conductors and HRSG stacks should not result in high incidences of avian collisions. The new conductors will span Fisher Creek. Currently, the area is not heavily used by waterfowl; however, plans to restore the riparian corridor could result in increased use. Nonetheless, since the span is short (240 feet in length and 20 feet over Fisher Creek) and 50 feet above the creek, the evidence indicates that collisions would be rare. Bird collisions with the two 145-foot tall HRSG stacks will also be unlikely or minimal since most collisions occur at towers that are 300 feet or higher. Moreover, the MEC site is not known to be an optimal flight path, nor a high bird use area or migration route. Thus, the evidence establishes that the risk of avian collision is low and should not cause a significant impact. (2/15/01 RT 180; Ex. 7, pp. 483-484.)

[70] CARE submitted materials suggesting these burrows provided habitat; the expert testimony, however, discounts this possibility. (2/15/01 RT 149-151.)

Temporary Riparian Corridor Disturbance**.** The City and the County have policies concerning riparian corridors. The boundary of a "riparian corridor" is the top of the bank where there is no vegetation or the outer dripline of riparian trees. (2/15/01 RT 29; Ex. 95, p. 8; Ex. 101.) The "setback" area is outside of the riparian corridor and essentially separates an activity (such as the project) from the riparian corridor. (2/15/01 RT 29; see also, Applicant's Group 3 Opening Brief (April 12, 2001), pp. 3-16 to 3-17; Staff's Group 3 Opening Brief (April 12, 2001), p. 4.) In the present case, the applicable ordinances require a 150-foot setback from the riparian corridor for a natural stream, or a 100-foot setback from the riparian corridor for a manmade or highly modified stream. Fisher Creek is in the latter category. (2/15/01 RT 32-33, 152; Ex. 7, p. 484.)

All project buildings, other structures, impervious surfaces, and ornamental landscape areas will be located outside the 100-foot setback from the riparian corridor. The edges of the elevated footprint will slope into the setback area for a distance of about 80 feet along the west and 60 feet from the bank along at the northwest corner.

No construction will occur in the riparian corridor. (2/15/01 RT 30.) However, construction will cause a temporary disturbance within the riparian setback, but outside the riparian corridor. This disturbance will affect an area which is currently very compacted and bare, with no species of special concern apparent. (2/15/01 RT 137, 175-176.) Upon completion of construction, the area will be revegetated, with the result that the amount of riparian habitat will increase to about 8.6 acres from the current 4.3 acres. (2/15/01 RT 30.) While the evidence establishes that construction will create no biological resources impacts in this regard, the evidence also indicates that use of the setback area -- albeit temporary -- will create a technical noncompliance with City guidelines. (2/15/01 RT 175-176; Ex. 7, p. 494.) This matter is discussed further in the **Land Use** portion of this Decision.

Water Quality. A stormwater detention basin will be constructed outside the riparian corridor in the southwest corner of the MEC site. Stormwater would be delivered to the basin via underground collection pipes that run throughout the plant site; it will be diverted into Fisher Creek via a discharge pipe. The discharge pipe will avoid riparian vegetation. Stormwater runoff will be isolated from spill containment areas. Runoff and discharge are monitored and controlled under a National Pollution Discharge Elimination System (NPDES) permit issued by the State Water Quality Control Board. Under this permit, the project owners are required to prepare a Stormwater Pollution Prevention Plan that documents storage and handling of hazardous material and waste. Additionally, a Section 404 Permit (Nationwide Permit No. 7) and Streambed Alteration Agreement will be required by the Army Corps of Engineers and CDFG, respectively, to construct the outflow pipe. (Ex. 7, p. 484.) Conditions of Certification regarding these measures are contained in the **Soil and Water Resources** portion of this Decision. (See also, Conditions of Certification **BIO-7** and **9**.)

Trees. The Applicant developed a *Riparian Corridor Biotic Assessment and Tree Removal Plan* in accordance with the City of San Jose's Riparian Corridor Policy. Trees on the MEC site were surveyed, measured, mapped, and photographed by a biologist/forester. One hundred sixty one trees were documented on the MEC site. Of these, 80 trees within the MEC site and temporary construction zone will be removed. While 11 of these are within the 100-foot setback area, none are within the riparian corridor proper. Of the 80 trees that will be removed, 59 are Santa Clara county ordinance trees; 53 of the 80 trees meet the definition of City ordinance trees. Applicant will obtain tree removal permits from Santa Clara County and the City of San Jose. (Ex. 7, pp. 484-485.)

Applicant will mitigate the loss of these trees by replanting at a 4:1 ratio for trees greater than 18 inches in diameter, a 3:1 ratio for trees greater than 12 inches in diameter, and at a 2:1 ratio for trees smaller than 12 inches in diameter. This results in planting 320 trees to replace the 59 "ordinance-sized" trees lost and,

including other landscaping measures, approximately 800 to 900 trees will be planted. (2/15/01 RT 28-29.)

iv. Indirect Impacts

Indirect impacts associated with the construction and operation of the MEC project include:

- Temporary reduction in the number of trees that could potentially be used by birds for nesting and foraging.
- Artificial night lighting and noise.
- Nitrogen deposition on serpentine habitat.
- Emission and water use impacts to Fisher and Coyote Creeks.

Trees: Tree removal will result in the temporary loss of potential nesting and foraging habitat for raptors, songbirds, and water birds. No active nests, however, were observed during surveys. While construction activities will likely reduce bird use in the area, it will likely resume and increase once construction and riparian enhancement measures are completed. No evidence suggests this temporary disturbance will be a significant impact.

Artificial Lighting and Noise: The City's guidelines require projects adjacent to riparian corridors to be designed to minimize potential impacts to wildlife from lighting (Guideline 2E) and noise (Guideline 2F). Lights can disorient migratory birds flying at night or attract wildlife, such as insects and insectivores. Special status bat species flying near the project would be of particular concern. While it is likely that some bat species occasionally forage in the area, surveys did not detect any bats using Fisher Creek. The uncontroverted evidence of record establishes that no impacts to biological resources will result from the project's artificial lighting.[71] (Ex. 7, p. 485; 2/15/01 RT 179-180.)

[71] Visual Resources Condition of Certification **VIS-3** requires all lights be shielded and prohibits bulbs and reflectors from being visible from the riparian corridor.

The evidence further establishes that birds and animals can be adversely affected by continuous noise levels beginning at approximately 80 dBA. (2/15/01 RT 31-32, 72-74, 139.) While construction activities may temporarily exceed this level, operational (and continuous) noise will be substantially lower. (2/15/01 RT 30-32, 67.) The expert testimony is uniform in establishing that current use of the area by wildlife is low and that the project's noise levels will not create significant impact upon affected species or to the riparian corridor.[72] (2/15/01 RT 31, 68-75, 179; Ex. 7, pp. 485-486, 494; Ex. 95, p. 14.) The evidence also indicates, however, that the project's operational noise level would not comply with the provisions of the City's Guideline 2F which applies to the operation of mechanical equipment adjacent to riparian corridors. (2/15/01 RT 175; Ex. 7, p. 494; Ex. 95, p. 14.)

Nitrogen Emissions and Deposition: Emissions from the MEC include sulfur dioxide, oxides of nitrogen (NOx), and particulate matter with an aerodynamic diameter or 10 microns or less (PM_{10}). Additionally, ammonia (NH_3) emissions will occur as a by-product of the Selective Catalytic Reduction (SCR) technology used to limit NOx emissions. From a biological resources perspective, the impacts of NOx emissions on surrounding serpentine soils and their associated endemic species are of particular concern. (Ex. 7, p. 486.)

Nutrient-poor serpentine soils support an array of plant species specifically adapted to the soil conditions. Nitrogen is the primary limiting nutrient for plant growth on these soils, and the lack of adequate growth conditions has prevented the invasion of non-native grass species. Nitrogen deposition, primarily from industrial and vehicle emissions, artificially fertilizes the soil and creates better conditions for non-native species to persist and to ultimately displace the native species. (2/15/01 RT 45-48.) This displacement, and subsequent decline in Bay

[72] Staff's witness compared temporary construction noise peaks to ". . . the same noise peaks when the train goes by." (2/15/01 RT 179:13-14.)

checkerspot butterflies and plant host species, has been documented in the Santa Clara Valley. (Ex. 7, p. 486.)

Tulare Hill supports host plant species necessary for the survival of the Bay checkerspot butterfly and Opler's longhorn moth. More importantly, the surrounding Coyote Ridge and Kirby Canyon support important core areas for the Bay checkerspot butterfly. These core areas support numbers of butterflies high enough to sustain the population. Without these core areas, butterfly numbers would decline to levels too low to maintain viable population levels. (Ex. 7, p. 487.)

Currently, existing smog deposits about 7.5 pounds of nitrogen per acre per year in the project area. (2/15/01 RT 45.) The incremental addition by the MEC will be one-half to one pound per acre per year on the areas closest to the plant such as Tulare Hill, and one-tenth to one-quarter pound per acre per year on Coyote Ridge. (2/15/01 RT 51-52.)

While the contribution of nitrogen from the MEC's operations alone is relatively low, cumulative levels approach or exceed the high range of nitrogen deposition considered sufficient to affect ecosystem structure and diversity. This contribution could adversely impact the Bay checkerspot butterfly (federally threatened) and the Opler's longhorn moth (federal species of concern) by contributing to the elimination of essential host plant species. Nitrogen deposition could similarly impact the Metcalf canyon jewel flower, a federally endangered serpentine endemic plant species that occurs on Coyote Ridge. (Ex. 7, p. 488.) The evidence indicates that these impacts, if not adequately mitigated, would be significant. (2/15/01 RT 176.)

Nitrogen deposition from the MEC will affect the 339 acres comprising Tulare Hill and, to varying degrees, approximately 2300 acres of Coyote Ridge. (2/15/01 RT 78, 191-194; Ex. 7, p. 392.) For mitigation, Applicant will purchase 116 acres

on Tulare Hill and 15 acres on Coyote Ridge.[73] Applicant will also fund, in perpetuity, management of the acreage in order to ensure the protection and enhancement of the Bay checkerspot butterfly and its host species. (2/15/01 RT 53-56, 176-177, 197.)

The City and some of the Intervenors questioned the Applicant and Staff witnesses concerning the compensation ratio proposed and the modeling used to derive the ratio. (See, e.g., 2/15/01 RT 96-103, 131-133, 177-178, 192-194, 206.) Essentially, the witnesses explained that very conservative modeling assumptions were used, and that the compensation formula accounted for the existing ambient nitrogen levels and the MEC's contribution in light of those levels. (2/15/01 RT 120-122, 189-193.) The expert testimony provided by Applicant, Staff, and the USFWS uniformly supports the propriety of the modeling used and compensation ratios developed; in fact, the testimony indicates that the mitigation will result in an improvement over the present circumstances. (2/15/01 RT 182-183, 219-221, 225.) No party presented credible evidence to contradict the foregoing.[74]

Water Impacts: Nitrogen impacts will occur to Coyote and Fisher Creeks due to direct deposition, ground water discharge, and runoff input. Direct deposition would be negligible, about 10^{-6} mg/l. Groundwater discharge (0.2 mg/l) and runoff input (0.2mg/l) to Fisher Creek will result in an increase of about 0.4 mg/l.

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[73] The evidence shows that Coyote Ridge is considered better habitat for the Bay checkerspot butterfly than Tulare Hill; however, the project will have more direct impacts upon Tulare Hill. (2/15/01 RT 88-91; 177-178.)

[74] We note that the City (Opening Brief on Group 3 Topics Areas (April 12, 2001), pp. 3-4) asserts that the ratio compensation employed is improper. This assertion is simply not supported by the evidence of record. (See also, Applicant's Reply Brief on Group 3 Topics (April 24, 2001), pp. 3-1 to 3-2, and Staff's Reply Brief on Group 3 Topics (April 24, 2001), pp. 3-6.) Mitigation measures must be "roughly proportional" to the impacts of a project. *Dolan v. City of Tigard*, 512 U.S. 374 (1994). "No precise mathematical calculation is required, but [the lead agency] must make some sort of individualized determination that the required dedication is related both in nature and extent to the impact of the proposed development." (*Id.* at 391.) Where the mitigation measure is an *ad hoc* exaction, it must be "roughly proportional" to the impacts of the project. (2/15/01 RT 195; see also, 14 Cal. Code of Regs., § 15126.4.)

Similarly, runoff input into Coyote Creek would be about 0.2 mg/l. Current dissolved inorganic nitrate values for Coyote Creek are 0.7 mg/l. The evidence shows that the riparian habitat along the creeks would not be as sensitive to nitrogen deposition as would the serpentine habitat. In fact, riparian ecotones can be highly effective in removing nitrogen. The first 16 - 100 feet of riparian forests that are transitional between wetland and upland habitat can be particularly effective and strategies to reduce nitrogen to surface waters include maintaining riparian buffer strips. Therefore, nitrogen additions to riparian habitat and Fisher and Coyote Creeks are not expected to result in significant adverse impacts. (Ex. 7, p. 488.)

Salinity levels in the creeks from total dissolved solids (TDS) emissions from the cooling towers could threaten red-legged frogs. Red-legged frog eggs and larvae die when exposed to salinity levels greater than 4.5 and 7.0 parts per thousand (ppt). Annual PM_{10} emissions from the cooling tower will be 1.81 lbs/hr. Using low flow in Coyote Creek during summer months of 15 cubic feet per second (cfs), and making the conservative estimate that all the TDS emissions (1.81 lbs/hr) would fall on Coyote Creek, the incremental annual increase in salinity would be 4.46×10^{-3} ppt. This is well below the threshold known to cause harm to red-legged frog eggs or larvae. (Ex. 7, pp. 488-489.)

Finally, Fisher Creek does not support special status fisheries, but red-legged frogs may use Fisher Creek as a dispersal corridor. High water flows during winter in Coyote Creek allow chinook salmon and steelhead to migrate to the base of Anderson Dam to spawn. Coyote Creek flows are managed by releases from the dam. Seepage from Coyote Creek will help recharge groundwater and provide recharge to Fisher Creek. SCVWD has indicated that the effects of groundwater pumping to Fisher and Coyote Creeks are small, and can be managed. SCVWD also plans to manage the creek for special status species including salmon, steelhead, and red-legged frogs. Overall, Fisher Creek is not

considered an important creek to special status species, and therefore the potential impact is not considered significant. (Ex. 7, pp. 489-490.)

v. Cumulative Impacts

Future proposed development in the Santa Clara Valley includes the Coyote Valley Research Park (Cisco Systems Project; CVRP) and a Coyote Valley urban reserve development involving 25,000 dwellings on 170 acres (CVUR). (Ex. 7, p. 490.)

Automobile use and emissions will greatly increase in the valley as a result of these developments. It is anticipated that the proposed Cisco Systems development will result in 20,000 employees and potentially more vehicles during commuter hours. Estimated nitrogen emissions from CVRP and CVUR are 17.1 and 83.6 tons per year. Estimated nitrogen emissions from MEC are 37.7 tons per year from NOx and 135 tons per year from ammonia.[75] (Ex. 7, p. 490.)

Ambient nitrogen deposition and cumulative deposition from ambient and projected increases from the MEC exceed the threshold considered significant to alter plant composition and threaten local serpentine endemics. Consequently, cumulative impacts from these additional proposed developments to serpentine endemics from nitrogen deposition will be significant. (Ex. 7, p. 490.) The evidence establishes that the mitigation measures identified in this Decision will adequately compensate for the MEC's contribution to this impact.

vi. Mitigation Measures

The following mitigation measures will reduce potential impacts to biological resources.

<u>General Mitigation Measures</u>. The project owners will:

- Provide worker environmental awareness training.

[75] Emissions are fully discussed in the **Air Quality and Public Health** Portion of this Decision.

- Provide construction monitoring by a qualified Designated Biologist.
- Prepare a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) that details how mitigation measures will by implemented.
- Set-up exclusion zones to avoid sensitive habitats and species during construction.
- Construct silt fencing to avoid run off into Fisher Creek.
- Prohibit pesticide and herbicide use in project areas, except for a 10-foot wide area surrounding the facility boundary fenceline.
- Conduct preconstruction surveys for sensitive species.
- Prepare monthly and/or annual monitoring and compliance reports that analyze the effectiveness of mitigation measures.

(Ex. 7, p. 491.)

Riparian Corridor – Fisher Creek Mitigation Measures. The following measures will specifically mitigate any damage to the riparian corridor of Fisher Creek:

- Implement a 100-foot setback buffer zone from the Fisher Creek corridor.
- Conduct pre-construction surveys along Fisher Creek for California red-legged frog, western pond turtle, foothill yellow-legged frog, and California tiger salamander. Relocate any individuals found during surveys to areas approved by CDFG and USFWS.
- Plant a total of 320 native trees and enhance Fisher Creek riparian corridor.
- Install permanent fencing to prevent cattle access to Fisher Creek and tree planting areas.
- Implement erosion control measures, including Best Management Practices, during construction of the stormwater dishcharge pipe in accordance with a CDFG Streambed Alteration Agreement.
- Remove debris from Fisher Creek.
- Protect existing riparian vegetation before and after construction.
- Restore the spring and wetland to a natural state by removing water collection pipes and excluding cattle.

(Ex. 7, p. 491.)

In following these mitigation measures, the project will double the amount of riparian habitat in the Fisher Creek Riparian Corridor, from the current approximate 4.3 acres of riparian habitat to the post-construction 8.6 acres of riparian habitat. (2/15/01 RT 30.)

Area Trees. About 80 trees will be removed from the site. Of those 80 trees, 59 are County ordinance-sized trees; of these, 53 are City ordinance-sized trees. The following will mitigate any damage done by the removal of Santa Clara County and City of San Jose ordinance sized trees.

- Trees more than 18 inches DBH (diameter at breast height) will be replaced at a ratio of 4:1 using 24-inch box trees.
- Trees 12 to 18 inches DBH will be replaced at a ratio of 2:1 using 24-inch box trees.
- Trees less than 12 inches DBH will be replaced at a ratio of 1:1 using 15-gallon trees.
- Black Walnuts would be replaced by Valley oak, buckeye, sycamore, and coast live oak.
- English walnuts would be replaced by Valley oak.
- Coffeeberry would replace almond, olive, and fruit trees.
- To account for mortality losses of replacement trees, the total number of trees planted will be increased by 25% (for a total of 320 replacement trees).
- Three planting areas will be located along the riparian corridor. A fourth planting area will be located within a visual screen landscape corridor along the southern end of the MEC site.
- Shrubs planted on the site will include elderberry, coyote brush, and mule fat.
- Maintenance of the mitigation plants would occur for a period of at least two years.
- Monitoring and, if necessary, remedial planting, would occur for at least 3 to 5 years.

(Ex. 7, p. 491.)

These mitigation measures will result in the planting of 320 area-native trees, the seeds of which will be collected from the Santa Clara valley watershed. Including landscaping, between 800-900 trees will be planted for this project. (Ex. 7, p. 491; 2/15 RT 28-33.)

Tulare Hill Mitigation Measures – Transmission Lines. The mitigation below will be implemented during construction of the new 240-foot transmission line:

- Set up temporary construction zone limits using wooden stakes and flagging tape to delimit work areas.
- Limit equipment and workers to construction zones.
- Restrict construction activities as much as possible to late summer/early fall months (June through September) to avoid impacting breeding adult Bay checkerspot butterflies and Opler's longhorn moth.
- Use appropriate erosion control measures during wet weather months to prevent damage to serpentine habitat.
- Implement fire protection measures during construction.
- Use protective construction material in the impact zone to minimize soil compaction and damage to vegetation.
- Use protective material or water spray during construction to reduce dust and to protect dormant butterfly and moth larvae.
- Conduct post construction surveys to determine damage to annual host plant species and implement a restoration planting if necessary.
- Provide a monitoring report with pre- and post-construction photographs to document impacts and, if necessary, planting results.
- Conduct an avian collision monitoring program.

(Ex. 7, p. 492.)

Serpentine Soil Habitat – Bay Checkerspot Butterfly. To reduce impacts to serpentine endemics on Tulare Hill and Coyote Ridge, MEC will:

- Acquire and manage cattle grazing on the 116-acre parcel of Tulare Hill and 15 acres on Coyote Ridge in perpetuity.
- Implement an adaptive management strategy that depends on habitat responses to cattle grazing on Tulare Hill.

- Incorporate a contingency plan for fencing if grazing by other landowners on Tulare Hill affected the grazing strategy.
- Provide an endowment fund to be determined by the Center for Natural Lands Management PAR analysis to manage and administer compensation lands in perpetuity.

The 15 acres of land on Coyote Ridge will be adjacent to lands managed by the Open Space Authority, which is currently managing the Kirby Canyon Trust lands for the benefit of serpentine endemics. Therefore, the compensation will contribute to a larger regional scale effort to preserve special status species. Portions of the area also support red-legged frogs. Upland habitat for red-legged frogs will also be provided by securing lands on Tulare Hill.
(Ex. 7, pp. 492-494.)

vii. The Biological Opinion

USFWS Biological Opinion[76] on the MEC project was not available during the Committee hearings, however, this does not effect the issuance of the Commission's Decision. In our experience, the Biological Opinions are sometimes delivered during the course of hearings, or even after a Decision has been adopted by the Commission. (2/15/01 RT 210.)

In this instance, the Biological Opinion (dated March 7, 2001) was received by the Commission on March 23, 2001.[77] The final Biological Opinion does not conflict with our Conditions of Certification or the evidence of record, and we take official notice of that document.

[76] Entitled "Formal Endangered Species Consultation on the Prevention of Significant Deterioration Permit for the Proposed Metcalf Energy Center, San Jose, Santa Clara County, California."

[77] We note the extensive protestations of CARE concerning the timing of the Biological Opinion and the perceived lack of an "adaptive management" plan. We can only hope the formal Biological Opinion and the testimony (see, e.g. 2/15/01 RT 231-236) have lessened these concerns.

FINDINGS AND CONCLUSIONS

In light of the persuasive weight of the evidence of record, we make the following findings and reach the following conclusions:

1. No special status species exist on the project site.

2. Special status species, and suitable habitat for special status species, exist in the general project area.

3. The Conditions of Certification, below, provide compensation for potential project impacts to special status species.

4. The ratio used to devise the amount of habitat compensation required was based on conservative modeling assumptions.

5. The habitat compensation required is appropriate for the level of direct, indirect, and cumulative impacts to biological resources resulting from construction and operation of the proposed project.

6. Construction and operation of the proposed project will not create any significant biological resources impacts to the area's surface or ground waters.

7. The project will be constructed outside of riparian corridors; the relevant setback from the riparian corridor is 100 feet.

8. Project construction will result in a temporary disturbance to the setback from the Fisher creek riparian corridor.

9. The temporary disturbance into the riparian corridor setback caused by project construction will not create any significant adverse environmental impact.

10. The temporary disturbance into the riparian corridor setback caused by project construction will not conform with the City of San Jose's pertinent guidelines.

11. Significant noise impacts to animals and birds occur at continuous noise levels of approximately 80 dBA or higher.

12. Construction noise levels will temporarily exceed 80 dBA; operational noise levels will not.

13. The noise levels associated with construction and operation of the project will not cause significant adverse impacts to biological resources.

14. The noise levels associated with the project will not comply with the City of San Jose guidelines regarding riparian corridors.

15. The final federal Biological Opinion has been provided and considered in our evaluation.

16. The Biological Opinion does not conflict with the Conditions of Certification, below, nor require a reevaluation of the evidence of record.

17. The Conditions of Certification, below, are adequate to ensure that the project's impacts to biological resources are mitigated to below a level of significance.

We therefore conclude that project construction and operation will not create any significant direct or indirect impacts to biological resources, and that the project's contribution to cumulative impacts will be adequately mitigated. We further conclude that, with the exceptions noted in Findings 10 and 14 above, the project will comply with all applicable laws, ordinances, regulations, and standards contained in the appropriate portion of Appendix A of this Decision.

CONDITIONS OF CERTIFICATION

A. DESIGNATED BIOLOGIST

BIO-1 Construction site and/or ancillary facilities preparation (described as any ground disturbing activity other than Commission approved geotechnical work) shall not begin until an Commission Compliance Project Manager (CPM) approved Designated Biologist is available to be on-site.

Protocol: The Designated Biologist must meet the following minimum qualifications:

- A Bachelor's Degree in biological sciences, zoology, botany, ecology, or a closely related field and three years of experience in field biology;

- One year of field experience with biological resources found in or near the project area; and

- An ability to demonstrate to the satisfaction of the CPM the appropriate education and experience for the biological resources tasks that must be addressed during project construction and operation.

Verification: If the CPM determines the proposed Designated Biologist to be unacceptable, the project owner shall submit another individual's name and qualifications for consideration. If the approved Designated Biologist needs to be replaced, the project owner shall obtain approval of a new Designated Biologist by submitting to the CPM the name, qualifications, address, and telephone number of the proposed replacement. No disturbance will be allowed in any designated sensitive areas until the CPM approves a new Designated Biologist and the new biologist is on-site.

At least sixty (60) days prior to the start of any ground disturbance activities, the project owner shall submit to the CPM for approval the name, qualifications, address and telephone number of the individual selected by the project owner as the Designated Biologist. If a Designated Biologist is replaced, the information on the proposed replacement, as specified in the condition, must be submitted in writing at least ten (10) working days prior to the termination or release of the preceding Designated Biologist.

BIO-2 The CPM approved Designated Biologist shall perform the following during project construction and operation:

- Advise the project owner's Construction Manager on the implementation of the Biological Resource Conditions of Certification;

- Supervise or conduct mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as wetlands and special status species; and

- Notify the project owner and the CPM of any non-compliance with any Biological Resources Condition of Certification.

Verification: During project construction, the Designated Biologist shall maintain written records of the tasks described above, and summaries of these records shall be submitted along with the Monthly Compliance Reports to the CPM. During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report.

BIO-3 The project owner's Construction Manager shall act on the advice of the Designated Biologist to ensure conformance with the Biological Resources Conditions of Certification.

Protocol: The project owner's Construction Manager shall halt, if necessary, all construction activities in areas specifically identified by the Designated Biologist as sensitive to assure that potential significant biological resources impacts are avoided.

The Designated Biologist shall:

- Inform the project owner and the Construction Manager when to resume construction, and
- Advise the CPM if any corrective actions are needed or have been instituted.

Verification: Within two (2) working days of a Designated Biologist notification of non-compliance with a Biological Resources Condition of Certification or a halt of construction, the project owner shall notify the CPM by telephone of the circumstances and actions being taken to resolve the problem or the non-compliance with a condition. For any necessary corrective action taken by the project owner, a determination of success or failure will be made by the CPM within five (5) working days after receipt of notice that corrective action is completed, or the project owner will be notified by the CPM that coordination with other agencies will require additional time before a determination can be made.

B. BIOLOGICAL RESOURCES MITIGATION IMPLEMENTATION & MONITORING PLAN

BIO-4 The project owner shall submit to the CPM for review and approval a copy of the final Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) and, once approved, shall implement the measures identified in the plan.

Protocol: The final BRMIMP shall identify:

- All Biological Resource Conditions included in the Commission's Final Decision;

- All mitigation measures identified by Calpine/Bechtel and listed under Mitigation, Calpine/Bechtel's Proposed Mitigation Measures in the Biological Resources portion of the FSA (Exhibit 7);

- A list and a map of locations of all sensitive biological resources to be impacted, avoided, or mitigated by project construction and operation;

- A list of all terms and conditions of the USFWS Biological Opinion, the USACE 404 permits, and the Santa Clara County's Agreement;

- A detailed description of measures, Best Management Practices, and take avoidance measures that will be implemented to avoid and/or minimize impacts to sensitive species and reduce habitat disturbance;

- All locations, on a map of suitable scale, of laydown areas and areas requiring temporary protection and avoidance during construction;

- Aerial photographs (scale 1:200) of all areas to be disturbed during project construction activities - one set prior to site disturbance and one set after project construction. Include planned timing of aerial photography and a description of why times were chosen;

- Duration for each type of monitoring and a description of monitoring methodologies and frequency;

- Performance standards to be used to help decide if/when proposed mitigation is or is not successful;

- All performance standards and remedial measures to be implemented if performance standards are not met;

- A discussion of biological resource-related facility closure measures; and
- A process for proposing plan modifications to the CPM and appropriate agencies for review and approval.

Verification: At least forty-five (45) days prior to start of any project-related ground disturbance activities, the project owner shall provide the CPM with the final version of the BRMIMP for this project, and the CPM will determine the plan's acceptability. The project owner shall notify the CPM five (5) working days before implementing any CPM approved modifications to the BRMIMP.

Within thirty (30) days after completion of project construction, the project owner shall provide to the CPM for review and approval a written report identifying which items of the BRMIMP have been completed, a summary of all modifications to mitigation measures made during the project's construction phase, and which mitigation and monitoring plan items are still outstanding.

C. RIPARIAN RESTORATION

BIO-5 Prior to the start of any ground disturbance activities, the project owner shall develop the riparian corridor planting plan for inclusion into the Biological Resources Mitigation Implementation and Monitoring Plan. The protocol shall include a thorough discussion of methods, species, and location for plantings, erosion control, criteria for success, a monitoring program, and a reporting requirement. The plan shall include an inclusive list of herbicides and application

procedures that will be used within the 10-foot area surrounding the fence line. If the CPM determines that the plan requires modification, the project owner shall modify the report based on the CPM's comments.

Verification: At least forty-five (45) days prior to the start of any ground disturbance activities, the project owner shall provide to the CPM for review and approval the above riparian restoration plan.

D. WORKER ENVIRONMENTAL AWARENESS PROGRAM

BIO-6 The project owner shall develop and implement a CPM approved Worker Environmental Awareness Program in which each of its employees, as well as employees of contractors and subcontractors who work on the project site or related facilities during construction and operation, are informed about sensitive biological resources associated with the project.

Protocol: The Worker Environmental Awareness Program must:

- Be developed by the Designated Biologist and consist of an on-site or training center presentation in which supporting written material is made available to all participants;
- Discuss the locations and types of sensitive biological resources on the project site and adjacent areas;
- Present the reasons for protecting these resources;
- Present the meaning of various temporary and permanent habitat protection measures; and
- Identify whom to contact if there are further comments and questions about the material discussed in the program.

The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist.

Each participant in the on-site Worker Environmental Awareness Program shall sign a statement declaring that the individual understands and shall abide by the guidelines set forth in the program materials. The person administering the program shall also sign each statement.

Verification: At least sixty (60) days prior to the start of rough grading, the project owner shall provide copies of the Worker Environmental Awareness Program and all supporting written materials prepared by the Designated Biologist and the name and qualifications of the person(s) administering the program to the CPM for approval. The project owner shall state in the Monthly

Compliance Report the number of persons who have completed the training in the prior month and keep a record of all persons who have completed the training to date. The signed statements for the construction phase shall be kept on file by the project owner and made available for examination by the CPM for a period of at least six (6) months after the start of commercial operation. During project operation, signed statements for active project operational personnel shall be kept on file for the duration of their employment and for six (6) months after their termination.

E. CALIFORNIA DEPARTMENT OF FISH & GAME PERMITS

BIO-7 Prior to start of any streambed disturbance activities, the project owner shall acquire a Streambed Alteration Agreement from CDFG in accordance with Section 1603 of the California Fish and Game Code and implement the permit terms and conditions.

Verification: No less than fifteen (15) days prior to the start of any project related ground disturbance activities, the project owner shall submit to the CPM a copy of the final CDFG Streambed Alteration Agreement. Agreement terms and conditions shall be incorporated into the Biological Resources Mitigation Implementation and Monitoring Plan.

F. U. S. FISH & WILDLIFE SERVICE SECTION 7 BIOLOGICAL OPINION

BIO-8 Prior to the start of any ground disturbance activities, the project owner shall provide a final copy of the USFWS Biological Opinion in accordance with Section 7 of the federal Endangered Species Act and incorporate the terms of the biological opinion into the Biological Resources Mitigation Implementation and Monitoring Plan. The project owner shall implement the terms and conditions contained in the Biological Opinion.

At least forty-five (45) days prior to the start of any project related ground disturbance activities, the project owner shall submit to the CPM a copy of the USFWS Biological Opinion. Permit terms and conditions will be incorporated into the Biological Resources Mitigation Implementation and Monitoring Plan.

G. U.S. ARMY CORPS OF ENGINEERS PERMIT

BIO-9 Prior to the start of any ground disturbance activities, the project owner shall provide a final copy of the Nationwide No.7 permit in accordance with Section 404 of the Clean Water Act. The project owner shall implement the terms and conditions contained in the permit.

Verification: At least thirty (30) days prior to the start of any project related ground disturbance activities, the project owner shall submit to the CPM a copy of the Nationwide No. 7 permit. Permit terms and conditions shall be

incorporated into the Biological Resources Mitigation Implementation and Monitoring Plan.

H. HABITAT COMPENSATION

BIO-10 To compensate for impacts to serpentine soils and associated endemic species, the project owner shall provide 116 acres of land on Tulare Hill and 15 acres of land on Coyote Ridge, the name of the entity that will be managing the land in perpetuity, and the endowment funds in the amount determined suitable from the Center for Natural Lands PAR analysis to administer and manage in perpetuity. Each of these shall be pre-approved by the Commission, CPM and USFWS.

Verification: Within one (1) week of project certification, the project owner shall provide to the CPM for approval the name of the management entity, written verification that the compensation lands have been purchased, and written verification that the appropriate endowment fund (determined by the PAR analysis) has been received by the approved management entity.

BIO-11 The project owner, in consultation with the USFWS and Commission staff, shall develop a suitable final habitat management and monitoring plan for lands purchased on Tulare Hill (116 acres) and Coyote Ridge (15 acres).

At least sixty (60) days prior to the start of any project-related ground disturbance activities, the project owner shall provide the CPM with the final approved version of the management plan. Once the plan is approved, it shall be incorporated into the BRMIMP.

I. FACILITY CLOSURE

BIO-12 The project owner shall incorporate into the planned permanent or unexpected permanent closure plan measures that address the local biological resources. The biological resources facility closure measures shall also be incorporated into the project BRMIMP.

Verification: At least twelve (12) months (or a mutually agreed upon time) prior to the commencement of closure activities, the project owner shall address all biological resources-related issues associated with facility closure in a Biological Resources Element. The Biological Resources Element shall be incorporated into the Facility Closure Plan, and include a complete discussion of the local biological resources and proposed facility closure mitigation measures.

J. SITE PREPARATION

BIO-13 Prior to initial project site mobilization (i.e., placing a trailer on-site with accompanying equipment, utilities, and grading) the project owner shall comply

with **BIO-1**, **BIO-2**, and **BIO-10** and complete **BIO-6** as it pertains to management, supervisors, and workers involved in this undertaking. Prior to the initial site mobilization, the designated biologist shall examine the area and ensure no special status species are present.

Verification: At least ten (10) days prior to engaging in the initial project site mobilization defined in this condition, the project owner shall provide the CPM with the location of the initial mobilization site, and the date(s), methods(s), and results of the pre-examination. The document shall be reviewed and approved by the CPM.

B. SOIL AND WATER RESOURCES

This portion of the Decision concentrates on the project's potential to induce erosion and sedimentation, adversely affect surface and groundwater supplies, degrade surface and groundwater quality, and increase the potential for flooding.[78]

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Soils

The facility as proposed would be situated on the southern base of Tulare Hill, which sits at the northern edge of the Coyote Valley, on a site currently zoned for agriculture.[79] (Ex. 7, p. 512; Ex. 31, p. 3.) The area is occupied by several structures, and is used for grazing and storage. After construction, the laydown area will be returned to agricultural production. Linear facilities include a 240-foot transmission line, water supply and wastewater discharge lines, and a natural gas line. (Ex. 7, p. 513.)

Soils in the location of the project consist of sands, gravels, and finer grained sediment that were deposited as alluvium by Coyote Creek and, to some degree its tributary, Fisher Creek. Predominant soil types in the alluvial fan deposits are Los Robles clay loam, Yolo silty clay loam, and Sunnyvale silty clay. At the distal

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[78] Accelerated wind and water induced erosion will result from earth moving activities associated with construction of the MEC. (Ex. 7, p. 523.) Removal of the vegetative cover and alteration of the soil structure leaves soil particles vulnerable to detachment and erosion. The facility and associated linear facilities are located in a region with wet, moderate temperature winters, and dry, moderate to high temperature summers, with an average rainfall of approximately 14 inches per year. (Ex. 7, p. 512.) Eighty percent of the precipitation in the area occurs between November-March; the 100-year, 24-hour storm will produce rainfall depths of 6.89 inches.

[79] The Coyote Valley is in the Santa Clara valley, which extends from the San Francisco Bay south to Hollister, bordered by the Diablo Range on the east and the Santa Cruz Mountains and the Gabilan Range on the west. (Ex. 7, p. 512.)

edges of the fan in the northern part of the Coyote Valley, finer-grained sediments are found overlain with clayey soils. This region of the Coyote Valley is referred to as the Laguna Seca and, prior to the installation of a drainage system, was subject to periodic flooding. (Ex. 7, p. 513.)

Several soil mapping units will be encountered in the construction of this project, most derived from sedimentary alluvium and in excess of five feet to bedrock. At the proposed plant site, two soil mapping units are present. Approximately half of the site is Sunnyvale silty clay characterized as poorly drained clay that has a low permeability. The other half of the site is Yolo silty clay loam characterized as well-drained clay that has moderate permeability. Both soil-mapping units have slopes ranging from zero to two-percent, and have an erosion hazard rating of “none to slight.” (Ex. 7, p. 513.)

A 240-foot, 230 kV transmission line will be strung between the power plant’s switchyard to PG&E’s existing system with no additional structures required. Soils along this route include the Sunnyvale silty clay and Montara rocky clay loam. Montara rocky clay loam is shallow (approximately one foot to bedrock), excessively drained soil with moderately rapid permeability. Slopes encountered with this soil will be between 15 and 50 percent and are rated “moderate to high” for erosion hazard. (Ex. 7, p. 513.)

The route for the proposed wastewater discharge line and one of the water supply lines consists of Sunnyvale silty clay and Clear Lake clay. Clear Lake clay is somewhat poorly drained with slow permeability. The slopes and erosion hazard for Clear Lake clay are the same as for Sunnyvale silty clay. The route proposed for the groundwater supply line to two new wells will encounter entirely Yolo silty clay loam. (Ex. 7, p. 513.)

Several natural gas pipeline routes are proposed to connect the MEC plant to PG&E’s existing line just east of U.S. 101. (Ex. 7, p. 513.) Major soil mapping

units likely to be encountered along these proposed routes include Montara rocky clay loam, Yolo silty clay loam, Riverwash, Cropley clay, Los Robles clay loam, Cortina very gravelly loam, San Benito clay loam, Climara clay, and Maxwell clay. Riverwash is made up of loose sand, gravel, and cobblestone. It is subject to movement by water flows and has excessive drainage. Cropley clay is well drained with slow permeability, slopes between zero and two percent, and has a "none to slight" erosion hazard rating. Los Robles clay loam is well drained with moderately slow permeability, slopes between two and nine percent, and has an erosion hazard rating of "slight to moderate." Cortina very gravelly loam drains somewhat excessively, has rapid permeability, slopes between zero and five percent, and has a "none to slight" erosion hazard. San Benito clay loam drains well, has moderately slow permeability, slopes between 30 and 50 percent, and has a "high" erosion hazard rating. Climara clay drains well, has slow permeability, slopes between 15 and 50 percent, and has a "high" erosion hazard. Maxwell clay is moderately well drained, has slow permeability, slopes between two and five percent, and has an erosion hazard rating of "none to slight". (Ex. 7, pp. 513-14.)

The proposed route for the recycled water supply line is referred to as the "SBWR Route." (1/18/01 RT 88-89.) The majority of the route will encounter Yolo silty clay loam, Campbell silty clay, and Zamora clay loam. (Ex. 7, p. 514.) Campbell silty clay is somewhat poorly drained with moderately slow permeability. Slopes are less than one percent and the erosion hazard is "none to slight". Zamora clay loam is well drained with moderately slow permeability. Slopes are zero to two-percent and the erosion hazard is "none to slight." Because this route is located in an area that is mostly developed, these soils have already experienced disturbance.[80] **Soil and Water Resources Table 1,** below, contains estimates of the amount of land disturbance associated with the proposed project.

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[80] For a complete list of the soil types and their characteristics, refer to section 8.9.1.7 of Exhibit 1 and Exhibit 3, Figures 3.9-1a and 1b.

SOIL & WATER RESOURCES Table 1
Estimated Land Disturbance

Project Component	Construction (acres)	Operation (acres)
Generating Plant (includes temporary construction laydown area)	40	20
Transmission Line	0	0
Natural Gas Pipeline	11	0
Water Pipelines*		
Reclaimed Water (SBWR)	85.2	0
Segment B-3*	4.1	0
Potable to Well 23	11.4	0
Access Roads		
To Blanchard Rd.	0.6	0.6
Western Access	2.5	1.8
Total	154.8	22.4

Source: Exhibit 7, p. 523
*Portions of the water lines will run under the Western Access Road and is accounted for in the access road acreage.
**Segment B-3 includes the domestic water, sewer, and wastewater lines to Santa Teresa Boulevard.

a. Erosion Control

Affected soils range from “none to high” in terms of susceptibility to erosion. (Ex. 7, p. 523.) Once the protective cover of vegetation is removed and the structure of the surface soil has been altered, however, all of these soils can be highly vulnerable to erosion. Site preparation will include excavation, grading, removal of vegetation, and storage and disposal of various materials. Where possible, topsoil will be removed from the power plant site and stored for use in revegetation efforts. (Ex. 7, p. 524.)

Approximately 10.7 acres of the site will be raised 5 feet above the existing levees separating Fisher Creek from the plant site; this will provide a level area for the power plant at an elevation of 255 feet above mean sea level (msl). Applicant will obtain 95,000 to 100,000 cubic yards of fill from a qualified supplier in the south Bay Area to attain this elevation. (Ex. 7, p. 523.)

Slopes for perimeter embankments will be sloped to 3:1 (horizontal: vertical) and those near the detention basin will be 4:1. Applicant will revegetate the side slopes (including the grade between the cooling towers and the setback area) of the site to prevent erosion. Surface materials used at the site will include concrete, asphalt and /or gravel. Graded surfaces will have a mild slope of about one percent resulting in surface runoff flowing toward the southwest of the site to the detention pond. The cooling tower pad will be graded away from the riparian corridor. (Ex. 7, p. 524.)

Two new roads will be cleared and graded to allow access to the MEC site. Connecting the site to Monterey Highway, a two-lane road will parallel the Union Pacific Railroad (UPRR) tracks and provide a crossing at Blanchard Road. The road will be approximately 32 feet wide and covered with an asphalt/concrete mix. The 2-lane western access road will be approximately 1,500 feet long; it also will be covered with an asphalt/concrete mix. Applicant indicates that this road will connect into the proposed Coyote Valley Research Park (CVRP) road system and will be constructed only if certain pre-conditions are met. (Ex. 7, p. 524.) If constructed, it may result in minor changes to the routes for the water-related pipelines.

New temporary and permanent disturbances will occur as a result of constructing and operating the new linear facilities such as trenching, grading, and backfilling. (Ex. 7, p. 524.) The 240-foot, 230 kV transmission line will be strung between the power plant's switchyard to PG&E's existing system; minimal soil disturbance is expected. (Ex. 7, p. 524.) As proposed, the natural gas line will be buried. (Ex. 7, p. 524.) Horizontal directional drilling will be used to place the natural gas pipeline below roadways and Coyote Creek.

Applicant proposes that recycled water will be delivered to the power plant via a new underground 10-mile connection to the South Bay Water Recycling (SBWR) plant's 42-inch supply main located in Senter Road near Capital Expressway.

The majority of this route is along existing roadways through residential and business districts. At Santa Teresa Boulevard, the recycled water supply line will travel north through predominately residential neighborhoods to the SBWR mainline near Senter Road and Capital Expressway. (Ex. 7, p. 524.)

Applicant proposes to place a portion of the recycled water supply pipeline, possibly along with the project's other water supply lines[81] in a single corridor approximately 66 feet wide and 0.8 miles long. (Ex. 7, p. 524.) Three separate trenches no less than 10 feet apart (per City of San Jose requirements), each approximately five feet deep and four feet wide, will run along the south side of Fisher Creek from the MEC site to utilities located in Santa Teresa Boulevard, west of the site. (Ex. 7, pp. 524-525.)

The evidence of record is uncontradicted in establishing project construction and operation will not create any significant impacts to the area's soils (1/18/01 RT 29-30; Ex. 8, p. 10) in light of identified mitigation measures and the final erosion control and revegetation plan incorporated in Condition of Certification **SOIL&WATER-3**. (Ex. 7, pp. 539-541, 571-572.)

2. Stormwater Management

A system of ditches, culverts, catch basins, and maintenance holes will convey stormwater to an unlined stormwater detention basin that will discharge directly to Fisher Creek. The Santa Clara Valley Water District (SCVWD) has specified that the stormwater detention pond will need to be sized and operated to accommodate the increased site runoff due to impervious surfaces (10 acres) to

[81] Other proposed water supply pipelines include a 1.25-mile, 24-inch pipeline along the western portion of the railroad right-of-way from the MEC to San Jose MUNI Well 23 near Bailey Road, and a pipeline from the MEC site to Great Oaks Water Company's system located in Santa Teresa Boulevard. (Ex. 7, p. 525.)

maintain post-development peak storm discharges at or below pre-development rates. (Ex. 7, p. 525.)

The stormwater detention pond will be located in the southwest corner of the site to conform to the City of San Jose's riparian corridor setback. (1/18/01 115-117; Ex. 4.) This basin will be sized to provide protection against the 10-year and 100-year, 24-hour storm events. The top of the basin will be at approximately 254 feet above msl with a total capacity of 1.9 acre-feet. (1/18/01 RT 209; Ex. 4; Ex. 7, p. 525.)

In addition, and as required by SCVWD, the discharge pipe will be placed in the levee that separates the creek from the site (rather than in an open swale as originally proposed). (Ex. 7, p. 525.) Applicant will cut a trench, position the pipe, and replace the topsoil with a rip rap apron from the outfall into Fisher Creek.

Construction of the stormwater discharge structure to Fisher Creek requires Nationwide Permit Number 7 from the U.S. Army Corp of Engineers, and a 401 certification from the San Francisco Regional Water Quality Control Board (SFRWQCB). (Ex. 7, pp. 519; 525.) A Streambed Alteration Agreement (SAA) must be procured from the California Department of Fish and Game for both the levee related work and the drilling underneath Coyote Creek. (Ex. 7, p. 525.)[82]

Applicant must also to comply with the general National Pollution Discharge Elimination System (NPDES) permits for both construction and operation of the MEC. (Ex. 7, p. 525.) NPDES permits include requirements for the development and implementation of a Stormwater Pollution Prevention Plan. Applicant has developed a revised draft Erosion Control and Stormwater Management Plan

[82] Copies of draft permit applications were submitted for Staff's review. (Ex. 7, p. 525.) In addition, Applicant, as part of its draft example of an SAA, is proposing measures to reduce or eliminate sedimentation and erosion such as silt fencing, hay bales, and revegetation.

(ECSMP) as well as a Stormwater Pollution Prevention and Monitoring Plan (SPPMP) for the project.

The evidence establishes that surface water discharges will be appropriately handled (1/18/01 RT 31-32; Ex. 7, p. 540), and Conditions of Certification **SOIL&WATER-2, 4, 5**, and **7** ensure that these concerns will be adequately addressed in accord with applicable law. The evidence further establishes that the project will not significantly impact either the water surface level or the velocity of flows in Fisher Creek during a 100-year flood event. (1/18/01 RT 27, 126-132.)

3. Surface Water

Two creeks are located adjacent to the proposed power plant site. Fisher Creek forms the north and west boundary of the proposed site and is a tributary to Coyote Creek. Small earthen levees separate the site and Fisher Creek. Fisher Creek empties into Coyote Creek just northeast of the site. Coyote Creek flows north approximately 38 miles to the San Francisco Bay. These creeks are considered as both “gaining” and “losing” creeks: at points along their routes and depending on the season, the creeks recharge groundwater through percolation (losses) and/or are recharged by groundwater (gains). (Ex. 7, p. 514; Ex. 8 & Attach. A.) In Coyote Valley, Coyote Creek is essentially a “losing” creek.

The total watershed area for the creeks is 15 square miles and designated beneficial uses for Coyote Creek include wildlife habitat, species preservation, and recreation. (Ex. 7, p. 514.) No specific beneficial uses are designated for Fisher Creek. The evidence does not suggest the project would create significant impacts to surface water. (See also, Ex. 7, pp. 488-490.)

4. Groundwater Hydrology

Santa Clara Valley is underlain by the Santa Clara Valley Groundwater Basin. This basin is divided into three hydraulically connected subbasins, with flows trending northward. The Santa Clara Valley Subbasin, with a surface area of 225 square miles (22 miles long and 15 miles wide), extends from the Coyote Narrows to the County's northern boundary. SCVWD estimates operational capacity of the Santa Clara Groundwater Subbasin to be 250,000 acre feet per year (AFY). (Ex. 7, p. 514.) At the Coyote Narrows (identified as a cascade), approximately 5,000 AFY of groundwater flows from Coyote Valley Subbasin north to Santa Clara Valley Subbasin. (Ex. 7, p. 514.)

The Coyote Valley Subbasin extends from the Coyote Narrows south to Cochran Road with a surface area of approximately 15 square miles (7 miles long by 2 miles wide). (Ex. 7, pp. 514-15) SCVWD has not yet determined an annual operational capacity for the Coyote Valley Subbasin. However, the Department of Water Resources' (DWR) 1980 projected annual safe yield of the Subbasin was 10,600 AFY. (Ex. 7, pp. 514-515.)

In 1995, total Coyote Valley Subbasin annual groundwater extraction was estimated at 10.7 million gallons a day (mgd) or 12,000 AFY. Applicant, in cooperation with the SCVWD, recently conducted a groundwater analysis to assess the current condition of the Subbasin. Using SCVWD data, Applicant estimated that the Coyote Valley Subbasin is roughly in balance: total estimated inflows and outflows are approximately 20,000 AFY. The Basin is recharged by surface water percolation, rainfall, irrigation returns, and runoff from bedrock uplands and subsurface inflows from bedrock basin boundaries. (Ex. 7, p. 515.)

Separated by a topographic divide, Coyote Valley Subbasin also flows into Llagas Subbasin to the south. The Llagas Subbasin runs from Cochran Road to the County's southern boundary. It is approximately 15 miles long and 3 miles

wide, covering a surface area of approximately 74 square miles. In 1980, DWR estimated the safe yield of Llagas Subbasin to be 68,700 AFY and, since then, SCVWD has increased this to an operational capacity of 150,000 AFY. The Regional Water Quality Control Board has designated beneficial uses for Santa Clara Valley Groundwater Basin to include municipal, domestic, industrial process, and industrial service uses, as well as agricultural water supplies; beneficial uses for the subbasins are not differentiated. (Ex. 7, p. 515.)

5. Water Uses, Sources, and Impacts

The Metcalf Energy Center will use water for cooling, steam cycle process uses, fire protection, construction, and domestic purposes. Applicant proposes to use a combination of reclaimed water and groundwater to meet these needs, and has identified several potential water purveyors. In addition, the project will produce wastewater which must be appropriately disposed.

This topic was a wellspring of discussion, especially at the January 18, 2001 evidentiary hearing, and the post-hearing submissions gush with argument concerning this matter. After an extensive review of the stream of information contained in the record, however, we believe the evidence can be distilled as follows.

a. Providers of Water

The evidence identifies the following entities as potential providers of project water:

- South Bay Water Recycling Program (SBWR): This is a joint powers agency, and an adjunct of the San Jose/Santa Clara water pollution control plant. It is administered by the City of San Jose (City) on behalf of the joint powers agency. (1/18/01 RT 365: 13-20.) SBWR is the sole source of reclaimed water in the area, and functions as a

water *wholesaler*. (1/18/01 RT 76-77, 94, 211-212.) Applicant will purchase water from a water *retailer*. (1/18/01 RT 211:18-19.)

- San Clara Valley Water District (SCVWD): This entity is the countywide water management agency for Santa Clara County. (1/18/01 RT 60:8-9.) The SCVWD is primarily a water wholesaler (1/18/01 RT 362:7-8), which generally defers to the water retailer ". . . in those areas where there is an established service area by a water retailer." (1/18/01 RT 361:21-24.) The District may, however, provide water service to individual customers where there is not an established retailer. (1/18/01 RT 361: 25 to 362:1-3.) Applicant has identified SCVWD as a potential wholesaler for potable water. (1/18/01 RT 211:15-17, 212:5-8.) The SCVWD does not have an agreement with SBWR which would allow SCVWD to receive recycled/reclaimed water in sufficient quantities to supply the MEC's needs for this type of water (1/18/01 RT 412:1-8), nor is there another source of recycled/reclaimed water available to SCVWD. (1/18/01 RT 412:9-13.)

- San Jose Municipal Water System Division (MUNI): This governmental component serves four areas of San Jose, including Coyote. MUNI well 23 is in the project vicinity, and has a capacity of 300 gallons per minute (gpm). The City has indicated that well 23 would not be available to supply water needs of the project. (Ex. 7, pp. 517-18.) Currently, MUNI is the only licensed retailer of SBWR recycled/reclaimed water in the area. (1/18/01 RT 212:10-13; Ex. 7, p. 526.)

- Great Oaks Water Company (Great Oaks): This is an investor owned utility regulated by the California Public Utilities Commission (CPUC). Currently, Great Oaks is a retailer of potable water in the San Jose area; it does not serve the MEC project area, but has requested permission to do so from the CPUC. (Ex. 7, pp. 518-519.) This request is pending. (1/18/01 RT 103-104, 380.) Great Oaks is not currently a retailer of reclaimed water (1/18/01 RT 77), nor does it control facilities necessary to convey reclaimed water to customers. (1/18/01 RT 68:25 to 69:2; Ex. 7, p. 519.) In order to become a retailer of reclaimed water, Great Oaks would need an agreement with SBWR. (1/18/01 RT 223-225.) Applicant stated, however, that Great Oaks has " . . . indicated a willingness . . . " to provide either potable or recycled water service. (1/18/01 RT 45: 22-24.)

The evidence establishes that Applicant intends to be a customer of an appropriate water purveyor in that it will purchase project water from a single water retailer, rather than from a water wholesaler. (1/18/01 RT 94:23-25,

211:18-19, 212:20-24; Ex. 7, p. 526.) The evidence further establishes that Applicant has not yet identified the project's water purveyor (1/18/01 RT 70:20-21), nor has it yet secured agreements for the project's water supply. (1/18/01 RT 251:12-16.)

The water demands for the project are summarized in **Soil and Water Resources TABLE 2:**

SOILS & WATER RESOURCES Table 2

Estimated Water Demand for the MEC

Project Element	**Water Type**	**Quantity***
Peak Operating Conditions - 90 Degrees F, 5 Cycles of Concentration		
Cooling Towers	Recycled	3,094 gpm/4.5 mgd **(4.7 mgd)****
Industrial Processes and Domestic Uses		
Steam Cycle Make-up		223 gpm
Evaporative Cooling		105 gpm
Oil/Water Separator		10 gpm
Domestic		2 gpm
Total	Potable	350 gpm/0.5 mgd **(0.7 mgd)****
Average Operating Conditions - 60 Degrees F, 5 Cycles of Concentration		
Cooling Towers	Recycled	1,953 gpm/2.8 mgd **(3.3 mgd)****
Industrial Processes and Domestic Uses		
Steam Cycle Make-up		49 gpm
Evaporative Cooling		24 gpm
Oil/Water Separator		10 gpm
Domestic		2 gpm
Total	Potable	85 gpm/0.1 mgd **(0.2 mgd)****

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Source: Exhibit 7, p. 522

These water demands are discussed further, below.

b) Groundwater.

The MEC will use groundwater for about ten percent of its water needs. (1/18/01 RT 20.) Groundwater would not be used as the principal source of cooling water.[83] Under normal conditions, groundwater will be used to support steam cycle and domestic water requirements; under unusual circumstances, groundwater will be used as a back-up supply for the cooling system. (1/18/01 RT 20, 57, 172; Ex. 7, p. 527.) The use of groundwater would thus vary from about 0.2 million gallons per day (224 AFY) normally to about 0.69 milliion gallons per day (940 AFY) during peak useage. (1/18/01 RT 20, 111-112; Ex. 7, p. 527.) Applicant estimates two new wells would be required for groundwater supply from its water retailer. These wells would be located south of the site, and require about 1000 feet of pipeline. (1/18/01 RT 79-80.)

Interruptions to the normal cooling water supply (and thus the need to use groundwater for cooling) are expected to occur two to three times per year for up to 72 hours' duration. In the event of longer interruptions, use of groundwater for cooling purposes is limited to a thirty day continuous duration, and cannot exceed a total of forty-five days annually. (1/18/01 RT 249, 303-304; see Condition of Certification **SOIL&WATER-1** and **8**.)

The analysis of record considered the groundwater impacts of the MEC, along with those potentially attributable to the Coyote Valley Research Park development. (1/18/01 RT 46-47; Ex. 7, p. 528; Ex. 8, p. 9.) This analysis detailed the modeling approach used. (See e.g. 1/18/01 RT 133-142; Ex. 7, pp. 560-566.) Overall, the evidence is uncontradicted and establishes that operation of the MEC alone, with its continual extraction for domestic and process water

[83] The environmental impacts of using groundwater as the primary source of cooling water have not been analyzed. (1/18/01 RT 57:16-20.)

needs as well as occasional withdrawal for back-up supplies, will have only a negligible impact on groundwater levels (Ex. 7, p. 528), even in drought year conditions. (1/18/01 RT 28.) Moreover, the evidence further indicates that there is no significant difference in groundwater impacts when also considering the operation of the proposed Coyote Valley Research Park since the SCVWD has identified in its Integrated Water Resource Plans various measures to appropriately manage the water basin. (1/18/01 RT 33-34; Ex. 7, pp. 528-529; Ex. 8, p. 10.)

c) Reclaimed/Recycled Water

The MEC intends to use reclaimed/recycled water for approximately ninety percent of project needs. (1/18/01 RT 19-20.) This amounts to about 3.3 million gallons per day on average (1/18/01 RT 20:12-14), with a peak usage of 4.5 million gallons per day. (1/18/01 RT 110:9-12.) This water would used as cooling water, with approximately 2.7 million gallons per day on average being evaporated and the remainder (0.6 million gallons per day on average) becoming wastewater discharge. (1/18/01 RT 22; Ex. 8, pp. 7-8.)

The City encourages use of reclaimed/recycled water for cooling purposes in cooling tower applications (1/18/01 RT 399), and such use is necessary in this case to comply with State Water Resources Control Board Policy 75-58. (1/18/01 RT 267-268, 346-347.) As mentioned above, SBWR is the sole wholesaler of reclaimed/recycled water in the area. SBWR is capable of delivering up to 50 million gallons per day of unrestricted quality reclaimed water for irrigation and industrial uses; of this amount, current peak summer demands are 11.3 million gallons per day. (Ex. 7, p. 520.) While SBWR thus has sufficient water capacity to supply project needs, a 10.2 mile pipeline would need to be constructed to deliver reclaimed water for use by the power plant.[84] (1/18/01 RT

[84] Applicant proposes a 20-inch diameter pipeline to meet project needs. There is discussion in the record concerning SBWR's apparent preference for a 42-inch pipeline to accommodate future

20-21, 70:22-25, 87-89.) The MEC would be one of the largest users of SBWR water. (1/18/01 RT 415.)

Discussion of the MEC's use of SBWR water identified two possible impacts: increased salinity; and perceived marketability constraints resulting from this increase.

Currently the overall salinity (TDS) levels of the reclaimed/recycled water which would be delivered to the MEC are about 782 milligrams per liter (mg/l); the wastewater returned by the MEC would result in an increase to this level of concentration of about three percent, or to 803 mg/l. (1/18/01 RT 24, 26;7-13; Ex. 7, p. 531.) About ninety-five percent of this increased salinity is due to return of the source water itself; the remaining five percent increase is due to additions from the project. (1/18/01 RT 26-27.) The evidence further establishes that, in an Environmental Impact Report prepared by the City for the SBWR program, ranges of salinity of between 800 mg/l and 900 mg/l were evaluated, and it was concluded that levels of salinity in this range were acceptable. (1/18/01 RT 218-219.) Other evidence also establishes that the MEC's use of SBWR water will not significantly degrade water quality, nor create significant adverse environmental impacts. (1/18/01 RT 43:22-25 to 44:1-4; 271:1-9.) This evidence is uncontradicted.

Although the record contains no persuasive showing to suggest that this increased salinity level is a significant environmental impact, the record also establishes that there exists a difference over the perceived effect of this increased salinity upon the marketability of SBWR water to other customers. Presently, SBWR sells water mostly for irrigation uses such as at golf courses; SBWR also either uses, or intends to use, the water for stream flow

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uses. (See, e.g., 1/18/01 RT 21, 405-406; Ex. 65.) However, there is no firm proposal to install this larger pipeline. Therefore, any "growth-inducing impacts" associated with this possible upsizing are too speculative to be considered here.

augmentation, indirect potable recharge, and for expansion into other industrial sectors. (1/18/01 RT 413-417.)

Applicant characterizes the MEC's use of SBWR water as a benefit to the City since such use will: allow the City to move toward compliance with Regional Water Quality Control Board Order No. 98052 by reducing the amount of water discharged into San Francisco Bay; increase the demand for SBWR water; provide for new connections to the sewer system and treatment plant; and avoid the cost of additional disposal capacity. (1/18/01 RT 21-24.) In Applicant's view, the MEC's use will "enhance" the marketability of SBWR water. (1/18/01 RT 24:24.) The City (and thus SBWR) apparently remain unconvinced.

It is not within our province to determine as a factual matter the persuasiveness of these considerations. Even though it is clear that project use of SBWR water will not result in a significant degradation in the quality of that water, the record clearly establishes that a substantial difference of opinion currently exists between the Applicant and the City concerning the effects of the project's use of SBWR water upon the perceptions for the marketability of that water. (1/18/01 RT 43-44; 392-394.) We can, however, examine whether any concerns associated with salinity increases to the SBWR reclaimed/recycled water can be appropriately ameliorated, if ultimately necessary.

d) Wastewater Discharge

Of the average 3.3 million gallons per day of reclaimed water which would be used by the MEC, an average 0.6 million gallons per day is wastewater. This wastewater would be discharged directly into the City's sanitary sewer line, located on Santa Teresa Boulevard, via a 0.8 mile long, 12-inch forced main. This wastewater would then be conveyed to the San Jose/Santa Clara Water

Pollution Control Plant,[85] and would ultimately be sent to San Francisco Bay or back into the SBWR system. (1/18/01 RT 21.) This is the discharge which creates the salinity increase and perceived marketability issue discussed above.

The City would be reimbursed by Applicant for use of its sewer system (1/18/01 RT 28); the testimony of record further indicates that the sewer system has adequate capacity to accommodate the project's peak wastewater discharge of 1.1 million gallons per day. (1/18/01 RT 97-99, 207.)

Furthermore, the evidence establishes that the Water Pollution Control Plant has sufficient capacity to treat the additional wastewater flow generated by the MEC. (1/18/01 RT 22, Ex. 8, p. 8.)

No credible evidence of record contradicts the foregoing. The evidence is also clear, however, that the City currently believes that pretreatment of the wastewater discharge may be necessary in order to reduce the level of salinity increase. The basic methods of achieving this are on-site pretreatment, treatment in an as yet prospective centralized desalinization facility, or using a "zero discharge" system which would eliminate the discharge of wastewater. (1/18/01 RT 49-52; Ex. 7, pp. 532-533; Ex. 65.) If such pretreatment is in fact needed, Applicant believes a centralized desalinization facility would be the preferable choice.[86] Finally, Applicant agrees that it must obtain an industrial waste discharge permit from the City (1/18/01 RT 42; see Condition of Certification **SOIL&WATER-6**.) This permit could require that on-site wastewater pretreatment or zero discharge would in fact be required. Each of these would

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[85] The Water Pollution Control Plant is a joint powers authority owned by the Cities of San Jose and Santa Clara; San Jose is the administering entity. (1/18/01 RT 364-365; Ex. 7, p. 519, Ex. 31, p. 2.)

[86] In this regard, one of Applicant's witnesses testified: ". . .we have offered . . . to the City [of San Jose] . . . to construct a central desalter plant at the head of the South Bay Water Recycling Plant if the City were willing to consider the cost of benefits of that proposal in assessing our development impact fees." (1/18/01 RT 53:13-18.) Testimony from Applicant's witnesses also

reduce salinity levels and further ensure that no environmental impact would occur. Thus, for present purposes, we are satisfied that adequate mechanisms exist to resolve this matter. (1/18/01 RT 249, 372-373; Ex. 31, pp. 2-3.)

e) Uncertainties

Our review of the evidence convinces us that the MEC will neither create nor contribute to significant adverse environmental impacts upon the quality or quantity of the area's water resources. The pertinent evidence clearly establishes that sufficient water for project use exists, that its use will not significantly deplete the area's resources, that the salinity increase is not substantial from an environmental perspective, that the project will not strain the capacities of the existing infrastructure including those required for wastewater, and that the use of the reclaimed/recycled water would provide a benefit by reducing discharge into San Francisco Bay. Therefore, in our opinion, there is simply no reason – based upon evaluation of the environmental impacts in this topic area – sufficient to bar project licensing or to convincingly suggest that the project could not comply with applicable law.

Having said that, however, the record is also clear that Applicant has not yet procured water from any source, nor provided reasonable assurances that it will be able to do so, at least in the immediate future. This circumstance apparently stems from an earlier (and erroneous) assumption that the City would take appropriate land use actions which in turn would have clarified the water supply and wastewater disposal matters. (1/18/01 RT 250-251, 367.)

The net result is that we are now, at our decision stage, faced with a project which, from a water supply and wastewater disposal perspective, appears much less defined than a typical power plant proposal. (1/18/01 RT 252-256, 292-294,

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indicates that, while technically feasible, a zero discharge system ". . . doesn't make optimal economic sense for us or the City." (1/18/01 RT 54:7-9; see also, 1/18/01 RT 53:21-22, 269.)

298, 300.) Moreover, this lack of definition permeates several critical aspects of the project since not only could the power plant not operate, but it could also be without a source of water for fire protection and construction needs. (1/18/01 RT 247-248, 266-267, 301, 321; Ex. 7, p. 526.) The problem this creates is that we cannot now determine, as a factual matter, whether water supplies and wastewater discharge facilities as analyzed in this Decision in fact will be forthcoming.[87]

Ultimately, we are faced with a situation involving a willing buyer and an unwilling seller. The evidence conclusively shows that Applicant is willing to purchase needed water supplies, and finance or contribute to other required elements such as the water supply pipelines and wastewater discharge facilities. The evidence also convincingly establishes, however, that the City presently will not cooperate in these endeavors even though it maintains control of, or administers, the sources of supply and facilities needed for discharge.[88] (1/18/01 RT 349-350, 366-367, 374; Ex. 31.)

During the hearings, and especially in post-hearing briefs, the parties raised various arguments centering on the obligation or non-obligation of the City to provide pertinent services in the event we "override" the City's land use actions. In each instance, these arguments rest on *implications* which various parties wish us to derive from an override determination, rather than on express statutory direction. (See, Pub. Resources Code, § 25525.) We raise this point at this time only to note that this cascade of argument serves only to muddy the issue and divert one's attention. What is at issue here, in our view, is simply

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[87] Any significant change in Applicant's water supply and wastewater disposal proposals would require further analysis, either as part of this proceeding or as part of an amendment proceeding. (See, 20 Cal. Code of Regs., § 1769.) We note that options to eliminate cooling water use, such as dry cooling, or to eliminate wastewater discharge, such as use of a zero discharge system, have not been analyzed by Applicant. (1/18/01 RT 54, 57; see also, 1/18/01 RT 269-270.)

[88] The evidence also indicates that the current refusal to cooperate with Applicant would evaporate upon appropriate direction by the City. (1/18/01 RT 390.)

specifying the point at which Applicant must obtain water supply and wastewater disposal capabilities.

As noted earlier, it is clear that, without water or wastewater disposal, the project cannot be constructed or operated as presently proposed. Therefore, this matter is self-correcting, and it makes little substantive or environmental difference whether the City mutually agrees to provide services because of continued negotiations or a change of position, or is required to provide services due to a suitable interpretation of our override actions or by another method.

If negotiations/permit issuance's successfully conclude in a timely manner, then the issue of when water supply and wastewater disposal capabilities need be present becomes moot. If they do not, however, other options to procure these services present the potential to be quite time consuming, with currently speculative results.[89] While we would prefer that commitments for water supply and wastewater facilities be in place prior to certification, we recognize there is no clear statutory requirement in this regard.

Furthermore, we acknowledge the validity of Staff's concerns as enunciated at the evidentiary hearing concerning the desirability and policy implications associated with identifying committed water and wastewater disposal services prior to commencing construction. (1/18/01 RT 254-256, 279-280.) We do, however, also realize that the ultimate decision as to when construction is commenced is Applicant's. An election to commence construction without a committed water supply nevertheless remains Applicant's choice. We further realize that the evidence establishes that water needed for construction and related activities (including fire protection) is proposed to be provided through an

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[89] Applicant has indicated that it prefers to negotiate with the City for services. It has, however, also identified other options such as litigation, legislation, project redesign, or a local initiative. (1/18/01 RT 215, 226.) In this regard, we accept Applicant's representations that, following certification, it will seek appropriate water and wastewater permits from the City. (1/18/01 RT 49, 73, 105-106.)

agreement with a water retailer. Thus, an agreement, though arguably limited to only these purposes, is nevertheless indisputably required.

In the present circumstances, we have decided that, at a minimum, Applicant must demonstrate that it is engaging in good faith negotiations which are reasonably likely to result in water supply and wastewater disposal agreements. While this is not our typically preferred course, we believe it is warranted in this instance given the unique circumstances surrounding this case.

Accordingly, we have amended Condition **SOIL&WATER-1** and have also added Condition of Certification **SOIL&WATER-9** as proposed by Staff. (Staff Reply Brief on Group One and Two Issues (April 4, 2001), p. 12.) We believe this provides sufficient opportunity for those involved to remove existing uncertainties concerning water supply and wastewater matters, while allowing negotiations with the City to proceed.

FINDINGS AND CONCLUSIONS

Based upon the evidence of record before us, we make the following findings and reach the following conclusions:

1. Soils in the project area are susceptible to wind and water erosion.

2. Applicant shall provide a final Streambed Alteration Agreement (SAA) from the California Department of Fish and Game, and a section 401 Water Quality Certification from the San Francisco Regional Water Quality Control Board (SFRWQCB) prior to the beginning of project construction.

3. The Conditions of Certification below, in conjunction with the SAA and the SFRWQCB 401-certification, will ensure that soil and water erosion does not create significant adverse environmental impacts.

4. The Metcalf Energy Center is proposed to be located on a 14-acre site, the northern one-half of which is located exclusively within the jurisdiction of Santa Clara County, and the southern one-half of which is located within the jurisdiction of the City of San Jose.

5. The Metcalf Energy Center will employ predominately wet cooling technology, for which Applicant proposes to use reclaimed/recycled water provided by the South Bay Water Recycling Program (SBWR).

6. Approximately 95 percent of the total water to be used at MEC will be for cooling purposes.

7. Applicant estimates peak use of approximately 940 acre feet per year (AFY) of local groundwater resources for process (steam cycle) and domestic water needs, as well as a back-up supply for cooling purposes; average use is estimated at 224 AFY.

8. San Jose's Municipal Water System Division (San Jose MUNI) has groundwater supply wells located near the proposed facility.

9. San Jose MUNI's installed groundwater supply wells (Wells 21-23) alone are not sufficient groundwater sources for the project.

10. The San Jose City Council can authorize San Jose MUNI to provide water services outside the city limits.

11. The City of San Jose has not currently authorized the provision of water services to the Metcalf Energy Center by San Jose MUNI.

12. The MEC's process and domestic water needs requires drilling two new groundwater wells outside the boundaries of the proposed project.

13. The Coyote Valley Subbasin is roughly in balance with total estimated inflows and outflows totaling 20,000 AFY.

14. The MEC's use of local groundwater is predicted to cause maximum basin drawdown near the proposed wells of approximately 6.5 feet.

15. The MEC's use of groundwater for project needs will not create significant adverse impacts to the area's water resources.

16. The MEC's recycled/reclaimed water requirements would average approximately 3600 AFY and could peak at over 3800 AFY.

17. South Bay Water Recycling Program (SBWR), an entity administered the City of San Jose, is the only local facility that has sufficient supplies of reclaimed/recycled water for the proposed project.

18. SBWR is a water wholesaler and typically does not serve individual customers.

19. SBWR has no current infrastructure in place to supply the proposed project with recycled water.

20. The Great Oaks Water Company (Great Oaks) is a water retailer in the San Jose area.

21. Great Oaks is not presently authorized by the California Public Utilities Commission (CPUC) to provide water service to the project area, but it has pending a CPUC application to provide water services to the project area.

22. Great Oaks obtains its water resources from 13 deep wells located mostly north of Tulare Hill, and it has no surface water connections capable of serving the project.

23. Great Oaks is not an authorized SBWR recycled water retailer.

24. In order to provide recycled water, Great Oaks would need to obtain the rights to retail recycled water from the SBWR.

25. Great Oaks has no current infrastructure in place to carry recycled water to the Metcalf Energy Center.

26. Applicant has reached no agreement for the provision of water services to the Metcalf Energy Center by any identified water retailer.

27. Applicant has not provided a firm commitment for its supply of recycled water.

28. Applicant proposes to discharge all the MEC wastewater directly into the City's sanitary sewer line located in Santa Teresa Boulevard via a 0.8 mile, 12-inch forced main.

29. Addition of chemicals and salts used at the facility will result in an overall salt loading to the wastewater of about 1,033 pounds per day or 5% over that which is delivered to the MEC in the form of the recycled water.

30. Analyses conducted by Applicant and the City of San Jose have determined that the MEC's wastewater discharge will result in an overall three percent increase in salinity (TDS) levels of the SBWR product recycled water.

31. The majority of current and anticipated uses for SBWR's recycled water is for irrigation and industrial uses.

32. Although the MEC's wastewater will comply with all specified limits, SBWR believes that the increase in salinity (TDS) attributable to the MEC will adversely affect the marketability of SBWR water.

33. Wastewater disposal requires the Metcalf Energy Center to tie into the City of San Jose's sewer system and the wastewater treatment facilities of the San Jose/Santa Clara Water Pollution Control Plant.

34. The City of San Jose is the administering jurisdictional authority for approval of sewer services and wastewater treatment for the MEC.

35. The sewer and the wastewater treatment facilities have sufficient capacity to accommodate the project's wastewater discharge.

36. The evidence of record establishes that the use of water by the MEC and the wastewater disposal proposals for the MEC project will not create any significant direct or cumulative environmental impacts.

We therefore conclude that, if appropriate water supply and wastewater disposal agreements are reached, the project can be constructed and operated in conformity with the applicable laws, ordinances, regulations, and standards identified in the appropriate portion of Appendix A of this Decision.

CONDITIONS OF CERTIFICATION

SOIL&WATER-1: Prior to beginning any clearing, grading, or excavation activities associated with any project element the project owner shall provide a firm commitment for its construction water supply. Disinfected, tertiary-treated, recycled water will be used at the Metcalf Energy Center for cooling purposes and other appropriate non-potable uses (i.e., toilet flushing and equipment washing). Provisions for commitments of recycled water are contained in Condition **SOIL&WATER-9.** Potable water may be used for cooling purposes only in the event that SBWR recycled water service is interrupted, but not to exceed forty-five (45) days in any one year. The project owner shall notify the CPM in writing if potable water is used for cooling purposes and provide an explanation of why the back-up supplies are being used.

Verification: The commitment for the construction water supply shall be submitted to the Energy Commission CPM at least thirty (30) days prior to the start of construction. Once construction of the MEC facility is complete, the project owner shall provide the Energy Commission CPM with a copy of a valid Recycled Water use permit from the City of San Jose. The project owner will design and install dual plumbing such that recycled water will be used to supply

appropriate non-potable uses (i.e., process cooling, toilet flushing, and equipment washing).

In the monthly and annual compliance reports, the project owner will provide a record of water consumption for the MEC. Included in this record the project owner shall identify the required quantities of recycled and potable water broken down by type of use (domestic, steam cycle cooling). In the event that recycled water is interrupted for more than forty-five (45) days in one year, the MEC will cease operation until a suitable alternative is approved by the CPM.

SOIL&WATER-2: Prior to beginning any clearing, grading, or excavation activities associated with construction of any project element, the project owner shall obtain Energy Commission staff approval for a Storm Water Pollution Prevention Plan (SWPPP) as required under the General Stormwater Construction Activity Permit from the SFRWQCB for the project.

Verification: Thirty (30) days prior to the start of any clearing, grading, or excavation activities associated with the construction of any project element, the project owner shall submit a copy of the Storm Water Pollution Prevention Plan (SWPPP) to the Energy Commission Compliance Project Manager (CPM) for review and approval. Approval of the plan by the Energy Commission CPM must be received prior to the initiation of any clearing, grading, or excavation activities associated with construction of any project element.

SOIL&WATER-3: Prior to beginning any clearing, grading, or excavation activities associated with construction of any project element, the project owner shall obtain staff approval for a final erosion control and revegetation plan that addresses all project elements. The final plan to be submitted for staff's approval shall contain all the elements of the draft plan with changes made to address any staff comments and the final design of the project.

Verification: The erosion control and revegetation plan shall be submitted to the Energy Commission CPM no later than thirty (30) days prior to the scheduled construction start date. Approval of the final plan by the Energy Commission CPM must be received prior to the initiation of any clearing, grading, or excavation activities associated with construction of any project element.

SOIL&WATER-4: Prior to beginning any clearing, grading, or excavation activities associated with construction of any project element, the project owner shall obtain SCVWD approval for all activities within floodways or upon or within the banks of watercourses as defined in District Ordinance 83-2.

Verification: At least thirty (30) days prior to the start of any clearing, grading, or excavation activities associated with the construction of any project element, the project owner shall obtain SCVWD approval for all activities within floodways or upon or within the banks of watercourses as defined in District Ordinance 83-

2; written documentation of this approval shall be submitted to the Energy Commission Compliance Project Manager (CPM).

SOIL&WATER-5: No later than sixty (60) days prior to commercial operation, the project owner, as required under the General Industrial Activity Storm Water Permit from the SFRWQCB, shall develop and implement a Storm Water Pollution Prevention Plan (SWPPP). Approval for the final Industrial Activities SWPPP must be obtained from Energy Commission staff prior to commercial operation of the power plant.

Verification: No later than sixty (60) days prior to the start of commercial operation, the project owner will submit to the Energy Commission CPM a copy of the Storm Water Pollution Prevention Plan (SWPPP) prepared under requirements of the General Industrial Activity Storm Water Permit. The final plan shall contain all the elements of the draft plan with changes made to address staff comments and the final design of the project.

SOIL&WATER-6: The project owner shall obtain an Industrial Discharge Permit from the City of San Jose Environmental Services Division prior to discharging the project's wastewater discharge to the City of San Jose sewer system and comply with all restrictions and conditions imposed therein.

Verification: No fewer than forty-five (45) days prior to commercial operation, the project owner shall provide the Energy Commission CPM a copy of a valid Industrial Discharge Permit including any pretreatment requirements and/or limitations. The project owner shall notify the Energy Commission CPM in writing of any changes to and/or renewal of the permit.

SOIL&WATER-7: Prior to the initiation of any clearing, grading, or excavation activities associated with any project element, the project owner shall obtain a Section 401 Certification from the SFRWQCB.

Verification: No later than thirty (30) days prior to the start of any clearing, grading, or excavation activities associated with any project element, the project owner shall submit to the Energy Commission CPM a copy of the Section 401 Certification from the SFRWQCB for the MEC.

SOIL&WATER-8: The project owner shall only use groundwater for the MEC process and domestic requirements and, as provided in Condition **SOIL&WATER-1** above, for back-up cooling make-up from the two wells and pipelines as specified in the Groundwater Supply System report. The project owner shall notify the Energy Commission when these wells are installed and submit the results of the pump tests to determine well capacity.

Verification: No later than thirty (30) days prior to the start of any clearing, grading, excavation, or drilling activities associated with the construction of the

potable water system as described in the Groundwater Supply System needed to serve MEC, the project owner shall submit the following to the Energy Commission CPM:

- all construction specifications for the proposed wells;
- a copy of the valid well permit(s) and registration numbers for the wells to be constructed; and
- any construction or operation conditions imposed by the SCVWD.

No later than thirty (30) days after the completion of the wells, the project owner shall notify the CPM that the wells have been installed and submit the results of the pump and aquifer tests conducted.

SOIL&WATER-9 The project owner shall design, construct, and fully fund the portion of the SBWR reclaimed water supply pipeline dedicated to, and essential for, the operation of MEC in accordance with the Conditions of Certification and the project description. Alternatively, the project owner may enter into an agreement for the construction of that portion of the SBWR reclaimed water supply pipeline dedicated to, and essential for, the operation of MEC in accordance with the Conditions of Certification and the project description. The project owner shall establish with the Commission's Compliance Manager specific performance milestones for both the initiation of construction within one year of certification and the construction phase. Before starting construction of any structure that is part of the project, the project owner shall submit evidence demonstrating that the project owner has negotiated or is negotiating one or more agreements to provide waste discharge services and SBWR reclaimed water to the project. Examples of such evidence include, but are not limited to, a will-serve letter from the City of San Jose, a memorandum of understanding among appropriate parties to build required infrastructure and provide reclaimed water to the project, a written agreement to serve the project with reclaimed water, an interconnection agreement, or other documentation found acceptable by the Compliance Project Manager.

Verification: No later that thirty (30) days prior to the construction of any MEC facilities or structures, the project owner shall submit evidence demonstrating that the project owner has negotiated or is negotiating one or more agreements to provide SBWR reclaimed water and waste discharge services to the project.

C. CULTURAL RESOURCES

This section discusses cultural resources, defined as including the structural and cultural evidence of the history of human development of life on earth. These resources assist in the understanding of our culture, our history, and our heritage. The spatial relationships between an undisturbed resource site and the surface resources and features, as well as the locational context of the resource materials within the site and beneath the surface, provide information that can be used to determine the sequence of human occupation and use of an area.

Cultural resources are typically placed in one of three categories: prehistoric archaeologic resources; historic archaeologic resources; and ethnographic resources. The first category relates to the prehistoric human occupation and use of an area; resources typically include sites, deposits, structures, artifacts, rock art, trails, and other traces of human behavior. Historic archaeologic resources are materials usually associated with Euro-American exploration and settlement of an area, as well as the beginning of a written historical record; they may include deposits, sites, structures, traveled ways, artifacts, documents, or other indicia of human activity. Ethnographic resources such as traditional collecting areas, ceremonial sites, topographic features, cemeteries, shrines, or ethnic neighborhoods and structures are those materials important to the heritage of a particular ethnic or cultural group such as Native Americans or African, European, or Asian immigrants.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The project site is just west of Monterey Road, between Metcalf Road to the north and Blanchard Road to the south, in the Santa Clara Valley. It is in a narrow valley, approximately 8 miles long by 3 miles wide, drained by Coyote Creek. Due to the available water supply and temperate climate, humans have occupied this area, temporarily or otherwise, for at least 11,500 years. Deposits

of sediment in the area may hide sites that date back approximately 15,000 years. (Ex. 7, p. 419; Ex. 1, p. 8.3-4.)

Authorities disagree concerning the existence and location of previous Native American villages in the Coyote Valley.[90] However, they do agree that there were numerous villages or seasonal camps, used to exploit seasonal resources, in or near the project area.

Spanish missionaries began their exploration and development of the missions in California in 1769, starting in San Diego and ending with the missions in San Rafael and Sonoma in 1823. It is not possible to accurately trace the exact routes of Spanish missionaries in California, but it is likely that many of them passed through the project area. Mission Santa Clara would have been the most likely source of impact on the indigenous people of the valley. (Ex. 7, p. 420; Ex. 1, p. 8.3-8.)

At the time of Spanish contact in 1770, the Costanoan people (also known as Ohlone) inhabited the area that extended from the central California Coast east to the Diablo Range. The triblet that occupied the vicinity of the project site was known as the Tamyen (Tamien). Spanish mission records and archaeological data indicate that in 1770 there appear to have been 1,000 to 1,200 Tamyen living in the area. The Tamyen were broken down into additional tribelets. The area of the San Juan Bautista Tribelet corresponds roughly with that of the project. Sources differ as to whether the Coyote Valley was an area where permanent villages were established, but it is likely that the area was at least the location of temporary campsites over hundreds of years. (Ex. 7, pp. 419-420; Ex. 1, p. 8.3-7.)

[90] The ethnohistoric native village of the Matalan tribal group may be located within the project boundaries. (CARE's "Intervenor's Response to Data Request . . ." etc., dated December 21, 2000.) Applicant considered this possibility in preparing its cultural resources assessment. (Ex. 9, p. 1.)

A literature and records search at the Northwest Information Center of California Historical Resources Information System (CHRIS) revealed that 136 cultural resource studies have been conducted within the Area of Potential Effect (APE) and/or a one-mile radius of the power plant site area and project linears. (Ex. 7, p. 420.)

Applicant's consultants conducted a pedestrian field survey in 1999 on the proposed plant site location and land immediately adjacent. (1/9/01 RT 7.) While two discrete archaeological loci[91] were identified on the project site, subsequent backhoe trenching did not reveal a subsurface component to these loci. Although Test Areas 1 (North – the proposed location of the generation plant and support facilities) and 2 (South – the route of proposed access road and probable utility corridor) revealed culturally sterile soil, and Test Area 3 (Fisher Creek vicinity) did not reveal any cultural materials, the cultural resources consultant stated that Test Area 3's proximity to Fisher Creek and the presence of minor surface cultural material warranted monitoring in this area. (Ex. 7, pp. 421-422.)

Potential historic resources have been located in the area (such as Ramelli Ranch, Coyote Ranch, the Keesling black walnut trees, a water tower, depot, and a feed and grain warehouse). Some of these may be eligible for listing in the National Register of Historic Places (NHRP). (Ex. 7, p. 421.) The Keesling trees were designated by the State of California as a point of historical interest in 1980.

No impact is anticipated for the installation of the electrical transmission tie-line, which is approximately 240 feet long and is in an area where trenching revealed no cultural resources. (Ex. 7, pp. 426-427.)

It does not appear that any resources would be impacted by the installation of the natural gas pipeline, which would extend about a mile from the plant site to

[91] "…[T]hree pieces of Franciscan chur flakes that may have been placed there, the remnants of Native American cultural devitage…" . (1/9/01 RT 7:14-17.)

PG&E's main natural gas pipeline, and the gas metering facility. Grading, trenching, and boring activities, however, will be conducted in this area. Due to the depth of earth disturbance involved, presence/absence testing and monitoring are necessary to ensure that there are no impacts to previously undiscovered buried cultural resources. (Ex. 7, p. 427.)

Pipelines are required for the project's water systems. Applicant anticipates that cooling water will be supplied via the proposed South Bay Water Recycling (SBWR) route, extending approximately 10.2 miles, primarily along paved city streets and through residential and commercial areas. Potable back-up water would be provided by San Jose Muni, Great Oaks, or from two wells. However, the precise locations for the wells and pipeline routes have not yet been determined, due to some uncertainty as to which water purveyor will ultimately provide services.[92] Should the MEC project locate the potable water wells or related pipelines outside the researched boundaries of the proposed MEC project or the area south of Blanchard Road, additional cultural resources information will be required. (1/9/01 RT 49-51.)

While it does not appear that the Metcalf Energy Center will impact any identified cultural resources, the combined presence of archaeological sites, features, or objects and historic-era buildings indicates an increased potential for previously unknown historic and prehistoric resources to be encountered and affected during project construction. Although the existence of known cultural resources indicates further potential for unknown resources to be encountered, the absence of known resources does not necessarily mean that unknown resources will not be encountered and that impacts will therefore not occur. In addition, the potential for discovery does not measure the significance of individual artifacts or

[92] A cultural resources inventory indicated that one previously identified cultural resource, Blanchard Road Houses A & B, might be impacted by the potable water wells. This resource does not appear to be eligible for the California or National Registers because it lacks integrity and is not significant under the legal criteria. Neither house appears to be eligible for listing as a "Structure of Merit" on the City of San Jose Historic Resources Inventory due to low scores on the City of San Jose Historic Evaluation Criteria checklist. (Ex. 7, p. 423.)

other cultural resources present, since it is impossible to accurately predict what specific materials could be encountered. Furthermore, sometimes the full significance of discovered cultural resources can only be determined after they have been collected, prepared, and studied by professional archaeologists. (Ex. 7, p. 425.)

For cultural resources, the preferred method of mitigation is for project construction to avoid areas where cultural resources are known to exist, wherever possible. Often, however, avoidance cannot be achieved, and other measures such as surface collection, subsurface testing, and data recovery must be implemented. The evidence of record and the Conditions of Certification detail mitigation measures developed to reduce the potential for adverse project impacts on cultural resources to a less than significant level. The sufficiency of these measures was largely uncontested, save for the inclusion of a Native American monitor as part of the otherwise required cultural resources monitoring team.[93]

The Conditions of Certification provide for the submission of a Cultural Resources Monitoring and Mitigation Plan. (Condition of Certification, **CUL-3**.) This plan essentially provides for monitoring, testing, and other associated activities to minimize impacts to cultural resources. The plan will also specify which project areas will require full time cultural resources monitoring. (1/9/01 RT 41.) The requirement concerning the Native American monitor appears in Condition **CUL-16**.[94]

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[93] During the evidentiary hearing, Applicant and Staff agreed to, and no other party contested, a minor modification to Condition of Certification **CUL-2**. (1/9/01 RT 8, 14; Ex. 11.) We have incorporated that change here.

[94] We note that during the evidentiary hearing, Applicant indicated that it did not dispute the wording of Condition of Certification **CUL-16**, and that it would accept the language as proposed by Staff. (1/9/01 RT 38-39.)

Presently, it appears that no cultural resources exist at the plant site (1/9/01 RT 8, 26) and that cultural resources monitoring activities on that portion of the project are therefore expected to be minimal.[95] Moreover, there is no dispute that cultural resources monitoring activities will occur along the natural gas supply pipeline. (1/9/01 RT 36; Applicant's Group I Brief (March 23, 2001), p. 1-33.) The parties disagree, however, whether: 1) monitoring activities will be required along the proposed SBWR water supply pipeline route; and 2) it is necessary to have a Native American monitor as part of the cultural resources monitoring team.[96]

Applicant argues generally that monitoring along the route of the proposed recycled water pipeline would duplicate existing federal and municipal requirements and, specifically, that a Native American monitor need be present only when there is a moderate to high potential for the exposure of Native American human remains, or when relevant archaeological discoveries have been made. (1/9/01 RT 9, 37-38; Applicant's Group I Brief (March 23, 2001), pp. 1-34 – 1-35.) Staff believes it is more prudent to have a Native American monitor as part of the required cultural resources team, and to include cultural resources monitoring along the recycled water pipeline route. (1/9/01 RT 20; Staff Opening Brief (March 23, 2001), pp. 3-4; Reply Brief (April 4, 2001), pp. 23-26.)

Representatives of the Native American community, located by contacts with the Native American Heritage Commission (NAHC), have expressed concern over

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[95] The Staff witness clarified, in response to concerns voiced by Intervenor Williams that, if resources are unexpectedly discovered during ground disturbing activities or site construction, they will be appropriately evaluated. (1/9/01 RT 43-46.) Applicant acknowledges this commitment, including potential consultation with a Native American monitor, if necessary. (Applicant's Group I Brief (March 23, 2001), pp. 1-33 – 1-34.)

[96] In the cultural resources field, a Native American monitor is consulted to assess appropriate religious or spiritual concerns. (1/9/01 RT 21.) There are no legal provisions requiring Native American monitoring. (1/9/01 RT 10, 22.) In Staff's view "[h]aving a Native American monitor on site ensures that if cultural items or remains are discovered, Native American concerns, rooted in their beliefs, customs and practices, will be appropriately addressed." (Staff Group 1 and 2 Reply Brief (April 4, 2001), p. 24.)

the archaeological sensitivity of the area and the potential for discovering human remains in the vicinity of MEC. (Ex. 7, p. 424.) Intervenor Californians for Renewable Energy (CARE), in written submissions, also expressed a desire that a Native American monitor be present for all ground-breaking activities and presence/absence testing and development.[97]

We agree with Staff's position concerning the provisions of **CUL-16**. From the record, it is clear to us that monitoring along the recycled water pipeline route and the inclusion of a Native American as part of the monitoring team are prudent measures in an area replete with cultural resources. To conclude otherwise could, we believe, undesirably segment monitoring activities, lead to confusion, and potentially result in oversight of recognized cultural resource concerns. The inclusion of a Native American monitor as part of the monitoring team appears to us as a desirable adjunct to mitigation measures designed to protect the cultural resources at the MEC project. As reflected in the Conditions for Certification, these mitigation measures include sensitivity training, presence/absence testing along the proposed route for the natural gas line and in the area of the metering station, monitoring during earth excavation and along the lines and locations of both proposed wells, and the natural gas route. To exclude the SBWR route, or the presence of a Native American monitor during cultural resources monitoring activities, simply seems unwise.

FINDINGS and CONCLUSIONS

Based upon the weight of the evidence of record, we make the following findings and reach the following conclusions:

[97] CARE also contended that Applicant had not performed the required cultural resources management assessment, and also that additional assessment by federal authorities is required. The persuasive testimony of record does not support these contentions. (1/9/01 RT 20-21, 31-33.)

1. Numerous recorded and recently identified cultural resource sites exist within one mile of the proposed MEC project.

2. The presence of these previously identified cultural resources indicates that there is a strong possibility that project construction could encounter potentially significant cultural resources.

3. Adverse impacts to cultural resources may be satisfactorily avoided or lessened by the implementation of appropriate mitigation measures.

4. The Conditions of Certification require appropriate monitoring activities for all pertinent aspects of the power plant and its related facilities, including the proposed South Bay Water Recycling pipeline route.

5. The Conditions of Certification provide for a Native American monitor as part of the cultural resources monitoring team.

6. The Conditions of Certification listed below contain measures that will ensure that construction and operation of the Metcalf Energy Center Project and its related facilities will not create significant direct, indirect, or cumulative adverse impacts to cultural resources.

We therefore conclude that implementation of the Conditions of Certification below will reasonably assure that the Metcalf Energy Center Project complies with all applicable laws, ordinances, regulations, and standards pertaining to cultural resources set forth in the appropriate portion of **Appendix A** of this Decision.

CONDITIONS of CERTIFICATION

CUL-1 Prior to the start of any construction-related vegetation clearance or earth disturbing activities, or project site preparation, the project owner shall provide the California Energy Commission (Commission) Compliance Project Manager (CPM) with the name and statement of qualifications of its designated cultural resource specialist who will be responsible for implementation of all cultural resources Conditions of Certification.

> Protocol: The statement of qualifications for the designated cultural resource specialist shall include all information needed to demonstrate that the specialist meets the minimum qualifications set forth below, including the following:

a) a graduate degree in anthropology, archaeology, California history, cultural resource management, or a comparable field;

b) at least three years of archaeological resource mitigation and field experience in California; and

c) at least one year's experience in each of the following areas:

1. leading archaeological resource field surveys;
2. leading site and artifact mapping, recording, and recovery operations;
3. marshalling and use of equipment necessary for cultural resource recovery and testing;
4. preparing recovered materials for analysis and identification;
5. determining the need for appropriate sampling and/or testing in the field and in the lab;
6. directing the analyses of mapped and recovered artifacts;
7. completing the identification and inventory of recovered cultural resource materials; and
8. preparing appropriate reports to be filed with the receiving curation repository, the State Historic Preservation Officer (SHPO), and the appropriate regional archaeological information center(s).

The statement of qualifications for the designated cultural resource specialist shall include:

a) a list of specific projects the specialist has previously worked on;

b) the role and responsibilities of the specialist for each project listed; and

c) the names and phone numbers of contacts familiar with the specialist's work on these referenced projects.

Verification: At least ninety (90) days prior to the start of project earth disturbing activities, the project owner shall submit the name and statement of qualifications of its designated cultural resource specialist to the CPM for review and written approval.

At least ten (10) days, but no more than thirty (30) days, prior to the start of any construction related vegetation clearance or earth disturbing activities or project site preparation, the project owner shall confirm in writing to the CPM that the approved designated cultural resource specialist will be available at the start date and is prepared to implement the cultural resources Conditions of Certification.

At least ten (10) days prior to the termination or release of a designated cultural resource specialist, the project owner shall obtain CPM approval of the

replacement specialist by submitting to the CPM the name and a statement of qualifications of the proposed new designated cultural resource specialist.

CUL-2 Prior to the start of earth disturbing activities, the project owner shall provide the designated cultural resource specialist and the CPM with maps and drawings showing the footprint of the power plant and all linear facilities. Maps provided will include the USGS 7.5 minute topographic quadrangle map and a map at an appropriate scale (i.e., 1:2000 or 1" = 200') for plotting individual artifacts. If the designated cultural resource specialist requests enlargements or strip maps for linear facility routes, the project owner shall provide them. In addition, the project owner shall provide a set of these maps and drawings reflecting these changes to the cultural resource specialist and the CPM within five (5) days. Maps shall show the location of all areas where surface disturbance may be associated with project related access roads, and any other project components.

Verification: At least seventy-five (75) days prior to the start of earth disturbing activities on the project, the project owner shall provide the designated cultural resource specialist and the CPM with the maps and drawings. Copies of maps or drawings reflecting changes to the footprint of the power plant and/or linear facilities shall be submitted to the cultural resource specialist and the CPM.

CUL-3 Prior to the start of project construction-related vegetation clearance or earth disturbing activities or project site preparation, the designated cultural resource specialist shall prepare, and the project owner shall submit to the CPM for review and written approval, a Cultural Resources Monitoring and Mitigation Plan (CRMMP) identifying general and specific measures to minimize potential impacts to sensitive cultural resources. Approval of the CRMMP, by the CPM, shall occur prior to any construction-related vegetation clearance or earth disturbing activities or project site preparation.

Protocol: The Cultural Resources Monitoring and Mitigation Plan shall include, but not be limited to, the following elements and measures:

a. A proposed research design that includes a discussion of questions that may be answered by the mapping, data, and artifact recovery conducted during monitoring and mitigation activities, and by the post-construction analysis of recovered data and materials.

b. Specification of the implementation sequence and the estimated time frames needed to accomplish all project-related tasks during the pre-construction, construction, and post-construction analysis phases of the project.

c. Identification of the person(s) expected to perform each of the tasks; a description of each team member's qualifications and their

responsibilities; and the reporting relationships between project construction management and the mitigation and monitoring team.

d. A discussion of the inclusion of Native American observers or monitors, the procedures to be used to select them, and their role and responsibilities.

e. A discussion of any 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.

f. A discussion of the location(s) where monitoring of project construction activities is deemed necessary by the designated cultural resource specialist. The specialist will determine the size or extent of the areas where monitoring is to occur and will establish the percentage of the time that the monitor(s) will be present; however monitoring shall be conducted full time in the specified areas that follow. Monitoring shall be conducted full time on the project site and laydown area (excluding presence/absence testing Areas 1 and 2). It shall also be conducted full time on the South Bay Water Recycling (SBWR) route and the route to Well No. 23 (wherever earth-disturbing activity is taking place) and along the natural gas line (wherever monitoring is warranted by information acquired by presence/absence testing).

g. A discussion of the requirement that all cultural resources encountered will be recorded and mapped (may include photos) and that all significant or diagnostic resources will be collected for analysis and eventual curation 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.

h. A discussion of the availability and the designated specialist's access to equipment and supplies necessary for site mapping, photographing, and recovering any cultural resource materials encountered during construction.

i. Identification of the public institution that has agreed to receive any data and cultural resources recovered during project-related monitoring and mitigation work. Discussion of any requirements, specifications, or funding needed for curation of the materials to be delivered for curation and how they will be met. The name and phone number of the contact person at the institution shall also be included.

Verification: At least sixty (60) days prior to the start of project construction, related vegetation clearance, earth disturbing activities, or project site preparation, the project owner shall provide the Cultural Resources Monitoring and Mitigation Plan, prepared by the designated cultural resource specialist, to the CPM for review and written approval.

CUL-4 Prior to the start of project construction-related vegetation clearance, earth disturbing activities, or project site preparation, the designated cultural resource specialist shall prepare an employee training program. The project owner shall submit the cultural resources training program to the CPM for review and approval.

> Protocol: The training program shall discuss the potential to encounter cultural resources in the field, the sensitivity and importance of these resources, and the legal obligations to preserve and protect such resources. The training program shall also include the set of resource reporting procedures and work curtailment procedures that workers are to follow if previously unknown cultural resources are encountered during project activities. The training program shall be presented by the designated cultural resource specialist or qualified member of the cultural resources team(s) approved by the CPM and may be combined with other training programs prepared for biological resources, paleontologic resources, hazardous materials, or any other areas of interest or concern.

Verification: At least sixty (60) days prior to the start of project construction-related vegetation clearance, earth disturbing activities, or project site preparation; the project owner shall submit to the CPM for review and written approval the proposed employee training program, the set of reporting procedures, and the work curtailment procedures that the workers are to follow if previously unknown cultural resources are encountered during construction. The project owner shall provide the name and resume of the individual(s) performing the training.

CUL-5 Prior to the start of project construction-related vegetation clearance, earth disturbing activities, or project site preparation; and throughout the project construction period as needed for all new employees, the project owner shall ensure that the designated cultural resource trainer(s) provide(s) the CPM-approved cultural resources training to all project managers, construction supervisors, and workers. The project owner shall ensure that the designated trainer provides the workers with the CPM-approved set of procedures for reporting any sensitive resources that may be discovered during project-related ground disturbance and the work curtailment procedures that the workers are to follow if previously unknown cultural resources are encountered during construction. The original cultural resources training session may be videotaped and shown to employees hired after the project is underway.

Verification: Within seven (7) days after the start of project related vegetation clearance, earth disturbing activities, or project site preparation, the project owner shall provide the CPM with documentation that the designated cultural resource trainer(s) has/have provided to all project managers, construction supervisors, and workers hired before the start of construction the CPM-approved cultural resources training and the set of reporting and work curtailment procedures.

In each Monthly Compliance Report, after the start of construction, the project owner shall provide the CPM with documentation that the designated cultural resource trainer(s) has/have provided to all project managers, construction supervisors, and workers hired in the month, the CPM-approved cultural resources training and the set of resource reporting and work curtailment procedures.

CUL-6 The designated cultural resource specialist or the specialist's delegated monitor(s) shall have the authority to halt or redirect construction if previously unknown cultural resource sites or materials are encountered during project construction related vegetation clearance, earth disturbing activities, or project site preparation.

If such resources are found, the halting or redirection of construction shall remain in effect until:

- the specialist has notified the CPM of the find and the work stoppage;
- the specialist, the project owner, and the CPM have conferred and determined what, if any, data recovery or other mitigation is needed; and
- any needed data recovery and mitigation has been completed.

The specialist, the project owner, and the CPM shall confer within five (5) working days of the notification of the CPM to determine what, if any, data recovery or other mitigation is needed.

If data recovery or other mitigation measures are required, the specialist and team members shall monitor construction activities and implement data recovery and mitigation measures, as needed.

All required data recovery and mitigation shall be completed expeditiously unless all parties agree to additional time.

Verification: Thirty (30) days prior to the start of project construction-related vegetation clearance, or earth disturbing activities and preparation, the project owner shall provide the CPM with a letter confirming that the designated cultural resource specialist and delegated monitor(s) have the authority to halt construction activities in the vicinity of a cultural resource find.

For any cultural resource encountered, the project owner shall notify the CPM within twenty-four (24) hours.

CUL-7 Prior to the start of project construction related vegetation clearance, earth disturbing activities, or project site preparation, and each week throughout project construction, the project owner shall provide the designated cultural resource specialist with a current schedule of anticipated project activity in the following month and a map indicating the area(s) where the construction activities will occur. The designated cultural resource specialist shall consult daily with the project superintendent or construction field manager to confirm the area(s) to be worked on the next day(s).

Verification: Ten (10) days prior to the start of project construction- related vegetation clearance, earth disturbing activities, or project site preparation, and in each Monthly Compliance Report thereafter, the project owner shall provide the CPM with a copy of each weekly schedule of the construction activities. The project owner shall notify the CPM when all ground disturbing activities, including landscaping, are completed.

CUL-8 Throughout the pre-construction reconnaissance surveys and the construction monitoring and mitigation phases of the project, the designated cultural resource specialist and delegated monitor(s) shall keep a daily log of any resource finds and the progress or status of the resource monitoring, mitigation, preparation, identification, and analytical work being conducted for the project. The daily logs shall indicate, by tenths of a post mile, where and when monitoring has taken place, where monitoring has been deemed unnecessary, and where cultural resources were found. The designated specialist shall prepare a weekly summary of the daily logs on the progress or status of cultural resource-related activities. The designated resource specialist and delegated monitor(s) may informally discuss the cultural resource monitoring and mitigation activities with Commission technical staff.

Verification: Throughout the project construction period, the project owner shall ensure that the daily log(s) and the weekly summary reports prepared by the designated cultural resource specialist and delegated monitor(s) are available for periodic audit by the CPM. Copies of the weekly summary reports shall be submitted to the CPM in the Monthly Compliance Report.

CUL-9 Except in the areas specified in **CUL-3(f),** the designated cultural resource specialist or delegated monitor(s) shall be present at times the specialist deems appropriate to monitor construction-related ground disturbance, including grading, excavation, trenching, and/or auguring, in the vicinity of previously recorded archaeological sites and in areas where cultural resources have been identified.

Protocol: Except as specified in **CUL-3(f),** if the designated cultural resource specialist determines that full-time monitoring is not necessary in certain portions of the project area or along portions of the linear facility routes, the designated specialist shall notify the project owner and the CPM of the changes. The designated cultural resource specialist shall use milepost markers and boundary stakes placed by the project owner to identify areas where monitoring is being reduced or is no longer deemed necessary.

Verification: Throughout the project construction period the project owner shall include in the Monthly Compliance Reports to the CPM copies of the weekly summary reports prepared by the designated cultural resource specialist regarding project-related cultural resource monitoring.

CUL-10 The project owner shall obtain ground disturbance or cultural resource excavation permits from Caltrans and/or the U.S. Army Corps of Engineers, as necessary. If cultural resources are unearthed in an area covered by the Corps of Engineers permit, the project owner shall consult with that agency and the CPM regarding compliance with Section 106 of the National Historic Preservation Act.

Verification: The project owner shall submit a copy of any permit addressing data recovery excavation from Caltrans and/or the Corps of Engineers in the next monthly compliance report. After completion of the mitigation activity, the project owner shall also provide written documentation to the permitting agency and, in the next Monthly Compliance Report following the completion of that activity, that the project owner has complied with any mitigation measures required as a result of permitted activity.

CUL-11 The project owner shall ensure that the designated cultural resource specialist performs the recovery, preparation for analysis, analysis, preparation for curation, and delivery for curation of all cultural resource materials encountered and collected during pre-construction surveys and during the monitoring, data recovery, mapping, and mitigation activities related to the project.

Verification: The project owner shall maintain in its compliance files copies of signed contracts or agreements with the museum(s), university(ies), or other appropriate research specialists. The project owner shall maintain these files for the life of the project and the files shall be kept available for periodic audit by the CPM. Information as to the specific location of sensitive cultural resources site shall be kept confidential and accessible only to qualified cultural resource specialists.

CUL-12 Following completion of data recovery and site mitigation work, the project owner shall ensure that the designated cultural resource specialist

prepares a proposed scope of work for the Cultural Resources Report. The project owner shall submit the proposed scope of work to the CPM for review and written approval.

Protocol: The proposed scope of work shall include (but not be limited to):

a. a discussion of any analysis to be conducted on recovered cultural resource materials;
b. discussion of possible results and findings;
c. proposed research questions which may be answered or raised by analysis of the data recovered from the project; and
d. an estimate of the time needed to complete the analysis of recovered cultural resource materials and to prepare the Cultural Resources Report.

Verification: The project owner shall ensure that the designated cultural resource specialist prepares the proposed scope of work within ninety (90) days following completion of the data recovery and site mitigation work. Within seven (7) days after completion of the proposed scope of work, the project owner shall submit it to the CPM for review and written approval.

CUL-13 The project owner shall ensure that the designated cultural resource specialist prepares a Cultural Resources Report. The project owner shall submit the report to the CPM for review and written approval.

Protocol: The Cultural Resources Report shall include, but not be limited to, the following:

a. For all projects:
    1. description of pre-project literature search, surveys, and any testing activities;
    2. maps showing areas surveyed or tested;
    3. a description of any monitoring activities;
    4. maps, including maps using a 7.5 minute USGS topographic base, of any areas monitored; and
    5. conclusions and recommendations.
b. For projects in which cultural resources were encountered, include the items specified under “a” and also provide:
    6. site and isolate records and maps;
    7. a description of testing for, and determinations of, significance and potential eligibility; and

8. a discussion of the research questions answered or raised by the data from the project.

c. For projects regarding which cultural resources were recovered, include the items specified under “a” and “b” and also provide:

9. a description of the methods employed in the field and laboratory; a description (including drawings and/or photos) of recovered cultural materials;

10. results and findings of any special analyses conducted on recovered cultural resource materials;

11. an inventory list of recovered cultural resource materials; an interpretation of the site(s) with regard to the research design; and

12. the name and location of the public repository receiving the recovered cultural resources for curation.

Verification: The project owner shall ensure that the designated cultural resource specialist completes the Cultural Resources Report within ninety (90) days following completion of the analysis of the recovered cultural materials. Within seven (7) days after completion of the report, the project owner shall submit the Cultural Resources Report to the CPM for review and written approval.

CUL-14 The project owner shall submit an original, an original-quality copy, and a computer disk copy (or other format to meet the repository’s requirements) of the CPM-approved Cultural Resource Report to the public repository to receive the recovered data and materials for curation, with copies to the State Historic Preservation Officer (SHPO), the appropriate regional archaeological information center(s), and a person employed by the City of San Jose who is authorized to receive confidential cultural resources information. If the report is submitted to any of these entities on a computer disk, the disk files must meet SHPO requirements for format and content.

Protocol: The copies of the Cultural Resource Report to be sent to the entities specified above shall include the following based on the applicable scenario (a, b, or c) set forth in condition **CUL-13**:

a. originals or original-quality copies of all text;

b. originals of any topographic maps showing site and resource locations;

c. originals or original-quality copies of drawings of significant or diagnostic cultural resource materials found during pre-construction surveys or during project monitoring and mitigation and subjected to post-recovery analysis and evaluation; and

d. photographs of any cultural resource site(s) and the various cultural resource materials recovered during project monitoring and mitigation

and subjected to post-recovery analysis and evaluation. The project owner shall provide the curation repository with a set of negatives for all of the photographs.

Verification: Within thirty (30) days after receiving approval of the Cultural Resources Report, the project owner shall provide to the CPM documentation that the report has been sent to the public repository receiving the recovered data and materials for curation, the SHPO and the appropriate archaeological information center(s), and the City of San Jose (to a person authorized to receive confidential cultural resources information).

For the life of the project, the project owner shall maintain in its compliance files copies of all documentation related to the filing of the CPM-approved Cultural Resources Report with the public repository receiving the recovered data and materials for curation.

CUL-15 Following the filing of the CPM-approved Cultural Resource Report with the appropriate entities specified in condition **CUL-14**, the project owner shall ensure that all cultural resource materials, maps, and data collected during data recovery and mitigation for the project are delivered to a public repository that meets the US Secretary of Interior requirements for the curation of cultural resources. The project owner shall pay any fees for curation required by the repository.

Verification: The project owner shall ensure that all recovered cultural resource materials are delivered for curation within thirty (30) days after providing the CPM-approved Cultural Resource Report to the entities specified in **CUL-14**.

For the life of the project, the project owner shall maintain in its compliance files copies of signed contracts or agreements with the public repository to which the project owner has delivered for curation all cultural resource materials collected during data recovery and mitigation for the project.

CUL-16 Prior to the start of any construction-related vegetation clearance, earth disturbing activities, project site preparation, or presence/absence testing required in these conditions, the project owner and the designated cultural resource specialist shall consult with Ohlone/Costanoan Native American tribal representatives to develop an agreement(s) for qualified (as specified in the NAHC Guidelines for Monitoring) monitor(s). The monitor(s) shall be considered a member(s) of the cultural resource team and shall be present during the pre-construction and construction phases of the project whenever cultural resources monitoring activities are conducted.

Verification: At least thirty (30) days prior to the start of project-related vegetation clearance, earth disturbing activities, or project site preparation, the project owner shall provide the CPM with a copy of all finalized agreements for Native American (Ohlone/Costanoan) monitor(s). If efforts to obtain the services

of qualified Native American monitor(s) prove unsuccessful, the project owner shall immediately inform the CPM who will initiate a resolution process.

CUL-17 Prior to any project related ground disturbance, including grading, trenching, boring, digging pits, or horizontal directional drilling in the vicinity of the natural gas pipeline route or PG& E metering station, presence/absence testing shall be conducted.

Verification: Reports addressing the results of the presence/absence testing shall be included in the Monthly Compliance Report.

CUL-18 Prior to initial project site mobilization (i.e., placing a trailer on the site with accompanying equipment, utilities, and grading), the project owner must comply with **CUL-1** and **CUL-4** and complete **CUL-5** as it pertains to management, supervisors, and workers involved in this undertaking. The project owner shall comply with **CUL-2** and **CUL-3** for the entire project, but this need not be accomplished before the trailer is placed. If cultural resources are discovered, all cultural conditions shall apply.

Prior to the initial site mobilization, the designated cultural resource specialist shall examine the area of initial project site mobilization and ensure that there are no cultural resources that may require protection or mitigation.

Verification: At least (7) days prior to engaging in the initial project site mobilization defined in this condition, the project owner shall provide the CPM with information authored by the designated cultural resource specialist identifying the area of initial site mobilization. The cultural resource specialist shall indicate the method(s), procedure(s), and date(s) the cultural resource inspection was performed and an explanation of the anticipated project activities. The document will be reviewed and approved by the CPM.

CUL-19 If the potable water wells and associated pipelines are to be located anywhere but in an area defined as part of the proposed project or in an area defined as bordered by Fisher Creek levee on the west, by Highway 101 on the east, and a southern limit at 2,500 feet south of Blanchard Road, then a cultural resources assessment shall be required. The cultural resources assessment shall consist of a records search and a pedestrian survey which gives equal emphasis to prehistoric and historic resources and an evaluation of significance. A Native American monitor from a group with historic ties to the affected area shall be retained as part of the cultural resources team during any surveys or subsurface investigation.

Verification: Ninety (90) days prior to the start of any construction-related vegetation clearance, earth disturbing activities, or project site preparation at the newly identified location of the potable water well(s) or line(s), the project owner shall submit the following for approval by the CPM:

1. the results of the records search and the results of the survey;
2. the name and tribal affiliation of the Native American monitor; and
3. an evaluation, including site records, of all cultural resources within or adjacent to the project Area of Potential Effects (APE).

D. GEOLOGY AND PALEONTOLOGY

The California Environmental Quality Act (CEQA) directs the lead agency to consider whether a project will cause adverse impacts to an unique geological feature or paleontological resource. (Cal. Code of Regs., tit. 14, § 15000 et seq., App. G.) CEQA also requires us to analyze whether a project may cause impacts exposing persons or structures to geologic hazards. Construction, operation, and closure impacts to significant geological and paleontological resources and surface water hydrology are addressed in the evidence of record, as are seismic and geologic hazards, and the erosion potential from project construction and operation. (1/8/01 RT 194-195, 222, 227-228; Ex. 1, secs. 8.15.1 through 8.15.3 and 8.16; Ex. 5, secs. 3.15 and 3.16; Ex. 6A, pp. 11-12 and 13-14.).

This section reviews the project's potential impacts on significant geological and paleontological resources and surface water hydrology. We also evaluate monitoring and mitigation measures with respect to geological hazards, geological and paleontological resources, and surface water hydrology, and determine whether identified mitigation measures are adequate to protect public health and safety.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The site is located in the northern portion of the Coyote Valley in Santa Clara County. The Diablo Range Mountains and the Santa Cruz Mountains bound the site to the east and west, respectively. Site geology includes unconsolidated to semi-consolidated alluvium. Five soil units were encountered during the preliminary geotechnical investigation. (Ex. 1, p. 10G-5.) Bedrock under the site is made of greenstone and serpentinized ultramafic rock; these are exposed on nearby Tulare Hill. (Ex. 6A, pp. 11, 13.)

1. Potential for Seismic Events

The region is extensively faulted and has a history of moderate to high seismicity. There have been twelve recorded earthquakes of magnitude 6.0 or greater in the San Francisco Bay region since 1906. (1/8/01 RT 194-196; Ex. 6A, p. 12.) While no active faults are known to cross the proposed power plant footprint or the linear facilities, there are four faults within twenty miles of the site that are considered active and have the potential to generate a magnitude 7 or larger earthquake. The active fault closest to the site is the Monte Vista-Shannon Fault. This fault is located approximately 1 mile west northwest of the site. The estimated peak horizontal ground acceleration associated with a magnitude 7 earthquake on the fault is 0.5g. (1/8/01 RT 235-239; Ex. 6A, p. 12; Ex. 7, p. 575.)

In April 1984, a Richter Magnitude 6.2 earthquake occurred near the town of Morgan Hill. The epicenter of the earthquake was located approximately 10 miles northeast of the site. During the earthquake the Metcalf Substation, which is located approximately 7 miles southwest from the epicenter, sustained minor damage. The estimated peak horizontal ground acceleration at the Metcalf Substation was 0.4g. Two nearby dams were inspected by the Santa Clara Valley Water District; high peak horizontal ground accelerations of 0.39 and 0.63g were recorded at the Leroy Anderson Dam. The left abutment of the Coyote Valley Dam accelerometer recorded a peak horizontal ground acceleration of 1.29g. Both dams performed well during the earthquake despite the high ground accelerations. (Ex. 7, p. 575.)

In October 1989 the magnitude 7.1 Loma Prieta earthquake occurred 14 miles southwest of the project site. The Metcalf Substation sustained limited damage. The Leroy Anderson Dam was inspected after the Loma Prieta earthquake and found to have extensive but minor cracks along the dam's alignment. The maximum ground acceleration recorded at the dam was 0.43g. The maximum peak horizontal ground acceleration at the crest of Coyote Dam was 0.48g. (Ex. 7, pp. 575-576.)

The MEC power plant and linear facilities are designed and will be constructed to withstand strong earthquake shaking as specified in the 1997 Uniform Building Code and the 1998 California Building Code for Seismic Zone 4 (Ex. 6A, p. 12) or such more stringent standard as may be applicable. (1/8/01 RT 196; see also, Applicant's Group I Brief (March 23, 2001), p. 1-14.) Seismic zone 4 is the highest and strongest design criteria for earthquakes in the United States. (1/8/01 RT 198, 296-297.) The UBC takes into account the strong shaking that may occur from a major earthquake.

Intervenor Californians for Renewable Energy (CARE) and others contended that the Piercy and Bernal Faults may intersect at or near the power plant site. These parties were apparently concerned about potential effects activity along these faults could have upon the project.

Expert testimony establishes that no faults intersect the footprint of the power plant (1/8/01 RT 194-195, 249.) Moreover, the testimony further establishes that the Piercy and Bernal Faults are inactive, and that neither are germane relative to site specific design criteria. (1/8/01 RT 197-198, 205, 216, 228-229, 251.) Moreover, even were a seismic event to occur along these faults, the Seismic Zone 4 structural and design requirements referred to above would adequately account for any potential impacts at the site. (1/8/01 RT 197-198, 296-297.) Similarly, Intervenor Williams' suggestions that additional trenching studies are needed to further assess fault activity are unsupported by the evidence. (1/8/01 RT 197-198, 201; Ex. 7, pp. 573, 578-579.)

The geotechnical analysis also included the water supply and gas supply lines. The evidence establishes that there are no significant geological nor paleontological issues associated with the construction or operation of these linear facilities. (1/8/01 RT 223-224, 233, 247.)

2. Liquefaction, Hydrocompaction, and Expansive Soils

Liquefaction is a condition in which a cohesionless soil may lose shear strength due to a sudden increase in pore water pressure. Liquefaction usually is observed in the upper 100 feet beneath a site if it occurs at all.

Intervenor Williams raised concerns about liquefaction during the evidentiary hearings. (1/8/01 RT 200-204.) Testimony provided by the expert witnesses from Applicant and Staff indicated, however, that liquefaction would be unlikely to pose any risks of damage to the power plant. (1/8/01 RT 201-203, 226-227; Ex. 7, p. 577.) Moreover, since a final geotechnical assessment of subsurface conditions is required by Condition **GEO-2**, the local Chief Building Official will have up-to-date information in deciding upon the suitability of the project's final structural design in light of actual site conditions. Overall, the evidence establishes the potential for liquefaction risks to project components can be suitably addressed through appropriate design approaches. (1/8/01 RT 295-296; see also, **Facility Design** Condition of Certification **GEN-5**.)

Hydrocompaction is the process of the loss of soil volume upon the application of water. The soils at the project site are partially saturated and dense, and are not considered to be prone to hydrocompaction. (Ex. 7, p. 576.)

Soils that contain a high percentage of expansive clay minerals are prone to expansion if subjected to an increase in water content. Near surface soils in the site vicinity are classified as silt, clay, silty sand, and poorly graded sands. None of the clay soils tested had a high plasticity index. The evidence establishes that the potential for soil expansion at the MEC is low. (Ex. 7, p. 576.)

3. Potential Impacts to Geological and Paleontological Resources

No geological resources have been identified at the site or along the electric transmission line alignments, the natural gas supply line, or the water supply and

wastewater return lines. No paleontological resources are known to exist at the site or along the linear facilities or along the proposed alignment of the water supply line. (Ex. 6A, p. 14.) The persuasive evidence uniformly establishes that, although paleontological resources have been encountered in alluvium in the Santa Clara Valley in the past, and that the paleontological sensitivity of the alluvium is high, the probability of encountering paleontological resources is low. The evidence further uniformly establishes that the Conditions of Certification will ensure that potential impacts upon paleontological resources are mitigated to a less than significant level should they be encountered during construction, operation, or closure of the project. (1/8/01 RT 233-236; Ex. 1, sections 8.15, 8.16; Ex. 3, section 3.15, 3.16; Ex. 5, section 3.16, 3.16; Ex. 6A, pp. 12, 14-15; Ex. 7, pp. 576-577.)

4. Potential Impact on Surface Water Hydrology

The site is in Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map designation “D”, but is located adjacent to a 100-year flood zone that follows the Fisher Creek drainage along the west and north sides of the site. The 100-year flood elevation adjacent to the site is 247 feet. Elevations of the footprint for the building and the top of the storm water basin areas vary from 253 to 257 feet above mean sea level. Power plant spill containment features will have a minimum of one foot of freeboard. Run-off during a 100-year 24-hour storm event should not overwhelm the capacity of the proposed surface water drainage system and the proposed storm water management basin. (Ex. 7, p. 577.)

Public comment at the evidentiary hearing concerned the potential for inundation of the power plant site by a catastrophic release from the Leroy Anderson Dam and Reservoir. (1/8/01 RT 262-264.) The Leroy Anderson Dam is located approximately 8.3 miles south of the proposed power plant. The inundation study maps for the Leroy Anderson Dam (Ensign and Buckley 1991) approximate maximum flood crest elevations of 266.9 and 262.1 feet, at 8.0 and 8.5 miles north of the dam. The difference in elevation between the finished grade of the power plant fill pad and the maximum elevation of the

flood crest is approximately 5 to 10 feet. The owner of the dam, the Santa Clara Valley Water District, regards as remote the likelihood of an incident that may cause a flood inundation such as that shown on the study maps. (Ex. 7, pp. 577-578.) Other evidence of record supports this view. (1/8/01 RT 229-30; Ex. 7, p. 579.)

5. Potential Cumulative Impacts

The potential for a significant adverse cumulative impacts on paleontological resources or geological resources is unlikely if the MEC is constructed according to the Conditions of Certification. This is largely due to the fact that the site is not known to have significant paleontological or geological resources. Similarly, impacts on surface water hydrology are unlikely since modeling analysis for both the singular construction and operation of the proposed power plant and the construction and operation of the proposed power plant and the Coyote Valley Research Park indicate that there will be no significant impact on the local drainage system. (Ex. 7, p. 577-578.) The Conditions of Certification include a compliance monitoring scheme that will ensure compliance with laws, ordinances, regulations, and standards (1/8/01 RT 234-236) applicable to concerns pertinent to this topic area.

FINDINGS AND CONCLUSIONS

Based on the unrefuted evidence of record, we make the following findings and reach the following conclusions:

1. The project is not likely to have any significant adverse impact on geological or paleontological resources.

2. Modeling results indicate that the construction and operation of the proposed power plant will have no significant impact on the local drainage system or surface hydrology.

3. Liquefaction at the project site is unlikely. Nevertheless, a final geotechnical assessment of subsurface conditions will be conducted prior to designing the

foundation of the power plant to further define the liquefaction potential at the power plant site.

4. Site inundation resulting from a catastrophic failure of the Leroy Anderson Dam is unlikely to occur.

5. Implementation of the Conditions of Certification will ensure that the project is constructed and operated in compliance with applicable laws, ordinances, regulations, and standards relating to geology and paleontological resources.

6. Implementation of the Conditions of Certification will ensure that project activities do not cause adverse impacts to either geological or paleontological resources or expose the public to geologic hazards.

7. The Piercy and Bernal Faults are considered inactive.

8. The final project design criteria for the MEC project and associated linear facilities will include measures which will mitigate potential seismic risk from ground rupture and liquefaction, associated with strong seismic shaking. These criteria are sufficient to encompass activity along the Piercy and Bernal Faults.

We therefore conclude that the project will create no significant adverse impacts to geologic or paleontological resources, and that it will be designed and constructed in accordance with the laws, ordinances, regulations, and standards contained in the appropriate portion of Appendix A of this Decision.

CONDITIONS OF CERTIFICATION

GEO-1 Prior to the start of construction, the project owner shall assign to the project an engineering geologist(s), certified by the State of California, to carry out the duties required by the 1998 edition of the California Building Code (CBC) Appendix Chapter 33, Section 3309.4. The certified engineering geologist(s) assigned must be approved by the CPM. (The functions of the engineering geologist can be performed by the responsible geotechnical engineer, if that person has the appropriate California license).

Verification: At least thirty (30) 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 to the CPM for approval the name(s) and license number(s) of the certified engineering geologist(s) assigned to the project. The submittal shall include a statement that CPM approval is needed. The CPM will approve or disapprove of the engineering geologist(s). If the engineering geologist(s) is subsequently replaced, the project owner shall submit for approval the name(s) and license number(s) of the newly assigned

individual(s) to the CPM. The CPM will approve or disapprove of the engineering geologist(s).

GEO-2 The assigned engineering geologist(s) shall carry out the duties required by the 1998 CBC, Appendix Chapter 33, Section 3309.4 Engineered Grading Requirement, and Section 3318.1 – Final Reports. Those duties are:

1. Prepare the Engineering Geology Report. This report shall accompany the Plans and Specifications when applying to the CBO for the grading permit.

2. Monitor geologic conditions during construction.

3. Prepare the Final Engineering Geology Report.

The Engineering Geology Report required by the 1998 CBC Appendix Chapter 33, Section 3309.3 Grading Designation, shall include an adequate description of the geology of the site, conclusions and recommendations regarding the effect of geologic conditions on the proposed development, and an opinion on the adequacy, for the intended use, of the site as affected by geologic factors.

The Final Engineering Geology Report to be completed after completion of grading, as required by the 1998 CBC Appendix Chapter 33, Section 3318.1, shall contain the following: 1) a final description of the geology of the site and any new information disclosed during grading; and 2) the effect of same on recommendations incorporated in the approved grading plan. The engineering geologist shall submit a statement that, to the best of his or her knowledge, the work within the area of responsibility is in accordance with the approved Engineering Geology Report and applicable provisions of this chapter.

Verification: (1) Within fifteen (15) days after submittal of the application(s) for grading permit(s) to the CBO, the project owner shall submit a signed statement to the CPM stating that the Engineering Geology Report has been submitted to the CBO as a supplement to the plans and specifications and that the recommendations contained in the report are incorporated into the plans and specifications. (2) Within ninety (90) days following completion of the final grading, the project owner shall submit copies of the Final Engineering Geology Report required by the 1998 CBC Appendix Chapter 33, Section 3318 Completion of Work, to the CPM and the CBO.

PAL-1 Prior to the start of any project-related construction activities (defined as any construction-related vegetation clearance, ground disturbance and preparation, and site excavation activities), the project owner shall ensure that the designated paleontological resource specialist approved by the CPM is available for field activities and prepared to implement the Conditions of Certification.

The designated paleontological resources specialist shall be responsible for implementing all the paleontological Conditions of Certification and for using qualified personnel to assist in this work.

> Protocol: The project owner shall provide the CPM with the name and statement of qualifications for the designated paleontological resource specialist.

The statement of qualifications for the designated paleontological resources specialist shall demonstrate that the specialist meets the following minimum qualifications: a degree in paleontology or geology or paleontological resource management; and at least three years of paleontological resource mitigation and field experience in California, including at least one year's experience leading paleontological resource mitigation and field activities.

The statement of qualifications shall include a list of specific projects the specialist has previously worked on; the role and responsibilities of the specialist for each project listed; and the names and phone numbers of contacts familiar with the specialist's work on these referenced projects.

If the CPM determines that the qualifications of the proposed paleontological resource specialist are not in concert with the above requirements, the project owner shall submit another individual's name and qualifications for consideration.

If the approved designated paleontological resource specialist is replaced prior to completion of project mitigation, the project owner shall obtain CPM approval of the new designated paleontological resource specialist by submitting the name and qualifications of the proposed replacement to the CPM, at least ten (10) days prior to the termination or release of the preceding designated paleontological resource specialist.

Should emergency replacement of the designated specialist become necessary, the project owner shall immediately notify the CPM to discuss the qualifications of its proposed replacement specialist.

Verification: At least ninety (90) days prior to the start of construction, the project owner shall submit the name and resume and the availability for its designated paleontological resource specialist, to the CPM for review and approval. The CPM shall provide written approval or disapproval of the proposed paleontological resource specialist.

At least ten (10) days prior to the termination or release of a designated paleontological resource specialist, the project owner shall obtain CPM approval of the replacement specialist by submitting to the CPM the name and resume of the proposed new designated paleontological resource specialist. Should emergency replacement of the designated specialist become necessary, the project owner shall immediately notify the CPM to discuss the qualifications of its proposed replacement specialist.

PAL-2 Prior to the start of project construction, the designated paleontological resource specialist shall prepare a Paleontological Resources Monitoring and Mitigation Plan to identify general and specific measures to minimize potential impacts to sensitive paleontological resources, and submit this plan to the CPM for review and approval. After CPM approval, the project owner's designated paleontological resource specialist shall be available to implement the Monitoring and Mitigation Plan, as needed, throughout project construction.

In addition to the project owner's adoption of the guidelines of the Society of Vertebrate Paleontologists (SVP 1994) the Paleontological Resources Monitoring and Mitigation Plan shall include, but not be limited to, the following elements and measures:

- A discussion of the sequence of project-related tasks, such as any pre-construction surveys, fieldwork, flagging or staking; construction monitoring; mapping and data recovery; fossil preparation and recovery; identification and inventory; preparation of final reports; and transmittal of materials for curation;

- Identification of the person(s) expected to assist with each of the tasks identified within this Condition of Certification, and a discussion of the mitigation team leadership and organizational structure, and the inter-relationship of tasks and responsibilities;

- Where monitoring of project construction activities is deemed necessary, the extent of the areas where monitoring is to occur and a schedule for the monitoring;

- An explanation that the designated paleontological resource specialist shall have the authority to halt or redirect construction in the immediate vicinity of a vertebrate fossil find until the significance of the find can be determined;

- A discussion of equipment and supplies necessary for recovery of fossil materials and any specialized equipment needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits;

- Inventory, preparation, and delivery for curation into a retrievable storage collection in a public repository or museum, which meets the Society of Vertebrate Paleontologists standards and requirements for the curation of paleontological resources; and

- Identification of the institution that has agreed to receive any data and fossil materials recovered during project-related monitoring and mitigation work, discussion of any requirements or specifications for materials delivered for curation and how they will be met, and the name and phone number of the contact person at the institution.

Verification: At least sixty (60) days prior to the start of construction on the project, the project owner shall provide the CPM with a copy of the Monitoring and Mitigation Plan prepared by the designated paleontological resource specialist for review and approval. If the plan is not approved, the project owner, the designated paleontological resource specialist, and the CPM shall meet to discuss comments and negotiate necessary changes.

PAL-3 Prior to the start of construction, and throughout the project construction period as needed for all new employees, the project owner and the designated paleontological resource specialist shall prepare and conduct CPM-approved training to all project managers, construction supervisors, and workers who operate ground disturbing equipment. The project owner and construction manager shall provide the workers with the CPM-approved set of procedures for reporting any sensitive paleontological resources or deposits that may be discovered during project-related ground disturbance.

> Protocol: The paleontological training program shall discuss the potential to encounter paleontological resources in the field, the sensitivity and importance of these resources, and the legal obligations to preserve and protect such resources.

The training shall also include the set of reporting procedures that workers are to follow if paleontological resources are encountered during project activities. The training program shall be presented by the designated paleontological resource specialist and may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or any other areas of interest or concern.

Verification: At least thirty (30) days prior to the start of project construction, the project owner shall submit to the CPM for review, comment, and written approval, the proposed employee training program and the set of reporting procedures the workers are to follow if paleontological resources are encountered during project construction.

If the employee training program and set of procedures are not approved, the project owner, the designated paleontological resource specialist, and the CPM shall meet to discuss comments and negotiate necessary changes before the beginning of construction.

Documentation for training of additional new employees shall be provided in subsequent Monthly Compliance Reports, as appropriate.

PAL-4 The designated paleontological resource specialist shall be present at all times he or she deems appropriate to monitor construction-related grading, excavation, trenching, and/or augering in areas where potentially fossil-bearing sediments have been identified. If the designated paleontological resource specialist determines that full-time monitoring is not necessary in certain portions of the project area or along

portions of the linear facility routes, the designated specialist shall notify the project owner.

Verification: The project owner shall include in the Monthly Compliance Reports a summary of paleontological activities conducted by the designated paleontological resource specialist.

PAL-5 The project owner, through the designated paleontological resource specialist, shall ensure recovery, preparation for analysis, analysis, identification and inventory, the preparation for curation, and the delivery for curation of all significant paleontological resource materials encountered and collected during the monitoring, data recovery, mapping, and mitigation activities related to the project.

Verification: The project owner shall maintain in its compliance files copies of signed contracts or agreements with the designated paleontological resource specialist and other qualified research specialists who will ensure the necessary data and fossil recovery, mapping, preparation for analysis, analysis, identification and inventory, and preparation for and delivery of all significant paleontological resource materials collected during data recovery and mitigation for the project. The project owner shall maintain these files for a period of three (3) years after completion and approval of the CPM-approved Paleontological Resources Report and shall keep these files available for periodic audit by the CPM.

PAL-6 The project owner shall ensure preparation of a Paleontological Resources Report by the designated paleontological resource specialist. The Paleontological Resources Report shall be completed following completion of the analysis of the recovered fossil materials and related information. The project owner shall submit the paleontological report to the CPM for approval.

> Protocol: The report shall include (but not be limited to) a description and inventory list of recovered fossil materials; a map showing the location of paleontological resources encountered; determinations of sensitivity and significance; and a statement by the paleontological resource specialist that project impacts to paleontological resources have been mitigated.

Verification: The project owner shall submit a copy of the Paleontological Resources Report to the CPM for review and approval under a cover letter stating that it is a confidential document. The report shall be prepared by the designated paleontological resource specialist within ninety (90) days following completion of the analysis of the recovered fossil materials.

PAL-7 The project owner shall include in the facility closure plan a description regarding facility closure activity's potential to impact paleontological resources. The conditions for closure will be determined when a facility closure plan is submitted to the CPM at least twelve (12) months prior to closure of the facility. If no activities are proposed that would potentially impact paleontological resources, then no mitigation

measures for paleontological resource management are required in the facility closure plan.

> Protocol: The closure requirements for paleontological resources are to be based upon the Paleontological Resources Report and the proposed grading activities for facility closure.

Verification: The project owner shall include a description of closure activities described above in the facility closure plan.

VII. LOCAL IMPACT ASSESSMENT

All aspects of a power plant project can affect, to some degree, the community in which it is located. The affect 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 address 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. In general, a power plant project may be incompatible with existing and planned land uses if it creates unmitigated noise, dust, public health hazards or nuisance, traffic, or visual impacts, or when it significantly restricts existing or planned future uses.

In reviewing whether a land use impact is significant, we refer to the following CEQA criteria:[98]

- Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.
- Would the project disrupt or divide the physical arrangement of an established community.
- Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.

[98] 14 Cal. Code of Regs., section 15000 et seq., Appendix G.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The San Jose 2020 General Plan, the North Coyote Valley Campus Industrial Area Master Development Plan ("Master Development Plan") as amended, the Riparian Corridor Policy Study, the San Jose Zoning Ordinance, and the Santa Clara County General Plan are the ordinances and policies relevant to the MEC. (Ex. 7, pp. 192-194.)

The San Jose 2020 General Plan designates the MEC site (and the adjacent Passantino property) as Campus Industrial under the North Coyote Master Development Plan, which allocates about 1,444 acres for development of a "high prestige" area for industrial research and development, administration, marketing, assembly, and manufacturing with a potential for 50,000 jobs. (1/31/01 RT 193; Ex. 76, pp. 8, 13.) The General Plan provides that campus industrial development should be of high quality, being sensitive to the area's environmental features such as hills, views, existing trees, and agricultural history. In October 2000, the San Jose City Council approved a rezoning for the North Coyote Valley Research Park (CVRP/Cisco Systems) to develop about 688 acres of campus industrial on property southeast of the MEC site, eventually reaching build-out within approximately 1,000 feet of the proposed power plant. (*Id*. at p. 13.)

1. The MEC Site.

The proposed site is located at the northern tip of Coyote Valley at the base of Tulare Hill, which lies at the southernmost part of urbanized San Jose. The site is bordered by Fisher Creek to the north and west and the Union Pacific Railroad tracks to the east. Monterey Road runs parallel to the railroad tracks along the eastern border and Blanchard Road is to the south. (Ex. 7, pp. 194-195.)

The power plant will occupy roughly 10.73 acres of a 20-acre site within a larger 126-acre parcel. The parcel includes 116 acres on the southeast side of Tulare

Hill (Lot 5) and 10 acres of flat area at the base of Tulare Hill on the southeast side of Fisher Creek (Lot 7). The 126-acre parcel is currently in unincorporated Santa Clara County but within the Sphere of Influence of the City of San Jose.[99] Lot 7 is located within the City's Urban Service Area.[100] (Ex. 7, p. 191; Ex. 76, p. 3.) Applicant also has an ownership interest in a 10-acre lot south of Lot 7 that is within San Jose city limits (Lot 6) and zoned A-Agricultural.[101]

2. Potential Impacts

The entire MEC site is designated Prime Farmland on the Department of Conservation's 1998 Important Farmland Map for Santa Clara County. (Ex. 7, p. 195.) Lot 7 is currently used for storage of old vehicles and debris, raising poultry, and some cattle grazing while Lot 6 is irrigated and farmed for field crops. Applicant intends to combine Lots 6 and 7 to configure the 20-acre site for the project.[102] (Ex. 7, p. 191.)

Staff asserts that development of the 20-acre site would constitute conversion of prime farmland and create a significant adverse impact to agriculture. (1/31/01 RT 128-129; Ex. 7, pp. 219-220.) Applicant acknowledges that the MEC will convert agricultural land to non-agricultural uses. However, Applicant contends

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[99] A city's Sphere of Influence delineates the expected future physical boundaries and service area of that city.

[100] An Urban Service Area (USA) is defined as all developed, undeveloped, or agricultural lands, either incorporated or unincorporated, within a city's Sphere of Influence, where services and facilities are generally available, and where urban development requiring such services should be located. According to Santa Clara County's General Plan, San Jose's General Plan controls development of the County portion of the site because it is within the City's USA. (1/31/01 RT 187.) The County does not apply any General Plan designation or classification of prescriptive land uses or densities to unincorporated parcels in a city's USA. Instead, allowable land uses and densities are determined by the applicable city's General Plan. (Ex. 7, p. 218.)

[101] Applicant will lease an additional 10 acres south of Lot 6 for the temporary construction laydown area. (Ex. 7, p. 218; Ex. 10, p. 12.)

[102] The Tulare Hill portion of the 126-acre parcel (Lot 5) is designated "Non-Urban Hillside" on the Land Use Diagram of the San Jose General Plan and would remain in the County. (Ex. 7, pp. 191, 199 fn. 9.) Applicant proposes to protect Lot 5 in perpetuity as open space. (1/31/01 RT 42.)

the conversion of prime farmland in the site vicinity is not a new impact because it was contemplated in the City's redesignation of the entire North Coyote Valley area from agricultural to Campus Industrial in the 1985 North Coyote Master Development Plan.[103] (1/31/01 RT 46, 74-75; Ex. 10, p. 13.) Applicant argues that the environmental impacts associated with the City's adoption of the Campus Industrial land use designation were considered by the City in the environmental document accompanying that action.[104]

Applicant further contends that developing Lot 7 will not result in conversion of prime farmland because the property is not farmed or irrigated. (1/31/01 RT 47-53.) According to Staff, the County's significance threshold for conversion of prime farmland is ten or more acres based on soil constituents regardless of whether the land is actually farmed or irrigated. Lot 7 is classified prime soil in the Soil Survey of Eastern Santa Clara County and is therefore considered prime farmland. (Ex. 7, p. 220.) Staff concedes, however, that the designation as "prime soil" does not necessarily mean the land is suitable for farming in all circumstances. (1/31/01 RT 142-144.)

Applicant claims that development of Lot 6 will not result in a significant impact on agriculture because the City found in other environmental reviews that conversion of larger parcels of prime farmland in an Urban Service Area was less than significant. Applicant asserts that the entire 20-acre site is a small percentage of the acreage designated as prime farmland in the County. (1/31/01

[103] The City of San Jose is built on prime soils and most of the vacant valley floor land in San Jose, including the Coyote Valley, is designated prime farmland by the Department of Conservation. Under the General Plan, preservation of all prime soil would mean a virtual halt to urbanization. The City's goal therefore is to avoid the premature conversion of agricultural land to urban uses. Since 1985, the City has anticipated development of the North Coyote Valley and although the area continues to be farmed, the development of the MEC does not constitute a "premature" conversion. (Ex. 7, p. 207.) Indeed, Staff acknowledged that conversion of prime farmland was deferred pending development in the Coyote Valley. (Ex. 7, pp. 764-765.)

[104] Staff confirmed that an EIR for a General Plan often recognizes that its implementation will result in significant and unavoidable impacts as in this case where Campus Industrial use results in conversion of prime farmland. (1/31/01 RT 154.) Consequently, when the City approved the Cisco project, it determined the project's conversion of prime farmland was significant and made findings of overriding considerations. (1/31/01 RT 75-76, 130-132; Ex. 7, p. 220.)

RT 48-52; Ex. 10, p. 13.) Although the CEQA Guidelines do not specify the number of converted acres of Important Farmland that would trigger an analysis of significant impacts, Staff relied on the City Planning Department's view that any conversion of prime farmland would constitute a significant impact.[105] (1/31/01 RT 130; Ex. 7, p. 220.)

Applicant provided evidence that the 1998 Important Farmland Map for Santa Clara County is outdated and does not accurately reflect the condition of the land. (Ex. 77, p. 7.) Further, Applicant noted that Appendix G of the CEQA Guidelines does not require use of the Important Farmland Map; rather, the Department of Conservation's ("Department") findings may be used as an optional model. Applicant believes the Department's 1994 "Guide to Farmland Mapping and Monitoring Program" contains the more relevant criteria for defining "prime farmland" and under those criteria, the site does not meet the definition. (*Ibid*.) Finally, Applicant argued that Appendix G does not compel a finding of significant adverse impact but provides that conversion of prime farmland may be classified in one of four ways (1) potentially significant; (2) less than significant with mitigation; (3) less than significant; and (4) no impact.

We agree with Applicant. The City's General Plan redesignating the North Coyote Valley area as Campus Industrial anticipated the unavoidable conversion of prime farmland as evidenced by the EIRs for the Master Development Plan and the CVRP/Cisco project. Even if the 20-acre MEC site met the criteria for prime farmland under any of the proffered definitions, the small number of converted acres would not constitute a significant environmental impact given the surrounding urban development and Campus Industrial designation. Furthermore, Staff acknowledges that the project parcel would likely be converted to other uses in any event, and that non-development of the present

[105] Applicant submitted EIRs for other projects in San Jose where the City indicated that parcels of less than 50 acres of prime farmland are not viable for agricultural uses if located within an Urban Service Area and therefore conversion of such property is not a significant impact. (1/31/01 RT 49-52; Ex. 90; Ex. 91, pp. 2-3.)

project would result in only a deferral of that conversion. (Ex. 7, pp. 764-765.) Accordingly, we find that the conversion of the parcel for use by the MEC will not result in a significant adverse impact.[106]

Rezoning for Lots 6 and 7 is necessary in order to reconfigure the 20-acre site for the project. Under the Santa Clara County zoning ordinance, unincorporated areas proposed for development contiguous to a city must be annexed by the city.[107] (Ex. 76, p. 6.) The City of San Jose asserts that Lot 7 fits this category and must obtain its land use entitlements from San Jose, including annexation. (*Ibid*.; 1/31/01 RT 62.)

The San Jose Zoning Code requires all properties to have a zoning district. The City's Zoning Ordinance allows power plants only in Heavy Industrial zoning districts where heavy industrial uses predominate. As a result, the City Planning Department advised Applicant to file a prezoning application for Lot 7.[108] In addition, the A-Agriculture zoning designation for Lot 6 does not allow power plants and a rezoning is therefore required to accommodate the proposed use.

All prezonings and rezonings must be consistent with the City's General Plan. (1/13/01 RT 187-189.) The North Coyote Master Development Plan sets forth development standards in the North Coyote Valley that require Planned

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[106] We note that Appendix G of the Guidelines contains a checklist which is to be used as part of an agency's initial study to assist it in making the determination of whether or not to prepare a full environmental analysis of a project. [14 Cal. Code of Regs., §15063 (d) (3), (f).] The mere fact that a specific item on the checklist is appropriate does <u>not</u> mean that such item necessarily equates with a significant impact.

[107] See, Santa Clara County Zoning Ordinance Nos. NS-1200.190 and NS-1203.75. A special provision of the Cortese-Knox Local Government Reorganization Act of 1985 (Gov. Code § 56826) allows cities within Santa Clara County to approve their own annexations within the established urban service area, bypassing the approval of the Santa Clara County Local Agency Formation Committee (LAFCO). This procedure is referred to generally as "city-conducted" annexations. (1/31/01 RT 222-223; Ex. 7, p. 191, fn. 3.) However, LAFCO approval is required when a city provides urban services to an unincorporated area. (1/31/01 RT 220-221.)

[108] Mr. Kent Edens, the Deputy Director of the City's Department of Planning, Building, and Code Enforcement, testified that he advised Applicant on these issues. (1/31/01 RT 185; Ex. 76, p. 8, et seq.)

Development (PD) zoning approvals and Environmental Performance Standards.[109] (Ex. 7, p. 192.)

Since power plants are not an allowed use under the Campus Industrial designation set forth in the North Coyote Master Development Plan, the City advised Applicant to seek a General Plan amendment to change the zoning designation of the MEC site to Public/Quasi-Public rather than Heavy Industrial and to seek prezoning/rezoning.[110] (Ex. 76, pp. 8-9; Ex. 7, pp. 199-200; 243.) The Public/Quasi Public designation is commonly used to identify public land uses such as schools, fire stations, airports and some quasi-public uses such as utilities. (Ex. 76, p. 9.) The General Plan was amended in 1999 to clarify that private facilities involved in providing public services such as gas, water, electricity, and telecommunications can be considered under this designation. (*Ibid*.; Ex. 7, p. 200.)

Applicant filed a General Plan amendment in March 1999, and a PD prezoning/rezoning request[111] and annexation application in August 1999. (Ex. 76, p. 11.) The City's Planning Commission deferred review until November 2000, after the Final Staff Assessment (Ex. 7) was published. At its meeting on November 15, 2000, the Planning Commission recommended to the City Council that the General Plan be amended to designate the site as Public/Quasi-Public and to approve the PD prezoning/rezoning. On November 28, 2000, the City Council voted unanimously to deny the General Plan amendment and the PD

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[109] Planned Development (PD) zoning enables the City to consider the unique characteristics of a development site and its surroundings to better implement the objectives, goals, and policies of the General Plan. (City of San Jose 2020 General Plan at pp. 243-244.) PD zoning is always combined with a conventional zoning category. (Ex. 7, p. 193.)

[110] The General Plan designates the Heavy Industrial category for uses with nuisance or hazardous characteristics, which for reasons of public health and safety are best segregated from other uses. (San Jose 2020 General Plan, p. 212.) To limit development of other heavy industrial uses in the North Coyote Valley, Mr. Edens identified the Public/Quasi-Public designation to be appropriate for the MEC and consistent with the same designation for the nearby PG&E Metcalf Substation. (Ex. 76, p. 9.)

[111] Applicant amended its PD prezoning/rezoning request in September 2000.

prezoning/rezoning. (1/31/01 RT 199-200; Ex. 76, pp. 23-24; see, City Council Resolution attached to Ex. 76 as "Exhibit J".) The annexation application was not scheduled nor considered. (Ex. 10, p. 14.)

As a result of the City Council's decision, the City maintains that development of the MEC at the proposed site is contrary to the major policy principles and specific elements of the General Plan, the North Coyote Master Development Plan, and the Riparian Corridor Policy, representing nonconformity and inconsistency with local laws, ordinances, regulations, and standards.[112] (1/31/01 RT 199, 205 et seq.; Ex. 76, p. 25.) As a policy matter, the City asserts the project is incompatible with the type of use envisioned for the North Coyote Valley

3. Consistency with Laws, Ordinances, Regulations, and Standards (LORS)

Staff's analysis, which was filed prior to the City Council's vote, assumed the project was not in conformance with the General Plan and zoning designations. (1/31/01 RT 125, 172.) Staff reviewed the applicable city and county LORS and found the project would be inconsistent with one development guideline (height limit) and two development standards in the Master Development Plan (railroad and site boundary setbacks), two guidelines in the Riparian Corridor Policy Study (setback and noise policy), and two policies of the Santa Clara County General Plan (location of gas pipeline and gas metering station). (Ex. 7, pp. 228-229.) The City apparently concurs with Staff's analysis. (City of San Jose Opening Brief, Group 1 & 2 (April 4, 2001), pp. 5-6; Ex. 76, pp. 19-22.)

We disagree with Staff's conclusions because at least some of the inconsistencies identified are apparently mitigated or otherwise cured by Conditions of Certification, and others presumably no longer exist since we have

[112] Applicant asserts the nonconformance would be cured by a General Plan amendment and rezoning and requests the Commission to override the City's decision. (1/31/01 RT 267-268; Applicant's Opening Brief on Group 1 and 2 Topics (April 4, 2001), pp. 2-46 and 2-47.)

required the project to meet applicable noise standards at the property line and have concluded that the project will not cause significant visual or land use (agricultural conversion) impacts. If an inconsistency has been remedied by mitigation, then the project would comply with LORS. If mitigation does not cure the inconsistency but there is reasonable compliance under the circumstances, we may be compelled to find a *technical* inconsistency.

To resolve these issues, we require additional clarification. We therefore direct the parties in their comments on this Proposed Decision to list the project's remaining inconsistencies with LORS, indicating whether or not mitigation described in the record cures the inconsistency and the reasons therefor.[113] Preferably, Applicant, Staff, and the City will be able to stipulate on this matter.

The following summarizes our understanding of the record regarding project conformance with local LORS, including the Conditions of Certification that are designed to mitigate the inconsistencies:

San Jose 2020 General Plan.

Land Use Diagram: MEC is *inconsistent* with the Campus Industrial designation. Under the current zoning designation, the site is limited to agricultural uses.

Economic Development major strategy is designed to maximize the economic potential of the City's land resources while providing employment opportunities to San Jose's residents. Staff found that although the MEC would only provide about 24 permanent jobs, it would provide about $600,000 annually in property taxes and would not create a demand on City services. (Ex. 7, p. 200; see also 1/31/01 RT 100-101; Ex. 10, Appendix F, p. 6.) Staff therefore concluded that MEC is consistent with the Economic Development strategy. The City disagreed on the ground that the project is *inconsistent* with the strategy to improve the economic base through job growth. (1/31/01 RT 218.) We believe this issue could be resolved with a rezoning of the project site.

[113] The City argues that the Commission may make override findings only if a noncompliance cannot be corrected or eliminated after consulting with the concerned agency to determine appropriate mitigation. [City of San Jose Opening Brief, Group 1 & 2 (April 4, 2001), p. 6 citing Pub. Resources Code, § 25523(d)(1).]

Urban Design Policy #1 refers to architectural and site design controls for the protection and development of neighborhood character and for the proper transition between areas with different types of land uses. Staff found that the project's architectural design would be visually incompatible with the planned Campus Industrial uses. Condition **VIS-9** incorporates mitigation measures to ensure the project will comply with the design guidelines for North Coyote Valley, and would therefore seem to cure this inconsistancy.

Urban Design Policy #11 establishes a maximum building height of 120 feet for the Campus Industrial designated areas of North Coyote Valley, and a maximum height of 95 feet in any area designated for Public/Quasi-Public uses. Exemptions to the height limits may be appropriate for structures other than buildings where substantial height is intrinsic to the function of the structures and where such structures are located to avoid significant adverse effects on adjacent properties. The project is designed to meet the height limit for all proposed buildings and structures except the 145-foot tall Heat Recovery Steam Generator (HRSG) stacks and some ancillary structures. (1/31/01 RT 134; Ex. 7, p. 205.) Applicant asserts that 145-foot tall HRSG stacks are necessary for adequate dispersion of project emissions to prevent significant adverse impacts to local air quality. (1/31/01 RT 101-102.) In the absence of an exemption, the MEC is *inconsistent* with Urban Design Policy # 11. (This policy is considered a Guideline under the North Coyote Master Development Plan. See discussion, *infra.*)

The Energy Commission has exclusive authority to permit the project and therefore the City's discretionary approval of a height exemption for the HRSGs is not a condition precedent for certification. We typically incorporate conditions that the local jurisdiction would have imposed upon approving a variance. In this regard, the City may submit a list of such conditions for Committee consideration during the comment period on the Proposed Decision. As we find in the **Visual Resources** discussion, the HRSG stack height would not result in significant adverse environmental impacts to visual resources based on the architectural design and location of project components.

Trails and Pathways Policy #1 requires sufficient trail right-of-way for new development adjacent to the corridors that does not compromise safe trail access nor detract from the scenic and aesthetic qualities of the corridor. *Policy #2* provides that projects adjacent to a designated Trails and Pathways Corridor should install and maintain the trail. *Policy #7* states that trail design should provide sufficient light, vertical and horizontal clearance, and landscape setbacks from adjacent development to ensure a safe and aesthetically pleasing recreational experience.

The General Plan Scenic Routes and Trails Diagram shows a recreational trail running along Fisher Creek. The MEC will maintain a 100-foot setback from the Fisher Creek riparian corridor. Within the setback area, sufficient

trail right-of-way can be accommodated along the southeast side of Fisher Creek. Thus, the project would be consistent with this part of Trails and Pathways Policy #1. However, Staff found the project would result in substantial visual impacts for views from the designated trail corridor along Fisher Creek and would detract from the scenic and aesthetic qualities of the corridor. Thus, according to Staff, the project would be *inconsistent* with Trails and Pathways Policy #1 (Ex. 7, p. 206.) Landscaping described in the **Visual Resources** section is designed to mitigate this impact, and we have concluded that the project will not in any event create significant adverse visual impacts.

Although the current landscape plan for the project does not depict a trail within the Fisher Creek riparian setback area, Applicant will construct a trail along the MEC property line if it can be connected to a trail network in the area. Condition **LAND-1** requires Applicant to build and maintain the portion of the Fisher Creek trail that crosses the MEC site when it can be connected to a larger trail network. This ensures project consistency with Trails and Pathways Policies #2 and #7.

North Coyote Valley Campus Industrial Area Master Development Plan

The Master Development Plan sets forth the City's general goals for North Coyote Valley: (1) to provide much-needed, large, single-user sites where major companies can consolidate their operations; and, (2) ensure the region's long-term economic health. Although the MEC is not a high technology or labor intensive use as contemplated in the Plan, both Staff and Applicant assert the project is supportive of these goals. (1/31/01 RT 58-59; Ex. 7, p. 208.)

The Private Improvement Guideline on building height limitations is based on Urban Design Policy #11 of the General Plan. The MEC is *inconsistent* with this guideline although a discretionary exemption would cure the inconsistency. We have added condition **LAND-11** to address the height limitation guideline.

The Private Improvement Guideline on "orchard-like" landscape planting in parking areas envisions equally spaced trees and shrubs to provide shade and to camouflage the urban character of large, visible parking lots. The landscape plan for the MEC parking area conflicts with this guideline because trees and shrubs are not equally spaced throughout the parking area but clustered around its edges. However, the MEC parking area would not be visible from Monterey Road or adjacent property since it would be completely screened by buildings and rows of trees. (Ex. 7, p. 209.) Applicant did not include orchard-like planting between the parking lot and the HRSGs for visibility and safety reasons, but the administration building can be designed to provide shade relief. (Ex. 10, p. 8.) Staff proposed Condition **LAND-2** to require landscaping consistent with this guideline. Applicant objected on the ground that orchard planting is not necessary or

reasonable since the parking lot is small, not open to the public, and not visible from public roads. (1/31/01 RT 44, 57-58; Ex. 10, p. 9.) Although the landscape design plan is *technically inconsistent* with this guideline, it accomplishes the goals of providing screening and shade. (1/31/01 RT 69-70.) Moreover, the City indicated that compliance with this guideline is not critical. (1/31/01 RT 225.) We have modified Condition **LAND-2** to allow flexibility in the landscape design.

General Development Plan Standard for Site Boundary Setbacks between Campus Industrial uses, which do not abut public streets, is 100 feet for all buildings and structures and 15 feet for uncovered off-street parking. MEC's administration building and other service buildings are set back 70 feet from the southern property boundary. To meet the 100-foot standard, Applicant negotiated a restrictive covenant for a 130-foot strip of land on the Passantino property adjacent to the MEC's southern boundary. Within that strip of land, a 30-foot-wide Open Space Easement will be landscaped by the project owner and remain in agricultural use until such time that the Passantino property converts from agriculture to Campus Industrial. (1/31/01 RT 41, 80.) Condition **LAND-3** requires a minimum of 70-foot setback and Condition **LAND-5** requires the MEC to submit a recorded copy of the Restrictive Covenant and Easement Agreement that provide for the additional 30 feet to comply with the objective of this standard. With implementation of these Conditions, we find that the MEC would comply with the site boundary setback standard.

General Development Plan Standard for a Landscape Easement on the Monterey Highway Edge (formerly a Private Improvement Guideline that was adopted as a Master Plan standard in October 2000) requires a 50-foot landscape easement to separate properties from the Union Pacific railroad (UPRR) right-of-way. (1/31/01 RT 135; Ex. 7, p. 210.) Applicant's landscape plan shows a continuous row of trees along the eastern property line. However, the row of trees between the MEC and the UPRR right-of-way would be less than 5 feet in width. The majority of the structure setback area (which ranges from about 32 feet to 43 feet) contains an access road that encircles the power blocks. A buffer exists between the UPRR and Monterey Road where Applicant will install landscaping to screen offending views. (1/31/01 RT 40, 151.) Since the proposal does not meet the exact 50-foot easement, Staff found the project would be *inconsistent* with this standard. 1/31/01 RT 150-151.) Applicant asserts that MEC will meet the spirit and intent of the setback requirement since the primary purpose is to screen views from office buildings on the site, travelers on Monterey Road, and train passengers. (1/31/01 RT 40, 43.) Applicant also notes that the City has granted exceptions to the riparian corridor policy to address "differing situations." (Applicant's Opening Brief on Group 1 & 2 Topics (April 4, 2001), p. 2-58 citing 1/31/01 RT 263-264:8-12.)

In the section on **Visual Resources**, we concluded that visual impacts to passersby would be less than significant due to the short duration of these views. (See also, 1/31/01 RT 150-151.) Thus, noncompliance with this standard would not result in an adverse environmental impact. Condition **VIS-5** requires the MEC to submit a landscaping plan for review and approval prior to operation of the power plant. Condition **LAND-3** ensures that structure and building setbacks on the eastern property line substantially meet the General Plan setback requirements. Applicant challenged the precise measurements initially proposed by Staff for this condition. (Ex. 10, pp. 10-11.) Staff agreed to additional language indicating that a lesser setback would be acceptable upon consultation with the City and the Commission's Compliance Manager. (1/31/01 RT 139.) We adopt Staff's modification.

General Development Plan Standard on Setbacks for the Fisher Creek Right-Of-Way requires a minimum setback of 100 feet for all buildings and structures and 50 feet for all uncovered off-street parking areas. The MEC's setback from the Fisher Creek right-of-way for all proposed buildings, structures, and parking areas would be a minimum of 100 feet so the project would comply with this standard. (1/31/01 RT 41-42, 81-82.) Condition **LAND-3** ensures that the MEC will maintain a 100-foot setback from the Fisher Creek riparian area.

The Environmental Performance Standards prohibit uses that cause dangerous emissions of criteria air pollutants or toxic pollutants that are detectable at the property line. (Ex. 76, p. 20.) The record indicates that, with mitigation, the MEC will comply with all applicable state and federal standards on air quality. (See also, the **Air Quality** and **Public Health** section of this Decision.) The City expressed concern that notwithstanding compliance with applicable laws, the MEC could potentially result in localized air quality impacts in the project area. (1/31/01 RT 226-228, 235.) We have adopted Conditions of Certification to ensure that the MEC complies with the applicable air quality laws, have examined localized impacts, and therefore we find the City's concerns have been addressed.

Riparian Corridor Policy Study

Guideline 1A: Orientation indicates that site activities should be oriented to draw activity away from the riparian corridor. Staff believes the project is consistent with this guideline regarding lighting, loading, and entry. (Ex. 7, p. 214.) However, the project is *inconsistent* with the guideline to the extent that noise-generating equipment such as the cooling tower and electrical switchyard are located along the riparian edges of the property. Relocating the cooling tower to an area along the southern property line would place it in a more visually prominent location increasing visual impacts. Since we have determined that the project must meet applicable standards at the property line and that noise levels will not cause a significant adverse impact on

wildlife in the Fisher Creek riparian area, we do not believe it is necessary to reconfigure the project components to conform to this guideline. (See the **Biological Resources and Noise** portions of this Decision.)

Guideline 2F on Noise states that noise producing stationary equipment should be located away from riparian corridors to keep noise levels below ambient levels in the corridors. The record indicates that noise produced by the power plant may exceed ambient noise levels in the Fisher Creek riparian area at certain times and would therefore be *inconsistent* with this guideline. However as we indicated above, project noise levels will not cause a significant adverse impact on wildlife in the Fisher Creek riparian area. (See the **Biological Resources** portion of this Decision.) Moreover, requiring the project to meet applicable noise standards at the property line will reduce these impacts to the extent feasible. (See the **Noise** portion of this Decision.)

Santa Clara County General Plan

Land Use Policies: Rural Unincorporated Area Issues and Policies

R-LU 74 indicates that gas and electric transmission distribution facilities should be in locations that minimize aesthetic impacts and avoid developed residential and/or public recreation areas. The MEC gas pipeline will travel through the Coyote Creek Parkway and is therefore *inconsistent* with the County's policy to avoid public recreation areas. (Ex. 7, p. 217.) Condition **LAND-8** requires MEC to obtain necessary easements and to avoid noisy and dusty construction activities during permitted park events. Implementation of this Condition ensures that pipeline construction will not result in significant adverse land use impacts.

R-LU 75 indicates that electric substations and gas control metering stations should be located, designed, and landscaped to fit inconspicuously and harmoniously into the area, avoiding locations along scenic roads and heavily traveled highways. The MEC's natural gas metering station will be located immediately adjacent to the PG&E gas main on the eastern side of U.S. 101 and may therefore be *inconsistent* with this policy. The gas metering station would be classified as a "public utility and service use" under the County's Zoning Ordinance. Santa Clara County allows public utility uses in any zoning district with a conditional use permit. (Ex. 7, p. 218.) Since the Commission has exclusive authority to permit the gas pipeline, a use permit from the County is not a condition precedent for certification although we typically incorporate conditions that the local jurisdiction would have imposed if a use permit were required. We have determined that the location of the gas metering station does not result in significant adverse visual impacts with implementation of the mitigation described in the **Visual Resources** section.

4. Compatibility with Existing and Planned Land Uses

Applicant asserts the site is an appropriate location for a power plant due to its: (1) proximity to transmission lines and existing substation, which reduces impacts related to transmission corridor development; (2) proximity to fuel supply, recycled water supply, and sanitary sewer, which have underground pipelines presenting no land use conflicts; and (3) proximity to Tulare Hill, an existing road, and a rail transport corridor, which surround the site on three sides and present minimal land use conflicts. (Ex. 10, p. 19.)

The site is not in a neighborhood nor does it divide an established community since agricultural uses predominate the area. (1/31/01 RT 28-31, 132.) The nearest residential development (Santa Teresa) is physically separated from the site by Tulare Hill. Further, the site is sufficiently distant from planned future uses in the area such as the residential development across Highway 101 (about 0.5 mile southeast) and the Coyote Valley Urban Reserve area (about 1.5 to 2 miles south) to avoid impacts on residential neighborhoods. (1/31/01 RT 87-89, 177.) The record also establishes that the project will not create any secondary or unmitigated environmental effects such as dust, nuisances, or other public health impacts. (1/31/01 RT 31, 132.)

We are persuaded by the weight of the evidence that the project is compatible with adjacent land uses, especially given its isolated location and less than significant environmental effects. According to the City's witness, land use compatibility is "not really determined by a land use designation but by actual land uses." (1/31/01 RT 285:19-21.) However, the City concluded that the power plant would be incompatible with the anticipated Campus Industrial development. Therefore, the critical nonconformance in this case is the site's current land use designation. In the absence of a General Plan amendment, annexation, and rezoning for the site, we are compelled to find the project is inconsistent with the City's General Plan and the requisite zoning revisions that would allow a power plant at the site.

The evidence establishes that project nonconformance with the General Plan does not result in significant adverse environmental impacts. (1/31/01 RT 153-154.) The record also indicates that inconsistencies with local LORS can be resolved by appropriate mitigation. Indeed, the local agencies typically exercise discretion in identifying mitigation measures to achieve compliance with LORS.[114] Fundamentally, we believe the inconsistencies described in the record have been mitigated to the extent feasible. However, since the City has not been persuaded that the proposed mitigation achieves compliance, we are compelled to find the project is technically inconsistent with local LORS. As we stated above, the Committee seeks clarification regarding the specific land use LORS that have not been met and the mitigation measures that would apply if the City and/or County were the permitting agency. The parties shall file the list during the comment period on this Proposed Decision.

FINDINGS and CONCLUSIONS

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

1. The Metcalf Energy Center will not disrupt or divide the physical arrangement of an established community.

2. The project site consists of two 10-acre parcels that will be configured as a 20-acre site for the project.

3. The northern 10-acre parcel, which lies at the base of Tulare Hill on the southeast side of Fisher Creek, is located in unincorporated Santa Clara County but within the San Jose Urban Service Area (Lot 7). The southern 10-acre parcel is within San Jose city limits and is zoned A-Agricultural (Lot 6).

4. San Jose's General Plan and zoning ordinances apply to unincorporated areas within the City's Urban Service Area; the City's land use LORS apply to both Lots 6 and 7.

[114] The record indicates that the City has approved power plant projects in areas that are not zoned Heavy Industrial or Public/Quasi-Public.

5. San Jose's General Plan designates the entire MEC site as Campus Industrial under the North Coyote Valley Master Development Plan, which allocates about 1,444 acres for development in the North Coyote Valley.

6. The MEC site is recorded as Prime Farmland on the Department of Conservation's 1998 Important Farmland Map for Santa Clara County.

7. The North Coyote Valley Master Development Plan, adopted in 1985, anticipated the unavoidable conversion of prime farmland in the North Coyote Valley since the City recognized the need for conversion in urban areas to allow development.

8. Conversion of the project site from agricultural uses would likely occur whether or not the MEC were constructed.

9. Conversion of the 20-acre project site does not result in significant adverse impacts to agriculture since it represents a small percentage of the 1,440 Campus Industrial area and is contemplated in the Master Development Plan.

10. Applicant requested City annexation of Lot 6, a General Plan amendment, and prezoning/rezoning as a Public/Quasi-Public land use for the proposed site.

11. The San Jose City Council denied Applicant's request for a General Plan amendment and prezoning/rezoning on November 28, 2000. The annexation request was not scheduled.

12. The MEC project is not currently consistent with the City of San Jose 2020 General Plan or the North Coyote Valley Master Development Plan.

13. The MEC project is not currently compatible with existing and planned land uses.

14. According to Energy Commission staff and City planning staff, the project does not currently comply with the following land use LORS:

    - The General Plan Trails and Pathways Policy #1 relating to visual impacts along the Fisher Creek riparian corridor;

    - The Master Development Plan Standard for a 50-foot landscape easement to separate properties from the Union Pacific railroad right-of-way;

    - The Master Development Plan Standard for 100-foot site boundary setbacks between Campus Industrial uses;

- The Master Development Plan Guideline on orchard-like landscaping in parking areas;

- Urban Design Policy #11 incorporated as Master Development Plan Guideline on building height limitations;

- Riparian Corridor Policy Guidelines 1A and 2F regarding visual and noise levels in the Riparian corridor; and

- Santa Clara County Policies R-LU 74 and R-LU 75 re locating the gas pipeline in public recreational areas and the gas metering station along U.S. 101.

15. Project nonconformance with the General Plan does not result in significant adverse direct or cumulative environmental impacts.

16. Implementation of the Conditions of Certification, below, will ensure project compliance with certain of the applicable land use laws, ordinances, regulations, and standards contained in the pertinent portions of Appendix A of this Decision.

We therefore conclude that the project presently does not comply with all applicable LORS, and that further clarification is needed.

CONDITIONS OF CERTIFICATION

LAND-1 At such time as a connection to a trail network can be made either from north or south of the MEC site, the project owner shall install and maintain the portion of the planned Fisher Creek trail that would cross the MEC site.

Verification: The project owner shall provide updates to the Energy Commission Compliance Project Manager (CPM) on trail developments in the area around the MEC site. The project owner shall submit for CPM review and approval designs for the trail along Fisher Creek on the MEC site and a plan for trail maintenance. The submittal shall include a schedule for when the project owner intends to complete construction of the trail segment. The submittal to the CPM shall include evidence that the City of San Jose Departments of Planning and Public Works have reviewed the trail design and maintenance plan and shall attach and address any recommendations from the City of San Jose.

In the Monthly Compliance Reports during construction, and the Annual Compliance Reports during operation, the project owner shall provide updates to the CPM on trail developments in the area around the MEC site. At least one hundred and eighty (180) days prior to the start of construction of a trail that the

MEC trail could be connected to, the project owner shall submit designs and the maintenance plan to the CPM for review and written approval.

Within seven (7) days after completion of the trail segment, the project owner shall notify the CPM that the trail segment has been completed and is ready for inspection.

LAND-2 The project owner shall landscape the parking area consistent with the "Orchard Planting" Guidelines of the North Coyote Valley Campus Industrial Area Master Development Plan.

Verification: At least thirty (30) days prior to the start of construction of the power plant, the project owner shall submit to the City of San Jose for review and comment and to the CPM a revised landscape plan demonstrating that the landscaping within the parking area is consistent with the North Coyote Valley Campus Industrial Area Master Development Plan guidelines.

Within seven (7) days after completion of the landscaping, the project owner shall notify the CPM that the work has been completed and is ready for inspection.

LAND-3 The project owner shall design and construct the project to satisfy the following setback requirements:

From all power plant site (property) boundaries that abut the existing Fisher Creek right-of-way, the setbacks shall be one hundred (100) feet for all buildings and structures, and fifty (50) feet for all uncovered off-street parking areas.

From the southern property line, the setbacks for all buildings and structures shall be a minimum of seventy (70) feet and fifteen (15) feet for uncovered off-street parking areas.

No project facilities or structures shall be less than thirty-two (32) feet from the power plant site's property boundary that abuts the Union Pacific right-of-way. The following facilities and structures shall be the specified minimum distance from the right-of-way unless a different setback is mutually agreed to by the Chief Building Official (CBO) and the CPM, in consultation with the City of San Jose:

The eastern combustion turbine's air inlet filter: 32 feet 7 inches.

The eastern turbine generator's main transformer: 42 feet.

The boiler feedwater pump enclosure: 37 feet 9 inches.

The Heat Recovery Steam Generator screening structure: 43.5 feet.

Protocol: The project owner shall submit to the CPM final design plans demonstrating that the specified setbacks will be provided. The project owner shall not start construction of the project until the project owner receives written approval of the final design plans from the CPM. When

the project owner has surveyed the property to mark the boundaries of the specified facilities and structures, the project owner shall notify the CPM that the boundaries are available for inspection. The project owner shall not start construction of the specified facilities and structures until the CPM has approved the boundaries. When construction of the specified facilities and structures is completed, the project owner shall submit to the CPM a statement that the specified setbacks have been complied with along with documentation demonstrating compliance with the setback requirements, and shall notify the CPM when the facilities and structures are available for inspection.

Verification: At least sixty (60) days prior to the start of construction, the project owner shall submit the final design plans to the CPM and to the City of San Jose for review and comment. When the boundaries of the specified facilities and structures have been marked, the project owner shall notify the CPM that the boundaries are ready for inspection. Within seven (7) days after completion of construction of the specified facilities and structures, the project owner shall notify the CPM that the facilities and structures are completed and are ready for inspection.

LAND-4 The project owner shall ensure that any project directional signs, identity signs, and gatehouses comply with the "Entry Identification" guidelines of the North Coyote Valley Campus Industrial Area Master Development Plan.

Verification: At least ninety (90) days prior to the commercial operation of the power plant, the project owner shall submit to the CPM a site plan that demonstrates that the project complies with the "Entry Identification" guidelines of the North Coyote Valley Campus Industrial Area Master Development Plan.

Prior to the start of commercial operation of the power plant, the project owner shall notify the CPM that these requirements have been satisfied and that any project directional signs, identity signs, and gatehouses are ready for inspection.

LAND-5 The project owner shall acquire from the property owners (Passantino) immediately south of the MEC site a restrictive covenant agreement running with title that establishes a strip of land one hundred thirty (130) feet in width as a building setback (the "Setback Area"), beginning at the southern MEC property line. Such covenant shall ensure that no buildings or other permanent structures may be constructed, installed, or maintained within the Setback Area in violation of the applicable ordinances, plans, and regulations of the City of San Jose. Such covenant shall not prohibit the construction, installation, or maintenance of roads, driveways, parking areas, landscaping, fencing, lighting and utility facilities, signs, temporary trailers, farm-related fixtures, or other improvements as may be permitted by the applicable ordinances, plans, and regulations of the City of San Jose. Further, the project owner shall acquire an easement (the Open Space Easement) on a strip of land approximately thirty (30) feet in width along the northern boundary of the Passantino Lands. The Open Space Easement area shall remain in agricultural production unless and

until the lands are sold or convert to a Campus Industrial use. At such time, the project owner shall install landscaping within the Open Space Easement. The covenants, easements, and obligations that implement the Setback Area and Open Space Easement shall be perpetual and shall run with the land.

When the Passantino Lands are sold or convert to a Campus Industrial use, the project owner shall submit a landscape plan for the Open Space Easement to the CPM for review and approval, and to the City of San Jose for review and comment.

Verification: At least ninety (90) days prior to the start of construction of the power plant, the project owner shall submit to the CPM a recorded copy of the Restrictive Covenant and Easement Agreement that establishes the Setback Area and Open Space Easement.

Within sixty (60) days of the Passantino property being sold or converting to Campus Industrial use the project owner shall submit a landscape plan to the CPM for review and approval and to the City of San Jose for review and comment.

Within seven (7) days of completion of the landscaping, the project owner shall notify the CPM that the landscaping has been completed and is ready for inspection.

LAND-6 The project owner shall ensure the protection of soil while using agricultural land as a construction laydown and parking area. When the agricultural land is no longer needed as a construction laydown and parking area, but no later than the start of commercial operation of the power plant, the project owner shall restore the soil to its natural state for agriculture.

In parking and heavy traffic areas and those areas used for temporary facilities, protective measures shall include but not necessarily be limited to: covering the existing soil with a woven geotextile separator layer to protect underlying top soil; adding an additional layer of structural geogrid over the separator fabric in heavy traffic areas; and covering the geotextile layer with 8 to 12 inches of granular fill.

After use, the granular fill and geotextile/geogrid shall be removed and the soil shall be tilled to thoroughly aerate and remove all soil compaction.

In those areas where heavy traffic protection is not required and soil conditions permit, laydown materials shall be placed on appropriate wood dunnage.

After use, the wood dunnage and materials shall be removed and the soil shall be tilled to thoroughly aerate and remove all soil compaction.

Verification: At least thirty (30) days prior to the delivery of construction materials to the power plant laydown area, the project owner shall notify the CPM that the protective measures stated above will be applied prior to the delivery of

any construction materials. Within seven (7) days after the protective measures have been applied, the project owner shall submit photographic evidence of the application. At least thirty (30) days prior to start of commercial operation, the project owner shall notify the CPM that the agricultural field used as the laydown area has been tilled and shall submit photographs of the tilled field.

LAND-7 The project owner shall ensure that any additional construction laydown areas needed along all pipeline routes are located within existing paved or gravel areas.

Verification: At least sixty (60) days prior to construction of the pipelines, the project owner shall submit to the CPM a detailed map showing the location of any planned laydown areas along the pipeline routes and photographs of the areas.

LAND-8 The project owner shall obtain all necessary licenses and easement rights from Santa Clara County to route the natural gas supply pipeline through the Coyote Creek Parkway. For that portion of the gas pipeline within the Coyote Creek Parkway, the project owner shall avoid performing noisy and dusty construction activities while permitted park events are occurring. The project owner shall coordinate with the Santa Clara County Parks and Recreation Department to identify specific dates of planned park events in order to minimize conflicts with these events.

Verification: At least thirty (30) days prior to the start of construction of the gas pipeline through the Coyote Creek Parkway, the project owner shall submit to the CPM a copy of all licenses and easements secured from Santa Clara County for construction of the pipeline through the Parkway. At least thirty (30) days prior to the start of construction of the pipeline through the Coyote Creek Parkway, the project owner shall submit to the CPM for review and approval a plan that describes how construction activities will be timed to avoid permitted park events. The submittal to the CPM shall include evidence that the Santa Clara County Parks and Recreation Department has reviewed the plan and shall attach and address any recommendations from the Parks and Recreation Department. The submittal shall also include a schedule of anticipated park events. Once a week during pipeline construction, the project owner shall submit to the CPM an update of planned construction dates for the following week and a schedule of planned park events to occur within the same timeframe.

LAND-9 The project owner shall route the water supply and wastewater discharge pipelines through open agricultural areas to avoid the direct loss of orchard trees.

Verification: At least sixty (60) days prior to construction of the water supply and wastewater discharge pipelines the project owner shall submit to the CPM for review and approval a site plan that shows the precise alignment of the pipelines in relation to existing orchard trees. The site plan shall clearly delineate the width of the pipeline construction corridor.

At least seven (7) days prior to ground disturbing activities related to pipeline construction, the project owner shall notify the CPM that stakes have been installed to delineate the boundaries of the pipeline corridor and the route is ready for inspection.

LAND-10 During pipeline construction, the project owner shall stockpile excavated topsoil separate from subsoil in agricultural areas. The project owner shall backfill the trenches in a manner that minimizes the alteration of the original soil order.

Verification: At least thirty (30) days prior to ground disturbance related to pipeline construction, the project owner shall submit a description of the procedure to minimize alteration of original soil stratigraphy. At least seven (7) days prior to trenching, the project owner shall notify the CPM of the schedule for trenching. Within seven (7) days after the start of trenching, the project owner shall submit photographs to the CPM that demonstrates that the topsoil has been kept separate from the subsoil. At least seven (7) days prior to the backfilling of trenches, the project owner shall notify the CPM of the schedule for backfilling.

LAND-11 The project owner shall design and construct the project to meet the following height requirements, unless otherwise mutually agreed to by the CBO and the CPM in consultation with the City of San Jose:

- The heat recovery steam generator stacks shall be limited to 145 feet above finished grade.

Protocol: The project owner shall submit to the CBO/CPM final design specifications demonstrating that the specified structures and facilities will be limited to the specified heights. The project owner shall not start construction of the project until the project owner receives written approval of the final design plans from the CBO/CPM.

Verification: At least sixty (60) days prior to the start of construction, the project owner shall submit the final design specifications to the CBO/CPM. The project owner shall send copies of the CBO approval (if appropriate) 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.

B. TRAFFIC AND TRANSPORTATION

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 transportation of large pieces of equipment could increase roadway congestion and affect traffic flow. Trenching and other activities associated with building the linear facilities will also be disruptive. During plant operation, there is reduced potential for impacts due to the limited number of vehicles involved. On-going (post-construction) operations and maintenance traffic will be minimal, but will include a slight increase in the transportation of hazardous materials to the project site. In all cases, the transportation of hazardous materials must comply with federal and state laws.

The evidentiary record contains a review of the roads and routings; the potential traffic problems associated with those routes; the anticipated number of deliveries of oversized/overweight equipment; anticipated encroachments upon public rights-of-way; the frequency of, and routes associated with, the delivery of hazardous materials; and the availability of alternative transportation methods.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The MEC site is located in the North Coyote Valley, which lies between the southernmost part of San Jose and Morgan Hills, located 8 miles to the south. The site is bounded by Fisher Creek on the northwest, west and southwest, Blanchard Road on the southeast, and Monterey Road/Union Pacific Railroad (UPRR) tracks on the northeast. The UPRR lies directly adjacent to the southeast side of the proposed site, separating the site from Monterey Road. The major north-south roads in the area of the project site are Monterey Road, Santa Teresa Boulevard, U.S. 101, and State Route (SR) 85. (Ex. 1, § 8.10.1.1; Ex. 7, p. 253; see Figure 1.)

Source: Exhibit 1 **TRAFFIC and TRANSPORTATION - Figure 1**

Monterey Road is the former route of U.S. 101. It passes through San Jose to the north of the MEC site and continues south through Gilroy. It runs parallel to, and between, the UPRR and U. S. 101. Monterey Road is classified as a four-lane divided arterial by the City of San Jose and as an Arterial Primary Urban (APU) by Santa Clara County for the portion that is in the County's jurisdiction. The road has 12 to 13-foot wide lanes, 6-foot paved shoulders, and left-turn lanes. The posted speed limit along Monterey Road is 50 miles per hour (mph). Santa Teresa Boulevard extends southeasterly from San Jose one-third of a mile to the west of the MEC site. Santa Teresa Boulevard is classified as a minor arterial with two to four lanes within San Jose, and as APU by Santa Clara County. Santa Teresa Boulevard has 12 to 14-foot wide lanes, left-turn pockets, a 48-foot median, 9-foot paved shoulders, and striped and signed Class II bike lanes. The posted speed limit ranges from 45 to 50 mph. (Ex. 1, § 8.10.1.1; Ex. 7, p. 253.)

Bernal Road runs in a generally east-west direction, approximately one and one half miles north of the MEC site, intersecting with all four of the major north-south roads mentioned above. Blanchard Road is a private road located immediately south of the site extending from Monterey Road westerly past its intersection with Santa Teresa Boulevard. There is a traffic light at the intersection of Blanchard Road and Santa Teresa Boulevard. The proposed access road to the MEC site would connect to Blanchard Road just west of the UPRR right-of-way. (Ex. 1, § 8.10.1.1; Ex. 7, p. 253; see Figure 2.)

U.S. 101, within Santa Clara County, crosses through eastern San Jose several hundred feet to the east of the site, and connects with Interstates 880, 680 North, and 280 West. U.S. 101 is generally a 5 to 8-lane limited access freeway that narrows to 4 lanes north of Bernal Road and continues about 6½ miles south before it widens to 6 lanes. The posted speed limit on U.S. 101 is 65 mph. SR 85 (West Valley Freeway) extends west and then north from its intersection with U.S. 101 in the vicinity of Bernal Road. SR 85 is classified as a 4-lane freeway and includes two high-occupancy vehicle lanes. The posted speed limit is 65 mph. (Ex. 1, § 8.10.1.1; Ex. 7, p. 253.)

Source: Exhibit 1 **TRAFFIC and TRANSPORTATION - Figure 2**

The operating conditions of a roadway system are described using the term "level of service" (LOS). LOS is a description of a driver's experience at an intersection or roadway based on the level of congestion (delay). It is not a measure of safety or accident potential. Intersection and roadway conditions can range from LOS A, representing free-flow conditions with little or no delay, to LOS F, representing saturated conditions with substantial delay. (1/19/01 RT 13; Ex. 7, pp. 253-254.) The roadways analyzed fall under multiple jurisdictions, including the City of San Jose, Santa Clara County, and Caltrans. Monterey Highway and portions of Bernal Road and Santa Teresa Boulevard are identified to be in the County's Congestion Management Plan (CMP). The CMP standards take precedence for these roadway segments. A LOS D threshold is the preferred condition established in the CMP, but in no case should any roadway exceed LOS E. (Ex. 7, p. 254.)

Table **TRAFFIC and TRANSPORTATION 1** below, summarizes the 1998 roadway traffic conditions in the project vicinity. The table includes existing classification, LOS threshold, design capacity, daily volume, peak hour volume, and LOS. (Ex. 1, § 8.10.1.3.) All local roadways are operating at LOS D or better. The intersection of Santa Teresa Boulevard with Bernal Road/Avenida Espana is projected to operate at a LOS E, an acceptable level within the CMP. (1/19/01 RT 207; Ex. 7, p. 254.)

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TRAFFIC and TRANSPORTATION

TABLE 1

TABLE 8.10-1
1998 Conditions of Affected Roadways

Street Segment	Classification	No. of Lanes	Average Daily Volume[1]	Hourly LOS D Threshold[2]	Hourly Design Capacity[3]	PM Peak Hour Volume[4]	LOS
Santa Teresa Boulevard	**Minor Arterial**						
Bernal Road/Avenida Espana		2	12,530	1,240	2,390	1,255	D
		4		2,800	4,000		A
Avenida Espana/South of Bailey Avenue		2	7,500	1,240	2,390	750	C
Monterey Road	**Arterial**						
Bernal Road/South of Bailey Avenue		4	22,575	3,300	4,400	3,090	C
Bailey Avenue	**Minor Arterial**						
Santa Teresa Blvd./Monterey Road		2	5,910	1,240	2,010	590	C
Bernal Road	**Arterial**						
Monterey Road/Via del Oro		4	20,575	2,540	3,680	2,060	B
Via del Oro/Realm Drive		4	24,425	2,540	3,680	2,440	C
Realm Drive/Santa Teresa Blvd.		4	22,720	2,540	3,680	2,270	C
U.S. 101							
North of Bernal Road	Freeway	5	77,770	7,800	11,300	6,360	C
		8		12,480	18,400		B
Bernal Road/Cochrane Road		4	86,860	6,240	8,800	7,170	D
SR 85							
U.S. 101/Bernal Road	Freeway	4	28,280	6,240	8,800	2,980	B
West of Bernal Road		4	43,935	6,240	8,800	4,495	C

Source:
1 Estimated number of vehicles per day both directions. Based on Caltrans 1997 Traffic Volumes and County of Santa Clara 1994 to 1998 traffic counts.
2 Maximum number of vehicles per hour both directions for LOS D.
3 Maximum number of vehicles per hour both directions for LOS F.
4 Vehicles per hour in both directions.

Source: Ex. 1, § 8.10.1.3.

Table 2, below, provides the most recently available three-year (August 1995 through July 1998) accident history for State Highways. For roadway segments, accident rates are computed as the number of accidents per million vehicle-miles of travel (MVM). The MVM for selected roadways in the vicinity of the MEC range from a low of 0.4 on Santa Teresa Boulevard at the Bernal Road/Avenida Espana to a high of 1.8 on Santa Teresa Boulevard at Bernal Road/South of Baliey Avenue. When compared to statewide averages for comparable facilities, Santa Teresa Boulevard experiences a higher than average accident rate in the project vicinity while all other roadways are below the statewide average for similar facilities. (Ex. 7, p. 254.)

TRAFFIC and TRANSPORTATION

TABLE 2

TABLE 8.10-2
Accident History

Roadway	Section	Number of Accidents		Accident Rate
		3-Year Total	Average Per Year	MVM
Santa Teresa Boulevard[a]	Bernal Road/Avenida Espana	5	2	0.4
	Avenida Espana/South of Bailey Avenue	29	10	1.8
Monterey Road[a]	Bernal Road/South of Bailey Avenue	23	8	0.3
Bernal Road[a]	Monterey/Via del Oro	28	10	1.3
	Via del Oro/Santa Teresa Blvd.	10	4	0.5
Bailey Avenue[a]	Santa Teresa Blvd./Monterey Road	6	2	0.6
U.S. 101[b]	Within San Jose City limits	3,528	1,176	0.97
SR 85[a]	U.S. 101/Bascom Avenue	761	254	0.79

[a]San Jose 1/96 to 11/98 (Street and Traffic Department. 1999)]
[b]Caltrans 8/95 to 7/98 (Caltrans, 1998)

Source: Ex. 1, § 8.10.1.3.

1. Construction Impacts

Commuter Traffic. Construction of MEC will take approximately 18 to 24 months. The evidence reflects the anticipation that construction workers required to build the MEC will be drawn from the local labor pool. At its peak, the workforce will include approximately 328 workers for the power plant and the electric transmission line, and approximately 71 workers for the water and gas pipelines. The MEC will use local firms for major maintenance and overhauls, plant supplies, and other support services. (Ex. 1, §§ 8.10.2.2, 8.10.2.2.1; Ex. 7, p. 257.)

Exhibit 1, § 8.10.2.2.4, Table 8.10-4 identifies the "worst case" number[115] of trips generated by the MEC's construction. With a peak workforce of approximately 400, total daily vehicle trips will be 710 (including truck deliveries). Approximately 318 (including truck deliveries) of these trips will occur during the afternoon peak hour.[116] (1/19/01 RT 207.) U.S. 101, SR 85, Bernal Road, Santa Teresa Boulevard, Monterey Road, and Bailey Avenue are likely to

[115] This number assumes no temporary rail spur.

[116] Construction commute traffic during the morning was not addressed by Applicant and Staff because construction workers will arrive prior to 7:00 a.m.

be the primary roadways to and from the MEC. Monterey Road and the proposed access road, or Santa Teresa Boulevard and the alternate access road, will experience the greatest volume of construction traffic. No significant effects on the local transportation system are expected from the construction activities because:

- Noticeable impacts will be localized near the construction site. The project will generate a relatively small number of trips compared to the existing traffic levels. The record adequately projects traffic volume in 2002 and LOS on the nearby roadways, including daily volumes and LOS under the worst case. The only segment that will experience a reduction in the LOS (with the proposed access road in place) is Monterey Road between Bernal Road and Bailey Avenue. This change, from LOS C to LOS D, still meets the CMP standard. (1/19/01 RT 207; Ex. 1, § 8.10.2.2.4, and Table 8.10-5 therein.)

- Staff reviewed the Draft EIR for Coyote Valley Research Park (CVRP) to determine the projected operation of intersections during peak hours. Specifically, the "Background" condition was reviewed to determine the intersection's projected operating conditions during the peak construction period for the MEC.[117] Under this condition, all nearby intersections are projected to operate at LOS D or better. Project traffic is not expected to significantly impact morning peak hour intersection operations since construction workers will arrive prior to 7:00 a.m. It is expected that U.S. 101, SR 85, Bernal Road, Santa Teresa Boulevard, Monterey Road, and Bailey Avenue are likely to be the primary roadways to and from the MEC site. None of the intersections along these routes are projected to operate below the LOS E standard. Therefore, MEC construction traffic at these intersections is not expected to cause a significant impact. (1/19/01 RT 13, 207; Ex. 7, pp. 257-258.)

- The typical workday for construction workers begins at 7:00 a.m. and ends around 4:00 p.m. This limits the number of vehicles during peak hour traffic periods and thus helps reduce the potential traffic impacts. (Ex. 1, § 8.10.2.2.4; Ex. 7, p. 258.)

[117] The "Background" condition includes approved, but not yet built or occupied, development projects in the vicinity of the MEC site.

- All vehicles will park off public roadways in the staging and parking areas immediately south of the MEC site. A parking and staging plan is required to ensure the on-site construction-period parking. (1/19/01 RT 115, Ex. 7, p. 258; see, Condition **TRANS-7**.)

Truck Traffic. Truck traffic to the site will consist mainly of plant equipment deliveries, construction material deliveries, and delivery of fill material. Approximately 100,000 cubic yards of fill will be imported during a two-month period, generating approximately 280 trips per day (140 loads to the site). (Ex. 8, p. 12.) This will occur prior to peak construction activities at the site. Approximately 4,100 deliveries of equipment and construction materials are expected over the extended construction phase. These deliveries will average 10 per typical weekday and 25 per weekday during the peak month.[118] The additional truck traffic during construction will create additional wear on the local roads. The evidence shows that the construction traffic control plan (**TRANS-5**) and requiring repairs to all roadways (**TRANS-6**) adequately mitigate these potential roadway impacts. (Ex. 7, pp. 257, 258.)

Railway Traffic and Crossings. Applicant is considering construction of a temporary rail spur from the existing UPRR tracks on the northeast side of the site for the shipment of heavy equipment. (See, 1/19/01 RT 39-40; Ex. 1, § 8.10.2.2.1; Ex. 8., p. 12.) This would eliminate the need to transport heavy loads over city streets. Applicant has also identified an existing workable alternative approximately 10 miles from the MEC site. Transport route arrangements will be required with Caltrans, the City of San Jose, and Santa Clara County for permitting and escort, as applicable. (Ex. 1, § 8.10.2.2.1; Ex. 7, pp. 258-259.)

Hazardous Materials Transport. Generally, only small quantities of hazardous materials will be used during the construction period. Section 8.12 of Exhibit 1 provides a description of these materials.[119] Potential impacts due to the transportation of hazardous materials are mitigated to a level of insignificance by compliance with federal and state standards established to regulate their transportation. Condition of Certification **TRANS-3** requires

[118] The impacts associated with these delivery trucks (combined with construction worker trips) are included in the discussion of commute traffic, above.

[119] The amount and type of hazardous materials associated with this project are also discussed in the **Waste Management** and **Hazardous Materials Management** portions of this Decision.

compliance with state and federal transport and safety requirements. (1/19/01 RT 209-210.) Monterey Highway is compatible with the transport of hazardous materials because it has a median barrier (to limit possibility of head-on collisions), standard lane widths, minimal cross-streets, and paved shoulders. The three-year (1995-1998) accident rate for Monterey Highway is lower than the statewide average for comparable facilities. (Ex. 7, pp. 259-260.)

The current alignment for the access road provides the maximum buffer space to an existing home on the Passantino property fronting Blanchard Road. A potential problem occurs due to the elevation difference (approximately 4 feet) between the railroad tracks, the adjacent property, and Monterey Road. In order to mitigate this, Applicant proposed a longer vertical transition along Blanchard Road approaching the railroad tracks to increase visibility, plus the installation of railroad crossing gates at the track crossing.[120] (Ex. 7, p. 260; Ex. 8, p. 13.) During the peak construction period, the MEC will generate approximately 25 truck deliveries per day, including some hazardous materials. The transportation and handling of hazardous substances could increase roadway hazard potential at the railroad crossing. To ensure the safe transport of hazardous materials, Condition **TRANS-4** requires that railroad grade crossing warning equipment (gates and signals) will be installed.

Linear Facilities. Construction of the transmission lines is not expected to occur within the public right-of-way and is not expected to cause any traffic impacts. Construction of the domestic water pipeline would cross only Emado Avenue, a gravel road. The natural gas pipeline would cross U.S. 101, Monterey Road, UPRR, and Blanchard Road. The evidence does not suggest that these activities will create substantial impacts. (Ex. 7, pp. 261-262.)

Construction of the proposed recycled water and industrial wastewater pipelines as originally proposed by Applicant (the Snell Avenue/Santa Teresa Boulevard route) would cross 23 streets between the point-of-connection and the MEC site.[121] Applicant originally proposed to place both the recycled water pipeline and the industrial wastewater pipeline in

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[120] The railroad crossing for the access road to the MEC site is a private crossing of a roadway not maintained by a public authority. Therefore, the railroad crossing is not required to have railroad grade crossing warning equipment (gates and signals).

[121] These streets are identified in Exhibit 1, § 8.10.2.2.2.

the same trench. The City of San Jose, however, requires a 10-foot separation between the recycled water pipeline and the industrial wastewater pipeline. (Ex. 3, § 3.1.) Applicant has, therefore, proposed a modification to conform to South Bay Water Recycling's (SBWR) latest design. This modification will not result in any adverse impacts along the proposed route. In comparison with the Snell Avenue/Santa Teresa Boulevard route, the SBWR route is the same length and reduces use of the major local streets (which have heavy traffic flow, thicker roadway pavement sections, and crowded utility crossings). (Ex. 3, § 3.10; Ex. 7, p. 262.)

The construction of the underground recycled water, domestic water, and industrial wastewater pipelines could increase congestion for all roadways in which trenching is required within the established right-of-way. However, such impacts will be short-term. Most of these crossings will be trenched and through access will be provided at all times. Traffic will be either directed along one-half of the roadway or routed across temporary trench bridging. Access for emergency vehicles will be maintained during construction. Plating of roadways will typically be used to ensure emergency vehicle access and maintain reasonable levels of traffic flow. Use of signals, signs, or warnings will notify motorists of construction activity. Any exceptional need for traffic control and signing for this area will be addressed in the construction traffic control plan as specified in Condition **TRANS-5**. In all cases, construction within the public right-of-way will need to comply with Caltrans' "Manual of Traffic Controls for Construction and Maintenance of Work Zones" (Caltrans Manual). (Ex. 7, p. 262.)

The construction of the natural gas pipeline could increase congestion for all roadways in which trenching is required within the established right-of-way. Any exceptional needs for traffic control and signing for this area is also addressed in the construction traffic control plan specified in Condition **TRANS-5**. In all cases, construction within the public right-of-way must comply with the Caltrans Manual. (Ex. 7, p. 262.)

All road crossing construction activities will be in accordance with local, state, and federal regulatory requirements and specifications. Adequate barricades and lights will be provided around excavations at crossings in accordance with the Caltrans Manual and California Vehicle Code Section 21400. The use of the UPRR grade crossing at Blanchard Road will

be in accordance with UPRR and California Public Utilities Commission (CPUC) requirements. (Ex. 7, p. 262; see Condition **TRANS-4**.)

If either natural gas or water supply facilities are being constructed within or adjacent to a public roadway, the traffic control plan must include provisions such that at least one lane of traffic flow is maintained in each direction or traffic flow is alternated by direction using flagmen. (Ex. 7, p. 262; see Condition **TRANS-5**.)

2. Operational Impacts

Commute Traffic. The operational phase of the MEC will generate approximately 38 trips per day to and from the facility. These include 14 trips by employees and 5 trips by management and vendors. (Ex. 8, p. 12.) There will be approximately 20 full-time employees working at the plant. Because of rotating shifts, only 10 personnel will commute during the afternoon peak on any workday. This will not create any significant traffic impacts. (Ex. 7, p. 260.)

Truck Traffic. During plant operations, trucks will periodically deliver and pickup replacement parts and various types of chemicals. Table 3 shows the estimated truck traffic at the facility during normal operation:

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TABLE 3

Delivery Type	Number & Occurrence of Trucks
Aqueous Ammonia	2 per week (8,000 gallon truck)
Sulfuric Acid	1 per month (8,000 gallon truck)
Cleaning Chemicals	1 per month
Trash Pickup	1 per week
Sanitary Waste	1 per month

Source: Ex. 1, § 8.10.2.3.1, Table 8.10-6.

On average, there will be less than one truck delivery to the project site per day. Potential impacts of the transportation of hazardous substances can be mitigated to insignificance by compliance with federal and state standards established to regulate the transportation of hazardous substances. (Ex. 7, p. 261.) Condition **TRANS-3** requires compliance with these standards.

3. Cumulative Impacts

Staff, in consultation with the City of San Jose, identified nine developments in various stages of approval or implementation throughout the south San Jose area in the vicinity of the MEC. They include: Coyote Valley Research Park (CVRP), the MEC power plant, a residential development located north of Metcalf Road and south of Basking Ridge Road, Hellyer Vista View I, Creekside Plaza, Lincoln Property Company Development, Stellex, Hellyer View, and Pepper Lane Development. These development projects are estimated to generate a total of 63,100 daily trips with 9,810 occurring during the morning peak hour and 8,980 occurring during the evening peak hour. In addition, there is expected to be a substantial amount of population growth in the City of San Jose and in Santa Clara County. This additional regional growth is expected to increase traffic two-percent per year on the regional roadway system for the next 20 years. Consequently, traffic volumes on the roadways in the vicinity of the MEC will likely significantly increase. (Ex. 7, p. 263.)

The peak construction period for the MEC is expected to occur during 2002. The level of traffic to and from MEC will diminish between the construction and operational phases, as discussed above. The additional operational and maintenance trips generated by the MEC are not considered significant because they would account for less than one-tenth of one percent of the total added cumulative traffic of 63,100 daily trips. (1/19/01 RT 15; Ex. 7, p. 263.)

The evidence also contains an evaluation of the MEC's impact on traffic conditions that would occur under a long-range build-out of these and other projects.[122] This evidence also includes assumed improvements to the transportation network including the widening of

[122] Normally called a "future growth condition" in Santa Clara County.

U.S. 101 to six lanes, widening of Santa Teresa Boulevard, and other major roadway improvements. (Ex. 8, pp. 13-14.) Staff reviewed the Draft EIR for Coyote Valley Research Park and other traffic studies to determine the projected operation of intersections during the morning and afternoon peak hours. Specifically, the “Future Growth Condition” was reviewed to determine the projected intersection operating conditions during the operation period for the MEC. Under this condition, all nearby intersections are projected to operate at LOS D or better, which meets the CMP LOS standard. As noted above, the MEC is expected to add a total of approximately 38 daily vehicle trips and a total of four morning and four afternoon peak hour trips during normal operations. This is an insignificant contribution to any cumulative impact. (Ex. 7, pp. 263-264.)

4. Alternate Access Road

For new developments, the policy of the City of San Jose is to provide two points of access for emergency vehicles. The City is particularly concerned with Blanchard Road being the only point of access to the site, as it could be temporarily blocked by a train. Therefore, the City requested that a second point of access be in place (that does not cross the railroad tracks) when the MEC becomes operational. (Ex. 7, p.261.)

Applicant currently proposes to construct a western access road "if and when dedicated City streets are developed for the Coyote Valley Research Park and MEC is granted the rights necessary for access to the CVRP road system.” (Ex. 8, p. 13.) This additional roadway would connect the site to Santa Teresa Boulevard through the planned Coyote Valley Street System. This western access road would become the primary access to the MEC, and the initial access road (through the UPRR crossing) would remain in place as a second access road. (1/19/01 RT 68.)

This additional roadway would improve access from U.S. 101 once the planned overcrossing is constructed. Use of this alternate would allow delivery of chemicals to the plant without crossing the UPRR tracks. It would also provide an additional point of entry for emergency vehicles that would not be dependent on rail traffic. Moreover, this western access road would have no unmitigated significant impacts to environmental resources.

(Ex. 8, p. 13.) Unfortunately, the time frame for constructing the Coyote Valley Street System is unknown and not controlled by Applicant.

Applicant contends that this second access road, though desirable, is not required to comply with local LORS. (1/19/01 RT 14, 70-72, 194-195; Ex. 8, p. 13.) It believes that "there will always be two means of access. . .until dedicated streets are built by CVRP or some other developer." (1/1901 RT 75: 9-12.) In Applicant's estimation, the first access will be over the UPRR tracks, and the second "over the farm roads, as is currently the case." (1/19/01 RT 75:14-15.)

The City challenged this conclusion, noting that its applicable policy, (based on the state Fire Code) requires more than one access road if so determined by the local Fire Chief. (See, City's Opening Brief on Group 1 & 2 Topics (March 23, 2001), pp. 16-18; see also, STCAG Opening Brief on Group 1 & 2 Topics (March 23, 2001).) In recognition of the City's "practice" of requiring a second access road, and since two points of access are preferable, Staff suggested a Condition to advance the construction of a second access road. (1/19/01 RT 246, 248, 290; Ex. 7, pp. 261, 268.)

In our opinion, a second access road provides an assurance that the local emergency responder, in this case the San Jose Fire Department, can adequately address any accidents or emergencies which may arise. Devising a solution acceptable to the Fire Department is therefore important. We note that in Condition **WORKER SAFETY-1**, we have required Applicant to provide a fire protection and prevention plan acceptable to the Fire Department. We see no reason to treat the access issue differently. Therefore, we have included Condition **TRANS-8** that requires Applicant to construct this alternate prior to operation if the Coyote Valley Street System is developed sufficiently to afford access to Santa Teresa Boulevard. If the Coyote Valley Street System is not so developed, we require Applicant to develop a means, subject to CPM approval in consultation with the Fire Department, that satisfies its access concerns.

5. Mitigation

Applicant must comply with all LORS relating to the transport of oversized loads and the transport of hazardous materials. The Applicant will: 1) prepare a construction traffic control plan and implementation program, and 2) install grade crossing warning equipment (gates and signals) at the railroad crossing for the access road. In addition, Condition **TRANS-6** requires repairing roadways to original condition after construction is completed. Applicant will also manage the on-site construction-period parking. These measures are incorporated into the Conditions of Certification. No additional mitigation for traffic and transportation impacts is required except with regard to the alternate access road discussed above.

FINDINGS AND CONCLUSIONS

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

1. Construction and operation of the MEC will cause increased traffic on roadways in the local and regional areas.

2. During the construction phase, increased roadway demand resulting from the daily movement of workers and materials will increase congestion, but will not cause service levels to fall below the standards established by local and regional authorities.

3. During the operational phase, increased roadway demand resulting from the daily movement of workers and materials will be minimal.

4. All impacts from the transportation of hazardous substances can be mitigated to insignificance by compliance with federal and state standards established to regulate the transportation of hazardous substances. We require this compliance in our Conditions of Certification.

5. Construction activities have the potential to damage local roadways. The Applicant is required to repair damaged roadways to their original condition.

6. Because construction requires trenching within public road rights-of-way, the underground natural gas and water supply lines will impact both roadway function and levels of service. However, these impacts will be short-term and not result in significant traffic and transportation impacts. The Applicant will prepare a traffic control plan, as required in the Conditions of Certification to address these matters. In addition, all development will take place in compliance with California Department of Transportation and local agency limitations for encroachment into public rights-of-way.

7. With the implementation of the Conditions of Certification below, the MEC's Traffic and Transportation impacts will be reduced to levels of insignificance, and will otherwise comply with the applicable laws, ordinances, regulations, and standards identified in the appropriate portion of Appendix A of this Decision.

We therefore conclude that construction and operation of the project will not result in any significant direct, indirect, or cumulative adverse impacts to the local or regional transportation systems.

CONDITIONS OF CERTIFICATION

TRANS-1 The project owner shall comply with California Department of Transportation (Caltrans) and Santa Clara County limitations on vehicle sizes and weights. In addition, the project owner or its contractor shall obtain necessary transportation permits from Caltrans and all relevant jurisdictions.

Verification: The project owner shall provide the number of any oversize and overweight transportation permits received during that reporting period in the Monthly Compliance Report. In addition, the project owner shall retain copies of these permits and supporting documentation in its compliance file until the start of commercial operation and for at least six (6) months from the date of issuance.

TRANS-2 The project owner or its contractor shall comply with California Department of Transportation (Caltrans) and Santa Clara County limitations for encroachment into public rights-of-way and shall obtain necessary encroachment permits from Caltrans and all relevant jurisdictions.

Verification: The project owner shall submit copies of any encroachment permits received during that reporting period in the Monthly Compliance Report. In addition, the project owner shall retain copies of these permits and supporting documentation in its compliance file for at least six (6) months from the date of issuance.

TRANS-3 The project owner shall ensure that all federal and state regulations for the transport of hazardous materials are observed during both construction and operation of the facility.

Verification: The project owner shall include, in its Monthly or Annual Compliance Reports, copies of all permits and licenses acquired by the project owner and/or subcontractors concerning the transport of hazardous substances.

TRANS-4 The project owner shall install railroad grade crossing warning equipment (gates and signals) at the railroad crossing for Blanchard Road in accordance with UPRR and local/federal agency design standards. If the warning equipment is not installed prior to the start of site preparation or earth moving activities, then the project owner shall install temporary measures, including the stationing of flag persons, to the satisfaction of the PUC

and UPRR. These temporary measures shall stay in place until the permanent equipment is installed.

Protocol: If the permanent crossing warning equipment is not expected to be in place prior to initiation of site preparation or earth moving activities, then the project owner shall submit a traffic plan for the railroad crossing to UPRR and the Public Utilities Commission (PUC) for review and approval at least sixty (60) days in advance of any site preparation or earth moving activities.

The project owner shall submit design plans for the grade crossing warning equipment (gates and signals) and plans for temporary measures to the UPRR and the Public Utilities Commission (PUC) for review and comment, and to the CPM and PUC for approval.

Verification: The project owner shall inform UPRR, appropriate agencies, and the CPM that the final grade crossing warning equipment (gates and signals) are ready for inspection.

TRANS-5 Prior to the start of site preparation or earth moving activities, the project owner shall consult with Santa Clara County, the City of San Jose, and Caltrans and prepare a construction traffic control plan and implementation program addressing the following issues for linear facilities:

- timing of pipeline construction (take place at night or on weekends to avoid traffic flow disruptions);
- signing, lighting, and traffic control device placement;
- temporary travel lane closures;
- maintaining access to adjacent residential and commercial properties; and
- emergency access;

Prepare a construction traffic control plan and implementation program addressing the following issues for power plant construction:

- establishing construction work hours outside the peak traffic periods;
- timing of heavy vehicle equipment and building materials deliveries; and
- off-street employee parking during construction.
- At least thirty (30) days prior to start of site preparation or earth moving activities, the project owner shall provide to Santa Clara County, the City of San Jose, and Caltrans for review and comment, and to the CPM for review and approval, a copy of its construction traffic control plan and implementation program.

TRANS-6 Following completion of construction of the power plant and all related facilities, the project owner shall repair roadways to original or as near original condition as possible.

Protocol: Prior to start of site preparation or earth moving activities, the project owner shall photograph, videotape, or digitally record images of Monterey Road between Metcalf Road and Blanchard Road and sections of public roadways that will be affected by water and wastewater pipeline construction. The project owner shall

provide the CPM, Santa Clara County, and Caltrans with a copy of these images. At least sixty (60) days prior to start of site preparation or earth moving activities, the project owner shall also notify Caltrans of the schedule for project construction. The purpose of this notification is to postpone any planned roadway resurfacing and/or improvement projects until after the MEC construction has taken place and to coordinate construction related activities associated with other projects.

Verification: Within thirty (30) days of the completion of project construction, the project owner will meet with the CPM, Santa Clara County, the City of San Jose and Caltrans to determine and receive approval for the actions necessary and to schedule the complete repair of roadways to original or as near original condition as possible.

TRANS-7 Prior to start of site preparation or earth moving, the project owner shall prepare and submit a parking and staging plan for all phases of project construction to the City of San Jose and Santa Clara County for review and comment and to the CPM for approval. During construction of the power plant and all related facilities, the project owner shall manage the on-site construction-period parking.

Verification: At least sixty (60) days prior to start of site preparation or earth moving, the project owner shall submit the parking and staging plan to the City of San Jose and Santa Clara County for review and comment, and to the CPM for approval.

TRANS-8 Prior to the start of commercial operation of the MEC, the project owner shall complete a two-lane secondary access connection, unless the CPM, agrees otherwise. At that time, the Blanchard Road access will change to emergency use only.

Protocol: If the planned connection to Santa Teresa Boulevard has been completed as part of the Coyote Valley Street System, then the MEC project owner shall construct a connection to this system. If the off-site portion of the Santa Teresa Boulevard connection is not completed by others, then the City of San Jose can choose to obtain the right-of-way such that the project owner can design and construct the off-site portion with a credit against fees or future reimbursement as may be agreed upon by those parties. If this right-of-way is not provided, then the CPM, in Consultation with the San Jose Fire Department, shall develop an acceptable means of providing access, including but not limited to allowing the MEC to operate with a single point of access until such time as it is able to connect to the Coyote Valley Street System.

Approximately twelve (12) months prior to the planned start of commercial operation, the project owner shall contact the City regarding the status of the off-site portion of the Santa Teresa Boulevard connection and inform the CPM. The project owner shall either plan construction or initiate discussions aimed at reaching an acceptable means of providing access.

Verification: At least sixty (60) days prior to the start of commercial operation of the MEC, the project owner shall notify the City and CPM that the portion of the Santa Teresa Boulevard connection constructed by MEC is ready for inspection or request the CPM, in consultation with the San Jose Fire Department, to develop another acceptable means of providing access.

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 that projects be examined to evaluate their visual impacts on the environment. The evidence of record contains this evaluation. In this section of our Decision, we summarize relevant portions of that evaluation, and focus on the project's potential to cause substantial degradation to the existing visual character of the project area.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Project Site

Applicant proposes to develop the various components of the MEC in the southern portion of San Jose and in nearby areas of unincorporated Santa Clara County. The power plant, transmission line connector, and gas line will be sited at the north end of Coyote Valley, while the wastewater line will be located primarily in the Edenvale portion of the adjacent Santa Clara Valley.

The Coyote Valley is a two-mile wide and seven-mile long valley that extends southward from the Santa Clara Valley. Tulare Hill, the 565-foot-high ridge located north of the plant site, largely separates the two valleys. The hills that frame the valley along its eastern edge rise to an elevation of over 1,300 feet and are covered with expanses of grassland that are broken up by corridors of woodland extending down the hillsides along the natural drainage courses. The hills along the valley's western flanks are somewhat more rugged and more heavily wooded than those on the eastern side. Tulare Hill, which defines the valley's northern end, is used for grazing and is covered with closely cropped grasslands. At present much of Coyote Valley has a generally rural appearance.

The site that will be used for the MEC is a parcel of flat valley floor land located adjacent to the southern base of Tulare Hill and immediately west of Monterey Road. Fisher Creek bounds the plant site on the on its western and northern edges. Tulare Hill screens views toward the project site from the north, northwest, and west.

The overall visual character of the valley is of a moderately to highly intact rural agricultural area framed by natural-appearing hills. The City of San Jose has given the North Coyote Valley area a land use designation of Campus Industrial with the intent of preserving its "present rural aspect". However, the City has also recently approved development projects which will transform the present visual character to one much more urban. (Ex. 7, pp. 348-349.) The valley area is considered an important gateway into the San Jose area from the south. (Ex. 7, 306-307.)

2. Project Features

The power plant facility will occupy approximately 10 acres. The proposed project consists of a variety of structures and forms that, in combination or separately, may cause it to be noticeable or visually prominent relative to its surroundings. These include two 145-foot-high heat recovery steam generator (HRSG) stacks; two 95-foot-high HRSG screening structures; an array of steel topworks above the screening structures extending up to 122 feet in height and consisting of horizontal boiler drums, crossover pipes, steel support framework, cylinder-shaped silencers, and boiler steam vents; a 10-cell cooling tower array with screening measuring 64 feet high, 56 feet wide, and 473 feet long; and two 72-foot-high H-frame pole structures with transmission lines extending about 240 feet to connect to an existing off-site transmission tower. The project includes other structures and buildings with heights up to 42 feet, entry and access roads, a parking area, a drainage retention area, fencing, landscaping, and a temporary 12-acre construction laydown and staging area. Related facilities include

underground pipelines for natural gas, recycled water, domestic water, and industrial wastewater, as well as one aboveground gas-metering station located near Highway 101. (Ex. 7, pp. 313, 316.)

Other elements of the project that could create visual impacts include night lighting and water vapor plumes from exhaust stacks and cooling towers that could be visible under certain atmospheric conditions. Certain design features, such as the ability to screen the entire height of the HRSG exhaust stacks, are dictated by air modeling constraints.[123] (2/15/01 RT 339-340, 348-350, 467-469.)

The exterior design of the MEC facility includes screening to enclose the HRSG units with alternating bands of light gray-taupe, low-reflective metal spandrel panels of the type commonly used on office facades, and low reflective simulated window bands. The architectural design of the power plant is intended to give the appearance of two large office buildings. Testimony from Applicant's witnesses describes an architectural attempt to achieve a "showcase" project (2/15/01 RT 333:8-11), one which is "lavishly landscaped" (2/15/01 RT 304:11-12), and has undergone several design iterations in response to concerns expressed by other developers and the City of San Jose. (2/15/01 RT 344-348; Ex. 109.) However, other parties believe the industrial nature of the buildings remains evident from the topworks of each building, from the exhaust stacks which extend 50 feet above the apparent top of the "office buildings", and the potentially visible plumes. (See, e.g. 2/15/01 RT 489, 497-98.)

3. Methodology

Applicant and Staff conducted field studies to assess the visual impacts of the project components from potentially sensitive vantage points. Eleven Key Observation Points (KOPs) were chosen as representative viewpoints of the

[123] This is because of the effects structures have on air flow and dispension. Applicant's witnesses indicated that additional stack screening would require new air modeling, an exercise which Applicant is unwilling to undertake. (2/15/01 RT 348-350, 390-391.)

project site from various locations around the viewshed. (2/15/01 RT 257-260.) These KOPs were chosen to reflect the viewers at and around each location, the visual sensitivity of the viewers, and the visual quality of the views. No party presented evidence suggesting the KOPs were inappropriate or nonrepresentative.

The locations of the KOPs and these values are included in Table **VIS-1** below.

Table Vis-1. Summary of Existing Conditions for Viewers, Visual Sensitivity, and Visual Quality for Views of the Project Site

KOP No.	Location	Viewers	Visual Sensitivity	Visual Quality
1	Blanchard Road Area	Residents in and around homes	DISPUTED	DISPUTED
2	Northbound Monterey Road, Railroad, Coyote, and Residences	People traveling by road and train for work, recreation, and leisure; customers, employees, and users of business establishments; local area residents traveling around the area; residents in and around homes	Moderately low to high	Moderate to moderately high
3	Future Overcrossing for Campus Industrial Area	No existing viewers	Not applicable	Moderately high
4	Santa Teresa Boulevard	People traveling to and from work; local area residents traveling around the area; people traveling for recreation and leisure	Moderate	Moderately high
5	Highway 101	Travelers on a scenic highway, including people traveling for recreation and leisure and to and from work	Moderately high to high	Moderately low to moderately high
6	Parkway Lakes	People using the facility for recreation and leisure	Moderately high	Moderate
7	Coyote Ranch and Coyote Creek Trails	People using the facility and trails for recreation and leisure; residents in and around a home	High	Moderately high
8	Southbound Monterey Road and Railroad	People traveling by road and train for work, recreation, and leisure; local area residents traveling around the area	Moderate	Moderately low to moderately high
9	Basking Ridge Area	Residents in and around homes	Moderately high	Moderate
10	Fisher Creek Corridor	No existing viewers	Not applicable	Low to moderately high
11	Coyote Valley Urban Reserve	Residents in and around homes	Moderately high	Moderately high

Source: Ex. 7, 314

As depicted above, the sole dispute between Applicant and Staff in this regard concerns the characterization of the "visual sensitivity" and the "visual quality" from KOP 1 (Blanchard Road area). (2/1/5/01 RT 261-267.) Staff characterizes these elements as "high" and "moderately high," respectively; Applicant believes they are more properly "low to moderate" and "low", respectively. (2/1/5/01 RT 280:8-17, 479-480.) This disagreement apparently results not only from individual subjective perceptions (2/15/01 RT 284), but also from differing analytic approaches. (2/15/01 RT 525-526.)

Applicant conducted a KOP analysis, employing the KOPs identified by Staff.[124] Additionally, Applicant provided panoramic photographs of the KOP viewpoints to document their existing visual features and prepared photo simulations of the KOP viewpoints to show project features superimposed on the original photographs. (Ex. 5; Ex. 30; Ex. 95.) Applicant apparently focused its evaluation on viewshed impacts from the KOPs, and used these simulations to determine whether project impacts would be noticeable to sensitive public views from the KOPs and neighboring areas.

Staff believes visual impacts from KOPs should be interpreted broadly, and based its methodology for assessing visual impacts on the Federal Highway Administration's visual impact assessment system in combination with visual assessment systems developed and used by the U.S Forest Service and the Bureau of Land Management. (Ex. 107, p. 3; Staff Opening Brief on Group 3 Issues (April 12, 2001), pp. 6-8.) Staff also considered the City's recognition of the character and visual importance of the area and its creation of the North Coyote Valley Master Development Plan.

[124] Staff based its analysis on nine of the eleven identified KOPs; Applicant analyzed all eleven. (2/15/01 RT 259-260.)

Therefore, Staff's analysis considered:

- applicable laws, ordinances, regulations, and standards for protection of visual resources;
- visual resources and their visual character and quality in the region and around and at the project site, including linear facility routes;
- general visibility of the project area, site, and important viewing locations (e.g., roads, residential areas, and public use areas);
- visual sensitivity based on viewer groups' concerns for visual resources (i.e., viewer sensitivity), the proximity of viewers to the project site, and other factors such as duration and frequency of views;
- significance criteria for visual impacts;
- visual impacts of the proposed project and their levels of significance; and
- mitigation measures that would reduce impacts to less than significant levels.

Staff assessed the cumulative impacts of the proposed project in combination with other nearby proposed projects such as the planned Cisco business development and the urban reserve area. (2/15/01 RT 522-523.) Staff also assessed the combination of views throughout the area and evaluated not only the KOPs, but views from roads, residences, and recreational areas. (2/15/01 RT 470-480, 509-515, 525-526; Ex. 7, pp. 342-343; Ex. 107, pp. 2-3.) Finally, both Applicant and Staff conducted studies to assess the potential frequency and visibility of water vapor plumes from the project. (Ex. 96, Ex. 106.)

4. Potential Impacts

The evidence in this matter is highly detailed and conclusively establishes that all potential visual impacts of the project have been thoroughly analyzed. After reviewing this body of information, we now turn our attention to the significant matters which remain at issue. In our opinion, these are whether: the project causes a significant impact to views from KOP 1 (Blanchard Road); water vapor plumes from the project create a significant impact; the project contributes to a significant adverse cumulative visual impact; the project will comply with

applicable laws, ordinances, regulations, and standards; appropriate mitigation measures will be employed; and, the proposed Conditions of Certification are sufficient to reduce project impacts.

KOP 1 (Blanchard Road and local area). There are six residences on Blanchard Road, of which two have views of the project site. These views are not from within the houses or primary living areas, but rather from side yards. Furthermore, other uses such as vehicle storage, a stonework shop, and a truck dispatch operation currently exist on Blanchard Road. It is not a major thoroughfare, and the project site would not be in the primary cone of vision of those travelling along its east-west orientation. (2/15/01 RT 266-278; Ex. 23; Ex. 30.) Along this road, views of the project site are largely screened by Tulare Hill and existing structures, and the current viewshed encompasses the existing PG&E substation and towers. Based on these factors, Applicant argues that any potential visual impacts due to the MEC would be insignificant. (Applicant's Opening Brief on Group 3 Topics (April 12, 2001), pp. 3-46 to 3-48.)

Staff, however, characterizes views from Blanchard Road as having "moderately high visual quality and high visual sensitivity." (Ex. 7, p. 325.) In Staff's opinion the power plant "would introduce new forms, textures, lines, and colors that would substantially reduce the intactness, unity, vividness, and therefore, visual quality of existing views from the Blanchard Road area." (Ex. 7, p. 326; Staff Opening Brief on Group 3 Topics (April 12, 2001), p. 7.) In essence, Staff believes the proposed project would substantially reduce the visual character and quality of views of the site and its surroundings largely because of the power plant's mass, scale, height, and industrial character. Because these factors are intrinsic to the function of the proposed project and the design features and mitigation measures proposed by the Applicant cannot substantially reduce the visual impacts that would result from these factors, the residual impacts would be significant. No additional mitigation measures are feasible, so the residual visual

impacts for views from the Blanchard Road area would be significant and unmitigable. (Ex. 7, p. 327.) The City agrees with Staff's assessment.

While there is substantial credible expert opinion on both sides of this dispute, we are persuaded by Applicant's position. In our estimation, the existing viewsheds along Blanchard Road and the surrounding area, the fact that it is not a major thoroughfare, and the limited number of people who would possibly be affected simply do not lead to the conclusion that the MEC would create a significant visual intrusion. We recognize this matter is inherently subjective; we believe, however, Applicant has met its burden in establishing that any impairment of the existing views from Blanchard Road and the neighboring area would not rise to a level of significance.

Moreover, our opinion does not change even when we consider an indefinite number of viewpoints as suggested by Staff. In this instance, many of the views would be transitory in nature and at least partially screened by existing and/or future development and project landscaping. To consider the imposition of the MEC as a significant intrusion, especially when the evidence uniformly indicates that there are no significant impacts from ten (10) of the eleven (11) KOP's analyzed, would, in our minds, at least partially necessitate considering the project site and its surrounding environs as a reasonably recognized aesthetic focal point. While the MEC will likely be detectable from a variety of views, the weight of the evidence of record persuades us that it will not intrude to a degree which we can reasonably consider as significant.

Finally, we note that Applicant has offered to work with the owners of property along Blanchard Road to develop and implement a landscape plan for the area that will screen views toward the project site and generally improve the appearance of the road. (Applicant's Opening Brief on Group 3 Topics (April 12, 2001), p. 3-50; Reply Brief on Group 3 Topics (April 24, 2001), p. 3-16.) While Staff does not endorse this offer (Staff Reply Brief on Group 3 Topics (April 24,

2000), pp. 12-13), we nevertheless find it responsive to any reasonable concerns and have included it in Condition of Certification **VIS-12**.

Visible Plumes. Visible plumes may form from water vapor exhausted from the cooling tower and HRSGs. The visibility of this normally translucent vapor is dependent upon ambient temperature and relative humidity. Applicant proposes to use wet/dry (hybrid) cooling towers and an economizer bypass system on the HRSGs to abate plume formation. (2/15/01 RT 311-319; Ex. 106, pp. 1-4.)

With these abatement measures, no visible plumes will be formed when meteorological conditions are above 30 degrees Farenheit and the relative humidity is below 90 percent. (2/15/01 RT 315:9-13, 317-319, 322.) Applicant's expert witness characterized the design of the proposed technology for the cooling tower as "pushing the envelope" in terms of plume abatement insofar as size, thermal duty, and expected weather conditions are concerned. (2/15/01 RT 314:18; 313-314.)

Applicant's testimony further establishes that meteorological conditions conducive to plume formation in the area generally occur at night, or during periods of low fog or rain. (2/15/01 RT 321, 394:21-25.) Based on a variety of modeling information, Applicant's testimony indicates that the project would potentially produce visible plumes for up to 240 hours per year. (Ex. 97.) After factoring in weather data and considering daylight hours, however, Applicant indicates that the project would potentially produce a visible plume five hours per year "during daylight hours when there is not fog or rain having a potential to obscure the plume." (2/15/01 RT 327:6-9; see also, 2/15/01 RT 323-326, 395-396; Ex. 106, pp. 2-3.)

Staff performed an independent analysis and agrees: that the proposed abatement systems will substantially reduce the potential for plume formation; the total number of hours per year with the potential for plume formation will vary

with weather conditions; the vast majority of hours during which plumes may form would be at night; and, either low fog or rain would likely occur during many of the daytime hours with the potential for visible plume formation. (2/15/01 RT 320-322; Ex. 96.)

Staff proposed Condition of Certification **VIS-10** to control plume visibility. (2/15/01 RT 489; Ex. 107, p. 3.) At the evidentiary hearing, however, a Staff witness testified that the plume abatement measures proposed by Applicant for the cooling tower and the HRSG exhaust would not meet the technical requirements contained in **VIS-10**.[125] (2/15/01 RT 485-486; Ex. 96.) Staff further indicated that these requirements can be met with further abatement, such as increasing the heat exchange duty of the of the dry section of the wet/dry cooling tower. (Ex. 96, pp. 7-8; see also, Staff Opening Brief on Group 3 Topics (April 12, 2001), pp. 9-10.)

Both Staff and Applicant submitted revised versions of Condition **VIS-10**. (Ex. 95, Appendix B, pp. B8-B9; Ex. 106, "Exhibit 1"; Ex. 107, pp. 8-9.) Essentially, Staff proposed that design parameters be specified at 20 degrees Farenheit and 100 percent relative humidity (rather than 30 degrees and 90 percent), and that maximum plume heights be specified.[126] (2/15/01 RT 490, 554-555.) Staff's witness did not know whether the Staff's proposed design parameters were technically achievable or analyze whether the required equipment would in fact fit the proposed site. (2/15/01 RT 519-520.) Applicant opposed imposition of these parameters.

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[125] Intervenor STCAG argues that any visual plume is incompatible with the existing visual setting and that proposed Condition VIS-10 should be modified to require that no plume be visible at any time. (STCAG Opening Brief on Group 3 Topics (April 12, 2001), p. 6.)

[126] Staff abandoned its previous position that the facility be shutdown in the event plumes were visible for more than 1 hour per 24 hour period or more than 14 hours per calendar year. (2/15/01 RT 488:23-25; Ex. 7, p. 386; Ex. 107, p. 9; Staff Opening Brief on Group 3 issues (April 12, 2001), p. 9.)

This dispute basically centers on determining whether the creation of *any* water vapor plume by the project is acceptable. Applicant has credibly established that its proposed design parameters are feasible and will reduce the *potential* for visible plume formation to a minimal number (5) of daylight hours per year. We simply cannot accept a characterization that plume formation for such an extremely small number of the 8760 hours in a year would be intolerable.[127] Even if this results in a detectable impact, in our judgment such impact would not reasonably approach any level of significance.

Next, Staff's suggested design parameters are apparently based on an "assumption" that they would be feasible (2/15/01 RT 519:19-20), but unaccompanied by any persuasive showing that they could actually be employed at the proposed site. In contrast, Applicant has persuasively shown that its proposals are suited to the project site and that the HRSG and cooling tower plume abatement designs and parameters proposed will accommodate site characteristics and constraints. (See, e.g., Ex. 106, pp. 2-3.)

In sum, much of the discussion of record seems to be concerned with preventing the potential occurrence of visible plumes when the evidence establishes that this potential is extremely slight to begin with and, if it occurs, will occur only in very limited meteorological circumstances for a minimal number of annual hours. We therefore conclude that no significant impact will result from the project's visible plumes, to the extent such plumes occur at all.

Nevertheless, we recognize the need to ensure that visible plumes are in fact minimized, and that any plume formation is objectively verified. We have therefore modified Condition **VIS-10** based on Applicant's suggestions (Ex. 95, Appendix B, pp. B-8 to B-9) and have also incorporated monitoring cameras, as

[127] The City's position is that no visible plumes are tolerable. We disagree with this position since it is apparently founded merely on an aesthetic preference, and an unsupported belief that even minimal plume formation necessarily brings a heavily industrial character to the area.

suggested by various Intervenors, as a means of verifying compliance. (2/15/01 RT 558-560.)

Cumulative Impacts. Applicant's position is essentially that, if the project creates no individually significant impact, then it necessarily creates no cumulatively significant visual impact. (Applicant's Opening Brief on Group 3 Topics (April 12, 2001), pp. 3-59 to 3-61.) Applicant has also provided independent evidence that the project will be designed, in consultation with the City, to minimize its individual impacts and to blend with the character of the area when it's transformed to campus industrial uses. (Ex. 1, section 8.11, Ex. 3; Ex. 5; Ex. 13; Ex. 14; Ex. 20; Ex. 26; Ex. 27; Ex. 46; Ex. 47; Ex. 95.) Staff contends that, based on a combination of views throughout the area and the impact of the MEC when considered with other development recently approved by the City, a significant cumulative visual impact would be created. (Ex. 107, pp. 2-3.)

According to Staff's analysis, the proposed Coyote Valley Research Park, recently approved by the City, "would substantially change the visual character of the North Coyote Valley from rural agricultural to urban." In addition, development of the City's designated Coyote Valley Urban Reserve "for high density residential, commercial, and other urban development uses would contribute to substantially changing the visual character of the North Coyote Valley from rural to more urban." (Ex. 7, p. 349.) Staff believes that, even if the MEC creates no significant visual impacts of its own, it will nevertheless contribute substantially to these "significant cumulative visual impacts." (2/15/01 RT 521-524; Ex. 7, p. 349.)

We disagree. Even considering the views of the project from area highways and other vantage points, the fact is that the City has already taken actions to allow transformation of the project area from a rural to a considerably more urban

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Moreover, the City's preference falls short of being a "standard" as defined under CEQA. [14 Cal. Code Regs., §15063 (h) (I) (C).]

setting. We understand that, when compared with the present setting, the development approved by the City may reasonably be considered to result in a significant cumulative impact. The relative magnitude of a project's contribution to this transformation is inherently a logical factor to be considered. In this regard, the MEC will constitute only a very small portion of this overall transformation,[128] and will be designed to be consistent with and complement it. Condition **VIS-9** ensures that the project will integrate with its surroundings, and that the City will play a major role in project design. Furthermore, the MEC's impacts will be mitigated to less than a level of significance through the measures contained in our Conditions of Certification. It will thus employ measures designed to alleviate its visual impact and, in our judgment, make a less than cumulatively considerable contribution to the overall impact.[129] Finally, we conclude that any contribution by the MEC to the overall impact would be minimal in any event, since the evidence shows that the transformation of the area's present character (and any associated cumulative visual impact) will occur with or without the MEC.

5. LORS Compliance

Staff reviewed all applicable laws, ordinances, regulations, and standards (LORS) that apply to visual resources. All portions of the project would be located in the City of San Jose and/or Santa Clara County. Staff testified that following the adoption of the Coyote Master Development Plan on October 24, 2000, thirty-five local LORS were applicable. Ultimately, Staff concluded that, with the adoption of Staff's proposed Conditions of Certification, the project would

[128] For example, the MEC site is about 14 acres; the adjoining approved campus industrial development will occupy about 688 acres.

[129] (See, 14 Cal. Code of Regs., §§ 12064 (j) (5), 15065 (c), 151309 (a).) We recognize that the Sacramento County Superior Court has recently held that certain CEQA guidelines addressing cumulative impacts are invalid. (*Communities for a Better Environment, et al* v. *California Resources Agency, (April 25, 2001), Sacramento Superior Court No. 00CS0030.)* We note these Guidelines address the contents of an environmental analysis, not the persuasive weight which the decision-maker must accord the conclusions reached in the environmental analysis. Our record is clear that cumulative impacts have been thoroughly addressed.

remain out of compliance with a total of eleven local guidelines, policies, and standards. (2/15/01 RT 482-483; see also, Ex. 7, pp. 351-358.) Staff characterizes the general nature of the LORS noncompliance as follows:

> These include City of San Jose policies and guidelines pertaining to building height, development along designated trail corridors, permitted land uses in rural scenic corridors, riparian/parkway character, rural building massing, building silhouette, building landscape, rooftop equipment screening and integration, adjacent property setbacks and screening, building facades blending with their surroundings, and visual screening of incompatible elements. In addition, the proposed project would not comply with a County of Santa Clara general plan policy for avoiding placement of gas metering stations along scenic roads and heavily traveled highways. (Ex. 7, p. 376.)

The City of San Jose essentially agrees with Staff's conclusions in this matter. The City also points out that "[m]any of the areas of local LORS noncompliance (e.g. provision of trail right-of-way, setbacks and landscaping within setbacks) could be provided in the proposed location, if Applicant had a larger site." (City Opening Brief on Group 3 Topics (April 12, 2001), p. 5.)

The eleven LORS with which Staff and the City believe the MEC would not comply are (Ex. 107, pp. 4-7):

SAN JOSE 2020 GENERAL PLAN

- ***POLICY 11 – HEIGHTS OF NON-RESIDENTIAL BUILDINGS***

In its staff report to the Planning Commission recommending that the General Plan amendment and prezoning/rezoning be denied (filed January 12, 2001 with the Energy Commission), the City staff stated that the height of the HRSG stacks is intrinsic to the function of the power plant and therefore the MEC is consistent with the general plan height policies. They also note that while the project is not inconsistent with the general plan in this regard, the height of the power plant would stand out even after eventual build-out of the valley. However, because the project would have a significant adverse effect on adjacent properties, the project does not comply with the City's policies for established height limits.

TRAILS AND PATHWAYS GOALS AND POLICIES

- ***POLICY – DEVELOPMENT ALONG TRAILS AND PATHWAY CORRIDORS.***

The project would produce substantial visual impacts for views from the designated trail corridor along Fisher Creek and would therefore not comply with this policy.

- ***LAND USE/TRANSPORTATION DIAGRAM, SCENIC ROUTES AND TRAILS DIAGRAM, SCENIC ROUTES.***

The diagram referred to graphically represents the City's general plan development policies and is included within the City's adopted general plan. Because the proposed project does not fit the description of a campus industrial use or the other permitted land uses, it would not comply with this policy.

MASTER DEVELOPMENT PLAN AND GUIDELINES FOR THE NORTH COYOTE VALLEY CAMPUS INDUSTRIAL AREA

- ***BUILDING HEIGHT***

The project would not comply with this policy; Applicant does not dispute this noncompliance.

- ***ROOFTOP EQUIPMENT***

The project would not comply with this policy and additional screening around the HRSG topworks would improve the project's consistency with this policy.

- ***MONTEREY ROAD***

The project would not comply with this policy; Applicant does not dispute this noncompliance.

- ***MAJOR LANDSCAPE ENTRY***

The project would not comply with this policy; Applicant does not dispute this noncompliance.

- ***BUILDING LANDSCAPING***

The concept of building massing will be reinforced with tall and columnar trees to create a skyline landscape which will visually contrast with the surrounding orchard parking landscape. The central building grouping should be the most lush and ornamental planting area of each campus. The project would not comply with policy.

RIPARIAN CORRIDOR POLICIES AND RELATED PROGRAMS

- ***POLICY 1 – DEVELOPMENT ALONG TRAILS AND PATHWAY CORRIDORS***

The project would produce substantial visual impacts for views from the designated trail corridor along Fisher Creek and would therefore not comply with this policy.

- ***GUIDELINE 2A: BUILDING APPEARANCE***

The Riparian Corridor Policy Study states that it is the City's intent that the Study's policies apply to riparian corridors throughout the City's Urban Service Area and "that any development, recreation facilities, or agricultural activities, outside the Urban Service area and not subject to specific General Plan direction regarding riparian protection, should be subject, at a minimum, to the development guidelines in this document." (p. 1, City of San Jose, Riparian Corridor Policy Study 1999). The project would not comply with this policy.

SANTA CLARA COUNTYGENERAL PLAN

- ***R-LU 75***

The gas metering station would be located along a heavily traveled, designated scenic highway. Because this location has not been avoided, the project would not comply with this policy.

Applicant contends that it is in "substantial compliance" with applicable LORS (2/15/01 RT 307:20-24), that it could comply with certain guidelines if so desired

by the City, and that other areas of non-compliance are with elements intended to provide design guidance, rather than impose strict requirements. (2/15/01 RT 307-308.) More specifically, Applicant argues that the project would not have an adverse impact on views, and states that the City has made a determination that the project would qualify for an exemption to the usual height limit. (Ex. 95, p. 14.) Similarly, Applicant argues that other provisions for development along trails and pathway corridors would be satisfied because the project does not significantly impact the aesthetic views. (Ex. 95, p. 14.)

Applicant challenges the Staff conclusion that the MEC would not comply with the General Plan's provisions concerning development of the MEC along Highway 101. In Applicant's estimation, the project will not substantially reduce the overall visual quality of the views from the highway, and the vegetation along the highway will completely screen the project over time. (Ex. 95, p. 15.) Applicant also believes that the Santa Clara County General Plan policy which pertains to the siting and design of gas control metering stations is not applicable because the gas metering station is located along the east side of Highway 101, along Malech Road, and is not immediately adjacent to Highway 101; therefore, the gas metering station will have little effect on the visual character and quality of its setting. (Ex. 95, p. 21.)

Applicant characterizes the MEC's design as consistent with the Private Development Guidelines for building massing, building height, and rooftop equipment (after certain refinements in the project's architectural design). (Ex 95, p. 17.) Applicant contends that its mitigation measures make a significant effort to meet the requirements of the landscape setback provision of the Private Improvement Guidelines for Monterey Road, and that the portion of the project which borders Fisher Creek cannot be considered a "riparian forest setting". (Ex 95, p. 21.)

Finally, in assessing LORS compliance for this topic area, Applicant believes that a distinction must be made between discretionary or advisory guidelines, and those which impose a non-discretionary or mandatory requirement. In this regard, Applicant states that all applicable LORS must be considered as part of an overall regulatory scheme, the provisions of which must be balanced with one another. (Ex. 95, p. 13.)

We agree with Applicant that this is a logical and reasonable approach which, were we local decision-makers, could be persuasive. However, such is not the situation and the local authorities have apparently not been persuaded by Applicant's approach. Applicant has not met its burden in this regard since there is simply nothing in the record which persuasively establishes that the City and/or County consider the project as complying with all LORS relating to visual matters. Moreover, the most recent indication we have is that the City supports the eleven noncompliances identified by Staff. (City Opening Brief on Group 3 Topics (April 12, 2001), p. 5.) We can only conclude, therefore, that the proposed project does not comply with the LORS specified above insofar as visual matters are concerned.

6. Mitigation Measures

The record reflects mitigation measures which will be employed to reduce the visual impacts of the project. These measures are summarized below.

- Placement of the administration building and other smaller structures on the southern edge of the plant site with the intent of creating a transition in scale between the future campus industrial buildings to the south and the plant's taller features.
- Location of the cooling tower on the west side of the site where it would be partially screened by the HRSG screening structures and site landscaping as it matures.
- Placement of the switching station on the north side of the site where the electric bus and take-off structures would be less visible to the public.

- Placement of the screened HRSG units in an area where they would block views from the planned industrial campus to the south of existing transmission towers located at the eastern toe of Tulare Hill.
- Placement of landscaping along the south side of the site to screen the lower portions of the project's facilities and create a visual link with the landscape treatments that will be required on the adjacent campus industrial lands.
- Installation of landscaping along the western edge of Monterey Road that is intended to screen the project's lower portions in views from the road and the northern end of Coyote and improve the appearance of the road corridor.
- Placement of landscaping along the access road and eastern edge of the site that is intended to partially screen views of the project from passenger trains and reinforce the effect of landscape screening along Monterey Road.
- Use of wall structures for the HRSG enclosures that will have alternating horizontal bands of surface materials, creating forms and patterns similar in appearance to proposed buildings for the industrial campus area to the south.
- Use of square designs for the HRSG stacks to reduce their industrial character and improve their compatibility with other existing and future structures in the area.
- Application of a network grid on the exterior of the HRSG stacks to create shadowing and texture.
- Minimization of the height of the cooling tower and use of a parapet to partially screen views of the cones.
- Use of flat, neutral colors on structures to create visual interest, blend the power plant with its surroundings, and help relate it to existing and future structures in the surrounding area.
- Plume abatement for cooling towers and HRSGs.
- Use of non-reflective materials for fences and treatment or painting of fences to blend with the surrounding environment.
- Construction of signs using non-glare materials and paint treatments using colors that are unobtrusive.
- Minimizing lighting by limiting it to areas required for safety, and shielding lighting from public view to the extent possible. Timers and sensors will be used to minimize the time that lights are on.
- Direction and shielding of lighting to reduce light scatter and glare. Highly directional, low-pressure sodium vapor fixtures will be used.

- Further color studies to be conducted in consultation with the City of San Jose and the CEC to identify a color scheme for the plant structures that will maximize their visual integration into their landscape backdrop and optimize their relationship to surrounding structures.
- Installation of trees along Coyote Ranch Road in consultation with the manager of Coyote Ranch to reduce the visibility of the project's structures from KOP 7.
- Collaboration with Caltrans to ensure good maintenance and continued growth of the existing trees planted along the west side of U.S. 101 in the vicinity of KOP 5.
- In the event that a trail is developed in the corridor along Fisher Creek, consultation with San Jose Park Department staff and staff of other relevant agencies to design and install plantings along the east edge of the trail that will screen views toward the plant site.
- In consultation with project site neighbors, the City of San Jose, and the Commission staff, design and installation of temporary fencing around the laydown area adjacent to the plant to reduce the visibility of construction-period activities.
- The transmission structures will be finished with flat, neutral gray tones to help relate them to the colors of the structures in the existing transmission corridor and blend with their surroundings.
- Non-specular conductors and non-reflective and non-refractive insulators will be used to reduce conductor and insulator visibility.
- After pipeline construction, ground surfaces will be restored to their original condition, and any vegetation that had been removed during the construction process will be replaced.
- Collaborating with residents of one home on the north side of Blanchard Road to design and install a fence around the northern and eastern sides of the property for screening construction period activities.
- Planting trees along the west side of Monterey Road and between the road and railroad tracks at the beginning of construction to provide a modest level of screening and visual enhancement in the area immediately along the road.
- Developing a plan for the laydown and staging area that will rely on placement of structures and fencing to screen the less attractive elements of the temporary facility from views of the road.
- Minimize the overall size of the construction laydown area and locate it as far as possible from the residences along Blanchard Road and from the railroad tracks and Monterey Road.

- Design and install high quality, aesthetic screening around the exterior of the laydown area for the full length of the south and east sides and any portion of the north side that may be visible to travelers on Monterey Road to a height that screens views from the Blanchard Road area and Monterey Road of the lower portions of equipment, vehicles, buildings, and materials in the laydown area and screens views of most of the lower portions of these elements for views.
- Provide natural appearing, undulating berms along the west side of Monterey Road in addition to the proposed planting.

These measures are discussed at length in the record and will be implemented through various Conditions of Certification. (See, e.g. Ex. 7, pp. 317-321, 324, 327, 329, 332, 334-336, 338, 340, 344.)

7. Disputed Conditions

At the evidentiary hearing, a degree of dispute and discussion surfaced over certain Conditions of Certification, in addition to **VIS-10** as previously mentioned. These are specified below.

- **VIS-1**. Applicant believes use of a "semi-gloss" finish, rather than a "low reflective, low gloss finish" ("matte" or "flat" finish) would be preferable because it would last longer, without becoming unattractive. (Ex. 95, pp. 22-23, Appendix B, p. B-1.) Staff disagrees, noting that low gloss finishes are typically used on other projects and that more highly reflective finishes increase glare and contrast, thus intensifying visual impacts. (2/15/01 RT 486-487; Ex. 7, p. 8.) In Staff's opinion, use of a low luster finish will also assist the project in complying with Guideline 2A of the City's riparian corridor policy. (Ex. 107, p. 7.)

  We are persuaded by Staff's reasoning that low gloss finishes are typically used, and that such finishes will assist the project in blending with its surroundings. Therefore, we have adopted **VIS-1** as proposed by Staff, but have also incorporated additions to the Verification as submitted by Applicant.

- **VIS-5**. We have made minor changes, deleting "passenger train" references and incorporating "restoration" in the place of "revegetation" as suggested by Applicant. (Ex. 95, Appendix B, pp. B-3 to B-4.)

- **VIS-8**. We have deleted the dimensions for the gas metering facility's footprint, and have incorporated submission of detailed specifications to the Commission and the County of Santa Clara. (See, Ex. 95, Appendix B, pp. B-4 to B-5; Ex. 107, p. 8.)

- **VIS-9**. This condition deals with certain design elements of the project. Applicant agrees with the overall intent, but is concerned that the inclusion of specific design prescriptions unduly limit final design flexibility. (Ex. 95, pp. 23-24.) Applicant would also prefer to emphasize the role of the City in the design review. (2/15/01 RT 382.) Staff disagrees with Applicant's suggestions, stating that specificity in certain design features is necessary to address concerns which have been voiced. (2/15/01 RT 487-488; Ex 107, p. 8.)

  The key to this dispute apparently involves the extent to which screening of the topworks, catwalks, and HRSGs should be specifically required. Staff's preferred version of this condition is relatively specific in this regard, while Applicant's version would be more flexible and presumably incorporate the City's preferences. We agree with Applicant's approach. While nothing would prevent the final implementation of the screening to the extent preferred by Staff, we believe flexibility is desirable in achieving a final project design which should reflect the City's concerns. We have therefore largely incorporated Applicant's suggestions. (Ex. 95, Appendix B, p. B-6.)

- **VIS-11.** Applicant is in general accord with Staff's proposal, but would prefer more flexibility in implementation. (Ex. 95, p. 25.) Staff agreed that this would be acceptable, providing that the goal of preserving views remained important. (2/15/01 RT 492.) We have therefore incorporated Applicant's proposal. (Ex. 95, Appendix B, p. B-10.)

FINDINGS AND CONCLUSIONS

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

1. Project components that may result in visual impacts include the heat recovery steam generators (HRSGs) and their screening structures, an array of steel topworks, a 10-cell cooling tower array with screening, two 72-foot-high H-frame pole structures with transmission lines, night lighting, and water vapor plumes from exhaust stacks and a cooling tower that would be visible under certain atmospheric conditions.

2. Implementation of the mitigation plan and the Conditions of Certification will reduce the project's visual impacts to less than significant levels in the area.

3. The project components will not result in significant visual impacts at key observation point (KOP) 1, Blanchard Road, or the surrounding locale.

4. The project will not significantly degrade the general visual character and quality of the area.

5. There may be temporary visual impacts during construction of the project, but no permanent visual impacts will result from these activities.

6. Water vapor plumes may be noticeable on occasion, but with implementation of the specified design parameters, mitigation measures, and the Conditions of Certification, such occurrences will be infrequent and not significant.

7. The City of San Jose has recently approved development projects which will transform the visual character of the project area from rural to urban/campus industrial.

8. The transformation of the project area from rural to urban/campus industrial will occur whether or not the MEC is constructed and operated.

9. The incremental affect of the MEC's contribution to the cumulative visual impacts in the project area is not significant.

10. The mitigation measures imposed upon the MEC project adequately mitigate its contribution to any overall cumulative visual impact.

11. The MEC project does not currently comply with eleven local laws, ordinances, regulations, and standards as specified in the discussion contained in the **Visual Resources** portion of this Decision.

12. Implementation of the Conditions of Certification, below, will reduce visual impacts of the project to below levels of significance.

We therefore conclude that the project will not create significant direct or indirect visual impacts, nor will it considerably contribute to significant adverse cumulative visual impacts. As mentioned in Finding 11 above, however, the project does not currently comply with all the applicable laws, ordinances, regulations, and standards identified in the appropriate portion of Appendix A of this Decision.

CONDITIONS OF CERTIFICATION

VIS-1 Prior to the start of commercial operation, the project owner shall treat the project structures, buildings, and tanks visible to the public in a non-reflective color or colors with a low-reflectivity/low-gloss finish to minimize contrast and harmonize with the surrounding environment. The project owner shall maintain the color or colors and the finish for the life of the project.

Protocol: The project owner shall submit a treatment plan for the project to the California Energy Commission Compliance Project Manager (CPM) for review and approval. The treatment plan shall include:

- specifications, and 11" x 17" color simulations, of the treatment proposed for use on project structures, including structures treated during manufacture;
- a detailed schedule for completion of the treatment; and
- a procedure to ensure proper treatment maintenance for the life of the project.

If the CPM notifies the project owner that revisions of the plan are needed before the CPM will approve the plan, the project owner shall submit to the CPM a revised plan.

After approval of the plan by the CPM, the project owner shall implement the plan according to the schedule and shall ensure that the treatment is properly maintained for the life of the project.

For any structures that are treated during manufacture, the project owner shall not specify the treatment of such structures to the vendors until the project owner receives notification of approval of the treatment plan by the CPM.

The project owner shall not perform the final treatment on any structures until the project owner receives notification of approval of the treatment plan from the CPM.

The project owner shall notify the CPM within one (1) week after all precolored structures have been erected and all structures to be treated in the field have been treated and the structures are ready for inspection.

Verification: Not later than sixty (60) days prior to ordering the first structures that are color treated during manufacture, the project owner shall submit its proposed plan to the CPM for review and approval.

If the CPM notifies the project owner that any revisions of the plan are needed before the CPM will approve the plan, within thirty (30) days of receiving that notification the project owner shall submit to the CPM a revised plan.

Not less than thirty (30) days prior to the start of commercial operation or such other time as agreed to by the CPM, the project owner shall notify the CPM that all structures treated during manufacture and all structures treated in the field are ready for inspection. At the discretion of the CPM, such inspections of completed surface finish application may be performed incrementally until all structures to be so finished have been inspected. If the final inspection indicates that structures previously inspected and accepted have sustained damage to their finish, such structures shall be touched-up and re-inspected by the CPM or his designee.

The project owner shall provide a status report regarding treatment maintenance in the Annual Compliance Report.

VIS-2 All fencing for the project shall be non-reflective.

Protocol: At least thirty (30) days prior to ordering the fencing the project owner shall submit to the CPM for review and approval the specifications for the fencing documenting that such fencing will be non-reflective.

If the CPM notifies the project owner that revisions of the specifications are needed before the CPM will approve the submittal, the project owner shall submit to the CPM revised specifications.

The project owner shall not order the fencing until the project owner receives approval of the fencing submittal from the CPM.

The project owner shall notify the CPM within one (1) week after the fencing has been installed and is ready for inspection.

Verification: At least thirty (30) days prior to ordering the non-reflective fencing, the project owner shall submit the specifications to the CPM for review and approval.

If the CPM notifies the project owner that revisions of the submittal are needed before the CPM will approve the submittal, within thirty (30) days of receiving that notification the project owner shall prepare and submit to the CPM a revised submittal.

The project owner shall notify the CPM within seven (7) days after completing installation of the fencing that the fencing is ready for inspection.

VIS-3 Prior to the start of commercial operation, the project owner shall design and install all lighting such that light bulbs and reflectors are not visible from public viewing areas, including the riparian corridor, and illumination of the

vicinity and the nighttime sky is minimized. Exterior floodlighting of structures must not occur. For all parking areas, low-sodium fixtures must be used, fixtures must be visually compatible with the surrounding landscape treatment, luminaire heights must be uniform and not exceed 20 feet, the lighting must be distributed uniformly throughout the parking areas and not exceed 0.5 foot-candles, light sources must not be visible from streets, and any pedestrian pathways must be illumined to a maximum of 0.8 foot-candles. To meet these requirements:

Protocol: The project owner shall develop and submit a lighting plan for the project to the CPM for review and approval and to the City of San Jose for review and comment. The lighting plan shall require that:

- Lighting is designed so that exterior light fixtures are hooded, with lights directed downward or toward the area to be illuminated and so that backscatter to the nighttime sky is minimized. The design of this outdoor lighting shall be such that the luminescence or light source is fully shielded to prevent light trespass outside the project boundary.
- High illumination areas not occupied on a continuous basis such as maintenance platforms or the main entrance are provided with switches or motion detectors to light the area only when occupied.
- There shall be no exterior floodlighting of structures.
- For all parking and other unroofed areas other than pedestrian walkways, only low-pressure sodium fixtures will be used and these fixtures will be visually compatible with the surrounding landscape treatment, luminaire heights will be uniform and not exceed 20 feet, the lighting will be distributed uniformly throughout the parking areas and not exceed 0.5 foot-candles, and light sources will not be visible from streets.
- Any pedestrian pathways will be illumined to a maximum of 0.8 foot-candles and may use lighting fixtures other than low-pressure sodium.
- A lighting complaint resolution form will be used by plant operations to record all lighting complaints received and document the resolution of those complaints. All records of lighting complaints shall be kept in the on-site compliance file.

If the CPM notifies the project owner that revisions of the plan are needed before the CPM will approve the plan, the project owner shall prepare and submit to the CPM a revised plan.

Lighting shall not be installed before the plan is approved. The project owner shall notify the CPM when the lighting has been installed and is ready for inspection.

Verification: At least ninety (90) days before ordering the exterior lighting, the project owner shall provide the lighting plan to the CPM for review and approval and to the City of San Jose for review and comment.

If the CPM notifies the project owner that any revisions of the plan are needed before the CPM will approve the plan, within thirty (30) days of receiving that notification the project owner shall submit to the CPM a revised plan.
The project owner shall notify the CPM within seven (7) days of completing exterior lighting installation that the lighting is ready for inspection.

VIS-4 The project owner shall restore any and all areas that are disturbed during the construction or operation of any portions of the proposed underground utilities.

> Protocol: The project owner shall submit a plan for restoring the surface conditions of any rights-of-way disturbed during construction of underground utilities to the CPM for review and approval and to the City of San Jose or Santa Clara County for review and comment for the portions of the linear facilities in their respective jurisdictions. The plan shall include grading to the original grade and contour and revegetation and restoration of surface conditions of the rights-of-way.
>
> If the CPM notifies the project owner that revisions of the plan are needed before the CPM will approve the submittal, the project owner shall submit to the CPM a revised plan.
>
> The project owner shall not implement the plan until the project owner receives approval of the submittal from the CPM.
>
> The project owner shall notify the CPM within one (1)week after the grading and revegetation has been installed and is ready for inspection.

Verification: At least sixty (60) days prior to beginning implementation of the surface restoration, the project owner shall submit the plan to the CPM for review and approval and to the City of San Jose or Santa Clara County for review and comment for the portions of the linear facilities in the respective jurisdictions.

If the CPM notifies the project owner that revisions of the submittal are needed before the CPM will approve the submittal, within thirty (30) days of receiving that notification the project owner shall prepare and submit to the CPM a revised submittal.

The project owner shall notify the CPM within seven (7) days after completing the surface restoration that it is ready for inspection.

VIS-5 Immediately before beginning use of the construction laydown area for the power plant, the project owner shall implement the installation of temporary aesthetic screening along the south and east sides and any of the eastern portion of the north side of the construction laydown area that may be visible to travelers on Monterey Road. The project owner shall also implement the installation of long-term aesthetic screening along the west side of Monterey Road in accordance with the approved landscaping plan and implementation

schedule. The temporary aesthetic screening shall remain in place for the duration of the use of the laydown area. Temporary screening shall be high enough to obscure views of most of the lighting, as well as equipment, vehicles, and materials in the area, from the highway and nearby residences to the south. Immediately upon completion of construction of the project, the temporary aesthetic screening shall be removed and the construction laydown area shall be restored to its condition prior to construction or to an improved condition including one as provided in the approved landscaping plan. The goal of the restoration shall be to maintain the open space character of the site and area. The long-term aesthetic screening shall remain in place and be maintained by the project owner for the life of the power plant project.

Protocol: The project owner shall submit to the CPM for review and approval and to the City of San Jose for review and comment a specific plan describing its temporary and long-term aesthetic screening plans, providing evidence that the City of San Jose has been consulted regarding the plans, and attaching any recommendations from the City of San Jose. The plan shall include, but not be limited to:

- detailed plans, at a reasonable scale, which identify the type, character, colors, and other detailed information for the proposed temporary and long-term aesthetic screening;
- a detailed grading plan at a reasonable scale for the long-term aesthetic screening that shows natural-appearing undulating berms within the landscape buffer area along the west side of Monterey Road;
- elevations of the views of the temporary aesthetic screening showing how the objectives of the screening will be accomplished;
- any maintenance procedures; and
- a procedure and plan for removing the temporary aesthetic screening and restoring the area, including a detailed restoration plan, at a reasonable scale, which includes a list of proposed plant species and sizes; a discussion of the suitability of the plants for the site conditions and mitigation objectives; and procedures for irrigation, maintenance, and replacement planting.

If the CPM notifies the project owner that revisions of the plan are needed before the CPM will approve the plan, the project owner shall prepare and submit to the CPM a revised plan.

The temporary and long-term aesthetic screening and restoration plans and any other plan features shall not be installed before the plans are approved. The project owner shall notify the CPM and the City of San Jose when the plans have been implemented and are ready for inspection.

Verification: At least ninety (90) days prior to the start of use of the construction laydown area for the power plant, the project owner shall submit the proposed temporary and long-term aesthetic screening plans to the CPM for review and approval and to the City of San Jose for review and comment. The project owner shall submit any required revisions within thirty (30) days of notification by the CPM. The project owner shall notify the CPM in writing within seven (7) days after implementing the proposed plans that the temporary and long-term aesthetic screening installations are ready for inspection. The owner shall follow a similar schedule and procedures for submittal and inspection of the restoration plan starting with submittal of the plan at least ninety (90) days before intended removal of the temporary aesthetic screening.

VIS-6 The project owner shall comply with the requirements of Policy 12 of the General Development Plan Standards of the Master Development Plan and Guidelines for the North Coyote Valley Campus Industrial Area (City of San Jose 1985) regarding screening of truck loading docks and storage and service areas and Guideline 2C of the Riparian Corridor Policy Study (City of San Jose 1994) regarding screening of parking areas, loading zones, trash enclosures, mechanical devices, and similar accessory uses.

Protocol: The project owner shall submit to the CPM for review and approval and to the City of San Jose for review and comment a plan for screening of truck loading docks, storage and service areas, parking areas, loading zones, trash enclosures, mechanical devices, and similar accessory uses that conforms to the requirements of Policy 12 of the General Development Plan Standards of the Master Development Plan and Guidelines for the North Coyote Valley Campus Industrial Area and Guideline 2C of the Riparian Corridor Policy Study. The screening shall be implemented prior to the beginning of operation of the power plant.

If the CPM notifies the project owner that revisions of the plan are needed before the CPM will approve the submittal, the project owner shall submit to the CPM a revised plan.

The project owner shall not implement the plan until the project owner receives approval of the submittal from the CPM.

The project owner shall notify the CPM within one (1) week after the screening has been installed and is ready for inspection.

Verification: At least sixty (60) days prior to installing the screening, the project owner shall submit the plan to the CPM for review and approval and to the City of San Jose for review and comment. If the CPM notifies the project owner that revisions of the submittal are needed before the CPM will approve the submittal, within thirty (30) days of receiving that notification the project owner shall prepare and submit to the CPM a revised submittal.

The project owner shall notify the CPM in writing within seven (7) days after completing installation of the screening that the screening is ready for inspection.

VIS-7 Immediately following the beginning of construction of the power plant, the project owner shall install aesthetic landscape screening along a portion of Coyote Ranch Road between the power plant and Coyote Ranch in locations that would eventually help screen views from the ranch toward the power plant. Vegetation selected for landscape screening shall consist primarily of plants that are appropriate for and preferably native to the local region and trees that would grow quickly and reach a height of at least 40 feet.

Protocol: The project owner shall submit to the CPM for review and approval and to the City of San Jose and the County of Santa Clara Parks and Recreation Department for review and comment a specific plan describing its aesthetic landscape screening plan, including irrigation, along a portion of Coyote Ranch Road between the power plant and Coyote Ranch. The plan shall include, but not be limited to:

- a detailed landscape and irrigation plan, at a reasonable scale, which includes a list of proposed tree and, if needed, shrub species and sizes and a discussion of the suitability of the plants for the site conditions and mitigation objectives;
- elevations of the views of the aesthetic landscape screening projected for ten (10) and twenty (20) years from the time of startup of operation of the facility that show how the planting will appear;
- maintenance procedures, including any needed irrigation; and
- a procedure for replacing unsuccessful plantings.

If the CPM notifies the project owner that revisions to the plan are needed before the CPM will approve the plan, the project owner shall prepare and submit to the CPM a revised plan.

The landscaping screening and any other plan features shall not be installed before the plan is approved. The project owner shall notify the CPM, City of San Jose, and County of Santa Clara Parks and Recreation Department when the plan has been implemented and is ready for inspection.

Verification: At least ninety (90) days prior to the start of construction of the power plant, the project owner shall submit the proposed aesthetic landscape screening plan to the CPM for review and approval and to the City of San Jose and County of Santa Clara Parks and Recreation Department for review and comment. The project owner shall submit any required revisions within thirty (30) days of notification by the CPM. The project owner shall notify the CPM in writing within seven (7) days after completing the implementation of the proposed plan that the aesthetic landscape screening installation is ready for inspection.

VIS-8 The gas metering station east of Highway 101 shall be designed in a manner that helps visually screen it from views from Highway 101 and integrate it with its surroundings. To accomplish these objectives, the facility shall have no permanent outdoor lighting; the prefabricated shed shall not exceed 10 feet in height; the fence enclosing the facility shall be 8 feet in height and shall have a medium to dark color and a non-reflective finish; no other elements in the facility enclosure shall exceed 5 feet in height; the pipes, valves, and other elements in the facility shall be brown in color and have low-reflectivity/low gloss finishes; and landscape screening shall be provided around the exterior of the facility. Landscape screening shall consist of a mix of large (greater than 8 feet height and spread at maturity), drought-tolerant shrubs of the same or visually similar species as other large native shrubs near the site (e.g., baccharis sp. and rhamnus sp.) arranged in informal, naturalistic patterns to blend with the existing character of the surrounding landscape. At the time of planting, large shrubs shall be at least 4 feet in height and spread. Other drought-tolerant species of smaller shrubs and grasses may be used to provide visual interest and variety providing the objectives for screening and visual integration are met. The final design of the gas metering station shall be submitted to the CEC CPM for review.

Protocol: At least sixty (60) days before the beginning of construction of the gas metering station east of Highway 101, the project owner shall submit detailed design specifications for the gas metering station including facility and equipment dimensions, its aesthetic treatment and landscape screening plan, including irrigation, to the CPM for review and approval and to the County of Santa Clara Parks and Recreation Department for review and comment. The plan shall include, but not be limited to:

- detailed color elevations, at reasonable scales, indicating the precise colors and appearance of the shed, fence, pipes, valves, and all other elements of the gas metering station;
- color and finish samples for all colors and materials to be used at the facility and a fence material sample showing the color and finish to be used for the fence;
- a detailed landscape and irrigation plan, at a reasonable scale, which includes a list of proposed plant species and sizes and a discussion of the suitability of the plants for the site conditions and mitigation objectives;
- south, west, and north elevations of the aesthetic landscape screening projected for 2 and 5 years from the time of startup of operation of the facility that show how the planting will appear;
- maintenance procedures, including any needed irrigation; and
- a procedure for replacing unsuccessful plantings.

If the CPM notifies the project owner that revisions to the plan are needed before the CPM will approve the plan, the project owner shall prepare and submit to the CPM a revised plan.

The aesthetic treatment, landscaping screening, and any other plan features shall not be installed before the plan is approved. The project owner shall notify the CPM when the plan has been implemented and is ready for inspection.

Verification: At least sixty (60) days before the beginning of construction of the gas metering station east of Highway 101, the project owner shall submit detailed design specifications for the gas metering station including facility and equipment dimensions, the proposed aesthetic treatment, and landscape screening plan to the CPM for review and approval and to the County of Santa Clara Parks and Recreation Department for review and comment. The project owner shall submit any required revisions within thirty (30) days of notification by the CPM. The project owner shall notify the CPM, within seven (7) days after implementing the proposed plan, that the aesthetic treatment and landscape screening installation is ready for inspection.

VIS-9 The power plant shall be designed in a manner that helps visually integrate it with its surroundings. To accomplish these objectives, some elements of the power plant's appearance that draw attention to it as an industrial facility may need to be changed. These elements include the exposed topworks on the screened HRSG units; the catwalks wrapping around the HRSG stacks; and the architectural design treatment of the screening for the HRSG units, cooling tower, and tanks. Changing these elements is intended to help better fit the structures and the power plant with the rural visual character of their existing surroundings and the architectural character of probable future buildings in the Campus Industrial Area development described in the North Coyote Valley Campus Industrial Area Master Development Plan (City of San Jose 1985 and 1999).

Protocol: Prior to the start of construction, the project owner shall submit an architectural design treatment plan to the CPM for review and approval and to the City of San Jose for review and comment. This plan shall show how the following will be accomplished:

- Minimization of visible drums, piping, silencers, catwalks, and other industrial appearing appurtenances in the area above the architectural screening around the HRSG units. Additional screening may be desirable and, if so, it should be integrated into the overall architectural design to create a unified composition.

- In consultation with the City of San Jose Planning Department, modify the architectural design treatment of the screening for the HRSG units,

cooling tower, and tanks to better fit the structures and the power plant with the existing visual character of the area and the architectural character of probable future buildings in the Campus Industrial Area development; treatment changes shall include using colors, lines, forms, textures, patterns, fenestration, materials, and finishes similar to those of buildings to be constructed nearby in the Campus Industrial Area.

The plan shall include, but not be limited to:

- Specification of the architectural design treatment proposed for all project structures visible from off the project site including, but not limited to, the HRSG units and stacks, cooling tower, and tanks.

- Elevations of all views of the power plant showing the new architectural design treatment, including changes to the catwalks and screening of the topworks, proposed for all project structures visible from off the project site; the elevations shall clearly show the colors, forms, materials, finishes, and other detailed information for the architectural design treatment of structures.

- A procedure to ensure proper maintenance of the architectural design treatment for the life of the project.

- If the CPM notifies the project owner that revisions to the plan are needed before the CPM will approve the plan, within thirty (30) days of receiving that notification the project owner shall submit to the CPM a revised plan.

- After final approval of the plan by the CPM, the project owner shall implement the plan. The project owner shall notify the CPM when the plan has been implemented and all structures are ready for inspection. The project owner shall ensure that the treatment is properly maintained for the life of the project.

Verification: At least sixty (60) days prior to the start of construction of the power plant, the project owner shall submit the proposed architectural design treatment plan to the CPM for review and approval and to the City of San Jose for review and comment. The project owner shall submit any required revisions within thirty (30) days of notification by the CPM. The project owner shall not begin implementation of any parts of the final architectural design treatment on any structures until the project owner receives notification of approval of the plan from the CPM. Not less than thirty (30) days prior to the start of commercial operation, the project owner shall notify the CPM in writing that all structures are ready for inspection.

VIS-10 The power plant shall be operated in a manner that helps visually integrate it with its surroundings. To accomplish these objectives, the power plant shall be operated to minimize visible plumes. The power plant shall be operated to meet the following plume abatement standards:

- No plume from the HRSG stack of any height shall be visible above the top of a HRSG stack at any time.
- Cooling tower plumes shall not be visible for more than a total of fourteen (14) hours in any calendar year; provided, however, plumes created during any unplanned outages of the plume abatement control system shall not be counted against the fourteen (14) hour total.

The power plant shall be operated in a manner that meets these standards and shall immediately adjust its operations to meet the standards whenever weather or other conditions necessitate adjustments to operation to meet the standards. If more than two (2) violations of any standard or standards occur in any calendar year, the power plant shall prepare and submit a revised operating plan to the CPM that demonstrates how the plant will meet these standards.

Protocol: Prior to the start of construction, the project owner shall submit to the CPM for review and approval and to the City of San Jose for review and comment a plume abatement plan that describes how the power plant will be designed and operated to meet the standards for minimizing visible plumes during daylight hours. The plume abatement plan shall also identify any adjustments to operations that will be necessary to meet the standards whenever weather or other conditions necessitate adjustments to operations to meet the standards.

The plan shall include, but not be limited to:

- The plant shall be designed to produce no visible plumes in conditions above 30 degrees Fahrenheit and below 90 percent relative humidity.
- Operating procedures of the power plant to meet the standards for abatement of visible plumes during daylight hours.
- Operating procedures for immediately adjusting power plant operations to meet the standards whenever weather or other conditions necessitate adjustments to meet the standards.
- Procedures for monitoring and reporting the duration and frequency of occurrence of any visible plumes.

If the CPM notifies the project owner that revisions to the plume abatement plan are needed before the CPM will approve the plan, within thirty (30) days of receiving that notification the project owner shall submit to the CPM a revised plan.

The project owner shall not start construction of the power plant until the CPM has approved the plume abatement plan. The project owner shall implement the plume abatement plan and shall ensure that the monitoring and reporting are properly conducted for the life of the project.

Verification: At least sixty (60) days prior to the start of construction of the power plant, the project owner shall submit the proposed plume abatement plan to the CPM for review and approval and to the City of San Jose for review and comment. The project owner shall submit any required revisions within thirty (30) days of notification by the CPM. The project owner shall not begin construction of the power plant until the project owner receives written notification of approval of the plume abatement plan from the CPM.

VIS-11 In consultation with the City of San Jose and Santa Clara County Parks and Recreation Department, the project owner shall plant the trail corridor using appropriate native vegetation that would enhance the visual character and quality of views and habitat along the trail corridor. Vegetation selected for planting along the trail corridor shall consist of plants that are appropriate for and native to the local region and that provide aesthetic and habitat benefits for the trail corridor.

Protocol: The project owner shall submit to the CPM for review and approval and to the City of San Jose and the County of Santa Clara Parks and Recreation Department for review and comment a specific plan describing its landscape plan, including irrigation, along all portions of the Fisher Creek corridor between Blanchard Road and the railroad tracks that are designated to include a trail. The plan shall include, but not be limited to:

- a detailed landscape and irrigation plan, at a reasonable scale, which includes a list of proposed plant species and sizes and a discussion of the suitability of the plants for the site conditions and objectives;
- maintenance procedures; and
- a procedure for replacing unsuccessful plantings.

If the CPM notifies the project owner that revisions to the plan are needed before the CPM will approve the plan, the project owner shall prepare and submit to the CPM a revised plan.

The plantings and any other plan features shall not be installed before the plan is approved. The project owner shall notify the CPM, City of San Jose, and County of Santa Clara Parks and Recreation Department when the plan has been implemented and is ready for inspection.

At least ninety (90) days prior to the start of construction of any portion of the trail between Blanchard Road and the railroad tracks, the project owner shall submit the proposed aesthetic landscape screening plan as required above. The project owner shall submit any required revisions within thirty (30) days of notification by the CPM. The project owner shall notify the CPM within seven (7) days after implementing the proposed plan that the planting installation is ready for inspection.

VIS-12 Prior to commencing construction, the project owner shall contact the owners of property along Blanchard Road and develop, in consultation with the property owners, a plan to screen views of the project from each property if so desired by a property owner. The project owner shall bear the cost of any landscaping/screening developed under this condition.

Verification: At least fifteen (15) days prior to commencing project construction, the project owner shall provide to the CPM a report on the landscaping/screening plan, including a list of the property owners contacted. The report shall specify the measures which will be implemented and a schedule for their implementation.

D. NOISE

The construction and operation of any power plant project will create noise, or unwanted sound. The character and loudness of this noise, the times of day or night during which it is produced, the land use designations in the project vicinity, and the proximity of the facility to sensitive receptors combine to determine whether project noise will cause significant adverse impacts. In this section, we evaluate whether noise produced by the MEC's project-related activities will be sufficiently mitigated to comply with CEQA and applicable noise control laws.

Staff's Noise Tables A1 through A4, replicated at the end of this section, explain the noise measurement terms used in this discussion. All sound levels or decibels (dB) described in the record are "A-Weighted," which correlates to human hearing. (1/17/01 RT 146-148, 292.) The "Leq" is the average A-Weighted noise level during a specified period. The DNL is the day-night average sound level over 24 hours after adding 10 dB for nighttime noise levels. (1/17/01 RT 187-88, 273; Ex. 7, p. 273.)

The CEQA Environmental Checklist[130] includes the following criteria to evaluate whether noise from a proposed project could result in significant adverse impacts:

- 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.
- Exposure of persons to, or generation of, excessive ground borne vibration or ground borne noise levels.
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

[130] Title 14, California Code of Regulations, section 15000 et seq., Appendix G (XI).

Under CEQA, a project-related increase of 5 dBA above nighttime ambient noise levels is considered potentially significant. Staff typically applies this CEQA guidance in analyzing noise impacts. (Ex. 7, p. 279.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

During its operational life, the project will emit a steady, continuous, and broadband noise day and night; this sound will be distinguishable from the existing ambient noise. (1/17/01 RT 236; Ex. 8, p. 2.) The impacts of this noise on the ambient environment, compliance with applicable noise standards, and the appropriate mitigation were disputed by the parties.

1. Setting

The area around the site is mostly rural with some nearby residences.[131] The nearest existing sensitive receptor is a single-family residence ("Passantino residence" or "M-1")[132] located approximately 1,150 feet south of the project on the west side of Monterey Road along Blanchard Road. The next nearest sensitive receptors include a single-family residence (M-2) and the Encinal School (M-3) on the east side of Monterey Road, southeast of the site.[133] Traffic is the dominant source of noise in the area, specifically vehicle traffic on Monterey Road and Highway 101 as well as commuter and freight rail traffic; these sources create peak noise levels on a sporadic basis. (1/17/01 RT 14-18, 61-62, 181; Ex. 8, p. 2.)

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[131] The MEC site consists of a 126-acre parcel located in an unincorporated area of Santa Clara County and a 10-acre parcel located within San Jose City limits. (Ex. 7, p. 191 et seq.) The Applicant intends to combine a portion of the county parcel with the city parcel to configure the project site. The city parcel is within the City's North Coyote Valley Campus Industrial Area. The project site is currently designated agricultural and is surrounded by undeveloped land.

[132] The Passantino residence and the area around the project site are included in the North Coyote Valley Campus Industrial Area. According to Applicant, the agricultural and residential receptors south of the MEC site will be replaced by office buildings and the zoning will be changed from agriculture to Planned Development. (1/17/01 RT 60; Ex. 1, § 8.5.4.3.3.)

[133] The residential development northwest of the site will be shielded from project-related noise by Tulare Hill. Two isolated houses south of the plant on Blanchard Road will also be shielded by a spur of the same hill. (Ex. 5, pp. 7-9.)

Applicant conducted an ambient noise survey at location M1 for a period of 37 hours, beginning at 8:00 a.m. on March 15, 1999, and ending at 9:00 a.m. on March 17, 1999. (1/17/01 RT 13; Ex. 7, p. 277.) The hourly nighttime ambient noise levels (L90) ranged from 37 dBA to 53 dBA.[134] According to Applicant, the primary sources of nighttime noise were intermittent vehicle and rail traffic. Applicant therefore averaged the nighttime noise measurements between 10:00 p.m. and 7:00 a.m. to provide an index of the overall impact from a steady noise source and found an average of 46 dBA. (Ex. 1, § 8.5.3.4; Ex. 27, p. 14.) Staff disagreed with this average because background noise levels were appreciably higher between 5:00 a.m. and 7:00 a.m. than at other times during the night.[135] Staff consequently recalculated the average by excluding noise levels between 5:00 a.m. and 7:00 a.m. and found the nighttime average was 39 dBA.[136] (Ex. 7, p. 283.) Applicant accepted this result. (See, e.g., Ex. 8, p. 2.)

2. Standards

Local standards regulating noise disturbances in the MEC project vicinity are included in the Santa Clara County General Plan Noise Element and the City of San Jose General Plan Noise Element.

The County Noise Element establishes standards for permissible exterior noise limits according to land use category. Section B11-192 of the Noise Element establishes noise standards for "receiving land use categories." Where the noise measurement occurs on a property adjacent to a different land use category, the noise level limit applicable to the lower land use category, plus 5 dB, shall apply. [Section B11-192(1)(d).] Under the County Noise Ordinance, exterior noise for

[134] Ambient noise levels recorded at M2 and M3 were higher due to traffic along Monterey Road. (Ex. 7, pp. 277-278.)

[135] Staff has utilized the averaging method in previous power plant cases where ambient nighttime noise levels were influenced by intermittent traffic noise. (1/17/01 RT 205, 237:17-20.) Though its overall approach is consistent in various power plant siting cases, Staff acknowledges that each proposal must be examined on a case-by-case basis. (1/17/01 RT 214-215.)

[136] The specific calculations were 39.5 dBA and 41 dBA on March 15 and 16, 1999, respectively. (Ex. 7, p. 283.)

single-family residential land uses is measured at the property line and may not exceed 45 dBA for more than 30 minutes per hour during nighttime hours. Thus, the MEC must achieve 50 dBA (45 dBA + 5 dBA) at the property line to comply with County residential noise standards. (1/17/01 RT 95-96, 250-251, 278; Ex. 7, pp. 275-276.)

The Noise Element for the San Jose 2020 General Plan, as amended, establishes a long-term goal of 55 DNL (the equivalent of 49 dBA continuous) outdoors and a goal of 45 DNL indoors at adjacent sensitive receptors. The Noise Element also provides that commercial, industrial, and other non-residential uses located adjacent to existing or planned noise sensitive uses must mitigate noise generation to meet the 55 DNL (the equivalent of 49 dBA continuous) noise level at the property line. (1/17/01 RT 66; Ex. 7, pp. 275-276; San Jose 2020 General Plan at p. 119.)

In addition, the evidence shows that the industrial noise limit under the City's Noise Element is 70 DNL. Since new industrial development is anticipated in the Coyote Valley Campus Industrial area, Applicant applied the industrial noise criterion to the property line separating the southern boundary of MEC property from the Passantino property. (1/17/01 RT 66-67.)

Applicant contends that the MEC need not comply with the County's noise ordinance because the Passantino residence is located on agricultural land, which is not designated for noise control under the County standards. Since it believes the MEC falls within the City's urban services area, Applicant maintains that the City's noise criteria are applicable. (Ex. 27, pp. 12-13.) The project meets County standards at the Passantino residence, but not at the property line. (1/17/01 RT 156, 170-171.) Regardless of which criteria are ultimately applicable, however, the evidence establishes that local ordinances require measurements at the property line.

Existing and proposed recreational/park areas are closer to the MEC than is the Passantino residence.[137] Applicant did not model the potential effects of the project upon this area since, in Applicant's estimation, sounds from the MEC would be dominant only during nighttime hours, when the recreational areas would typically not be used. (1/17/01 RT 21, 69-70, 92-93, 96, 144-145.)

Under the CEQA guidance typically applied by Staff, project-related noise during operation should not, in this case, exceed 44 dBA, i.e., 5 dBA above the ambient nighttime noise measurement of 39 dBA at the nearest sensitive receptor (Passantino residence). (1/17/01 RT 97; Ex. 7, p. 283.) However, Applicant's design approach relied on the City's outdoor noise level goal of 55 DNL at the nearest sensitive residential receptor. (1/17/01 RT 19, 42, 59, 65; Ex. 8, p. 2.) In this regard, Applicant proposed that the noise measurement should be determined at the fence line north of the outdoor use area of the Passantino residence and not at the MEC property line.[138] (1/17/01 RT 60, 65.) According to Applicant's interpretation of the City's Noise Element, where a parcel is large with mixed uses other than residential, using a 50-foot distance from the residence is appropriate (i.e., the fence line in this case). (1/17/01 RT 58-60, 66.) Applicant indicated that plant noise within the Passantino residence would comply with the City's interior noise standard of 45 DNL. (Ex. 30, p. 2.) Applicant also proposed to retrofit the house with acoustical windows and air conditioning to maintain sufficient attenuation in accordance with an approach identified in the City's General Plan, which states that existing uses may receive remedial sound attenuation treatment.

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[137] These include the Coyote Creek Regional Park and several trails, such as the Fisher Creek riparian corridor, the Coyote Creek Regional Trail, the proposed Juan Bautista de Anza National Historic Trail bicycle route, and the Bay Area Ridge Trail. (Ex. 35, p. 2, citing the CVRP DEIR at p. 37.) Staff conducted a noise survey of this area on a Saturday and found the ambient noise ranged from 57 dB to 61 dB due to traffic and recreational vehicles. Noise from MEC at this area is expected to range from 49 to 59 dB, resulting in a 3 dB increase that Staff does not consider significant. (1/17/01 RT 159-162, 244-245.) Further, Staff did not regard recreational users as sensitive receptors because users would quickly be moving along the trails. (1/17/01 RT 232-233.)

[138] Applicant concedes that the City's exterior noise level of 55 DNL is measured at the property line dividing an industrial source from a residential receiver. Applicant asserts, however, that the circumstances in this case should exempt MEC from this requirement because the intervening land between the MEC property line and the house is unoccupied farmland. (Ex. 5, pp. 2-3.)

The evidence establishes that it is technically feasible for the MEC to comport with CEQA's guidance and achieve 44 dBA at the Passantino property.[139] (1/17/01 RT 24-26, 191, 232.) Applicant, however, argued that achieving 44 dBA is not necessarily a reasonable goal because there are few sensitive receptors in the agricultural area, ambient noise levels would be exceeded only during the late nighttime hours, and future industrial development in the area would experience project-related noise levels in conformance with the City's noise standard. (Ex. 8, p. 2.) According to Applicant, its estimated cost of $5 million for mitigation measures to achieve 44 dBA at the residence would be excessive under the circumstances. (Ex. 8, p. 3.) Staff agreed with Applicant. (1/17/01 RT 191-193.) There is, however, no evidence in the record explaining the asserted $5 million expense, nor did Staff independently verify this amount. (1/17/01 RT 120; 193:18-22; 231-232.)

Intervenor Coyote Valley Research Park and Coyote Valley Properties (jointly CVRP) disagreed with Applicant's proposals to rely on the City's noise standard and to retrofit the Passantino residence. CVRP believes the project must provide noise mitigation at the source and not at the receptor. (Ex. 35, p. 5.) CVRP argued that several existing and proposed recreational areas and trails are closer to the project than is the Passantino residence, and that Applicant's own analysis shows that noise levels will exceed 60 Ldn dBA and 55 dBA Leq over much of these areas. (Ex. 35, p. 2.) CVRP was also concerned that the noise analysis inappropriately applied the City's outdoor standard of 55 DLN to achieve a design level of 49 dBA at the Passantino fence line, rather than at the MEC property line as required. According to CVRP, the project design violates both the City's noise standard and the more stringent County standard as well as the North Coyote Valley Campus Industrial Area Master Development Plan noise requirements. CVRP argues that additional mitigation at the noise source, rather than at the

[139] The Preliminary Staff Assessment (PSA) recommended that MEC meet 44 dBA at the Passantino property. Staff subsequently revised its recommendation based on Applicant's PSA comments. (1/17/01 RT 232; Ex. 30, p. 2.)

residential receptor, will assure likely compliance with applicable ordinances at the project's property line. (1/17/01 RT 262-264.)

3. Impacts and Mitigation

The record reflects cacophonous disagreement over the point at which the project's noise levels must be measured, as well as over the degree to which the Conditions of Certification proposed by Staff and accepted by Applicant provide adequate assurances that the project's noise impacts will in fact be appropriately mitigated.

At the outset, we note that the Commission typically relies on local noise standards to determine whether project-related noise will cause significant impacts. In this case, the evidence is rather muffled concerning applicable noise standards, due at least in part to Applicant's approach in defining the location where the noise measurement should occur and in assuming the outcome of land use actions by the City. The evidence of record also indicates that project-related noise levels at the MEC property line are estimated at 64 dBA. (1/17/01 RT 170-171.) Applicant proposes to mitigate project-related noise to the City goal of 55 DNL (the equivalent of 49 dBA continuous) at the Passantino fence line instead of at the MEC property line.

We do not accept Applicant's approach. In the first instance, both City and County noise elements indicate that noise levels are measured at the property line. While Applicant has advanced various arguments and interpretations which could reasonably suggest that there are alternate ways of satisfying the local jurisdictions insofar as noise limits are concerned, it has not met its burden in factually establishing that the local jurisdictions find any of the alternate approaches acceptable. Rather, the record falls short of affirmatively establishing that the project will in fact comply with locally designated standards.

Moreover, Applicant's rationale for using the Passantino fence line is to account for open space between the MEC property line and the fence line. There is no

express basis for this approach under either the City or County noise elements, and it would mean that the noise levels for the area between the property line and the fence line could also exceed local standards. (Ex. 35, p. 5.) Notwithstanding Applicant's presumption that the Passantino property will eventually become commercial/industrial, the current land use is residential. Since the average existing nighttime ambient noise level is 39 dBA at the Passantino location, CEQA's guidance would limit project-related noise to 44 dBA, not 49 dBA, at this location. (Title 14, Cal. Code of Regs., §§ 15125.1 (a), 15126.2.)

Furthermore, the evidence shows that further reduction of noise at the source is feasible, and could achieve a 44 dBA level at the residence. We consider the $5 million figure discussed in the record as non-persuasive since there is no analytic support for this amount and, in any event, the cost of noise mitigation does not exempt a project proponent from meeting applicable standards. There is simply no evidence of record which persuasively suggests that the MEC's noise impacts - both from construction and operation - cannot be reduced to a level that complies with applicable standards and that is unequivocally insignificant from an environmental perspective.

Therefore, we decide that the project shall meet applicable standards at the MEC property line and a level of 44 dBA at the nearest sensitive receptor, i.e., the Passantino residence or M1. As necessary, appropriate noise mitigation measures shall be employed at the source to meet the required noise limits.[140]

We now turn to the proposed Conditions of Certification and address the changes sought by CVRP and by Applicant.[141]

NOISE-2 The purpose of this Condition is to provide an effective mechanism for documenting and investigating noise complaints. CVRP proposed that project related complaints, including those due to vibration and start-ups,

[140] We would expect that this would also address, to the extent feasible, the noncompliance with noise standards in the riparian corridor. (See **Biological Resources** Findings.)

[141] We do not comment on Conditions of Certification **NOISE 1, 3**, or **4** as proposed since no party questioned them or suggested they be changed.

be responded to within an hour. (1/17/01 RT 252, 288.) Staff believes this is unnecessary and impractical. (1/17/01 RT 163-164.)

While we acknowledge the approach preferred by CVRP, we ultimately rely on Staff's experience in this matter. Based on this experience, as well as the necessity to comply with noise standards at the property line as described above, we can reasonably expect that complaints of noise level exceedances from the MEC will be relatively rare. For those that do occur, however, typical complaint procedures appear to be sufficient.

Therefore, we have we have not modified **NOISE-2** to reflect the required response time as requested by CVRP. We have however, included complaints related to vibration as a prudent measure since this source is addressed in the City and County ordinances. (1/17/01 RT 178-179.)

NOISE-5 This Condition involves specifying plant output levels at which community noise surveys are required, the protocol for such surveys, the allowable noise levels attributable to the project, and the characterization of a "legitimate complaint." (1/17/01 RT 252-254, 257-259.) Applicant disputes the necessity of the changes sought by CVRP; Staff also generally disagrees with these changes (1/17/01 RT 164-166), save for certain elements. (See, Staff Reply Brief on Group 1 and 2 Topics (April 4, 2001), pp. 18-20.)

First, as discussed above, we have determined that the project must comply with local noise standards at the property line. We believe that this should allay some of the concerns expressed with the proposed version of **NOISE-5**. Next, although testimony of record indicates that maximum project noise should occur at 80 percent of load conditions, we see no reason not to include surveys at 100 percent of load in view of the planned (and approved) adjacent use. This seems to us to provide a desirable degree of specificity as to whether or not the project is complying with applicable noise limitations. We are unconvinced of the necessity for surveys at the intermediate 90 percent load conditions. Similarly, we incorporate the suggested 30-minute averaging times to prevent averaging of peak noise levels. Finally, we have revised the explanation of what constitutes a legitimate noise complaint in a way which we believe adequately reflects all valid concerns. (See, e.g. 1/17/01 RT 281-283.)

NOISE-6 This condition applies to employee noise exposure. Although CVRP has suggested a change to reflect the load conditions discussed above, we do not view it as necessary because the condition as proposed adequately protects the project's employees and ensures compliance with occupational safety and health standards.

NOISE-7 Applicant requested a modification to Staff's proposed Condition of Certification **NOISE-7** which would exclude horizontal directional drilling (HDD) because this activity must occur continuously, for a period of two to

three weeks during project construction. Applicant also indicates there are sound attenuating measures, such as silencers and acoustical enclosures, which can reduce noise associated with this activity. (1/17/01 RT 10-11, 29-32, 52-54, 121, 125.)

The record does not quantify the noise levels expected from HDD (1/17/01 RT 31, 168-169) and Staff, while unable to support this modification, remains neutral. (See Staff Opening Brief on Group 1 and 2 Topics (March 23, 2001), p. 5.)

While we recognize the necessity to perform HDD outside the construction periods otherwise specified in **NOISE-7**, we also believe it prudent to require Applicant to employ reduction measures at the outset of HDD activities, and have amended the condition accordingly.

CVRP also proposed a new condition (identified as "**NOISE-8**") to require vibration surveys. (1/17/01 RT 259-260.) The rationale supporting the necessity of this additional condition seems to us to be based on the desire for assurance that the MEC would not impact future adjacent facilities. We believe the inclusion of vibration in **NOISE-2** as the basis for a complaint/investigation reasonably addresses this matter.

Finally, we note that CVRP desired further specificity as to the types of noise mitigation measures which the MEC would actually use. (1/17/01 RT 48-49.) While recognizing that the testimony establishes there are a variety of methods to achieve the required noise limits, the testimony also identifies certain measures as appropriate. (Ex. 7, p. 285.) We have referenced these in a Finding, below, and have also recognized Applicant's need for flexibility in achieving the applicable noise limits.

FINDINGS AND CONCLUSIONS

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

1. Noise from vehicle and rail traffic characterizes the existing ambient noise environment in the project vicinity.

2. Construction and operation of the Metcalf Energy Center (MEC) will create noise. These noises will be discernible from the existing ambient noise.

3. Construction noise levels are temporary and transitory in nature and shall be mitigated to the extent feasible by sound reduction devices, limiting construction to daytime hours, and providing notice to nearby residences and businesses, as appropriate.

4. Horizontal Directional Drilling activities must occur on a 24-hour per day, 7-day per week basis for two to three weeks.

5. The Conditions of Certification, below, provide for the use of measures which will reduce noise from Horizontal Directional Drilling to the extent feasible.

6. The nearest sensitive residential receptor, known as M1 or the Passantino residence, is located approximately 1,150 feet from the project site.

7. The average nighttime ambient noise level experienced at the nearest sensitive receptor is 39 dBA.

8. Both the City and County noise standards require noise measurements at the project property line.

9. Applicant has not established that its approaches to mitigating noise impacts, or its interpretation of local ordinances, are acceptable to local jurisdictions.

10. The evidence establishes that the noise impacts of the MEC do not comply with applicable local standards.

11. It is feasible for the project to comply with noise levels specified in local ordinances and thus eliminate any noncompliance.

12. The Conditions of Certification, below, reasonably ensure that the project's noise levels will be measured at the MEC property line and thus comply with applicable standards.

13. The Conditions of Certification, below, adequately ensure that any effects from vibration due to the project will appropriately addressed.

14. Applicant requires flexibility in employing mitigation to meet the required noise limitations.

15. Measures which Applicant may employ to meet required noise limitations are reflected in Exhibit 7, page 285. (Final Staff Assessment.)

16. The project owner will implement measures to protect workers from injury due to excessive noise levels.

17. Implementation of the measures contained in the Conditions of Certification, below, makes it reasonably likely that MEC will comply with the applicable laws, ordinances, regulations, and standards specified in

the pertinent portion of Appendix A of this Decision, and ensures that project noise impacts will be mitigated to the extent feasible.

The Commission therefore concludes that the mitigation measures contained in the Conditions of Certification, below, ensure that project-related noise levels will not cause unavoidable significant adverse direct, indirect, or cumulative noise impacts.

CONDITIONS OF CERTIFICATION

NOISE-1 At least fifteen (15) days prior to the start of construction (defined as start of rough grading) of the MEC, and again at least fifteen (15) days prior to the commencement of the steam blow activity, the project owner shall notify all residents and businesses, within a one-mile radius of the project site, by mail or other effective means. 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 MEC. If the telephone is not staffed twenty-four (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 also be posted at the MEC site during construction in a manner visible to passersby. This telephone number shall be maintained until the MEC has been operational for at least one (1) year.

Verification: The project owner shall transmit to the CPM, in the first monthly construction report following the start of rough grading, a statement signed by the project manager attesting that the above notification has been performed, describing the method of that notification, and including a sample letter, poster, or other notice, as appropriate. This statement shall also attest that the telephone number has been established and posted at the power plant site.

In the monthly construction report following the steam blow activity, the project owner shall transmit to the CPM a statement signed by the project manager attesting that, at least fifteen (15) days prior to the commencement of the steam blow activity, a notification was sent to all residents and businesses within a one-mile radius of the project. The report shall include a description of the method of that notification.

NOISE-2 Throughout the construction and operation of the MEC, the project owner shall document, investigate, evaluate, and attempt to resolve all project related noise complaints, as well as those due to project vibration.

Protocol: The project owner shall:

1. use the Noise Complaint Resolution Form (see below for an example), or functionally equivalent procedure acceptable to the

CPM, to document and respond to each noise or vibration complaint;

2. attempt to contact the person(s) making the noise or vibration complaint within 24 hours;
3. conduct an investigation to determine the source of noise or vibration related to the complaint;
4. take all feasible measures to reduce the noise or vibration at its source if the noise or vibration is project-related; and
5. submit a report documenting the complaint and the actions taken. The report shall include a complaint summary and the results of noise or vibration reduction efforts and, if obtainable, a signed statement by the complainant, stating that the noise/vibration problem is resolved to complainant's satisfaction.

Verification: Within thirty (30) days of receiving a noise or vibration complaint, the project owner shall file a copy of the Noise Complaint Resolution Form, or similar instrument approved by the CPM, with City of San Jose 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 thirty (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 construction of the MEC, the project owner shall submit to the CPM for review a noise control program. The noise control program shall be used to reduce employee exposure to high noise levels during construction and also to comply with applicable OSHA standards.

Verification: At least thirty (30) days prior to the start of rough grading the project owner shall submit to the CPM the above referenced program. The project owner shall make the program available to OSHA upon request.

NOISE-4 If a traditional high-pressure steam blow process is employed, the project owner shall equip steam blow piping with a temporary silencer that quiets the noise of steam blows to no greater than 100 dBA measured at a distance of one hundred (100) feet. The project owner shall conduct steam blows only during the hours of 7:00 a.m. to 7:00 p.m. weekdays, and 8:00 a.m. to 6:00 p.m. weekends and holidays. If a modern, low-pressure continuous steam blow process is employed, the project owner shall submit a description of this process, with expected noise levels and projected hours of execution, to the CPM.

Verification: At least fifteen (15) days prior to the first high-pressure steam blow, the owner shall submit to the CPM drawings or other information describing the temporary steam blow silencer, and a description of the steam blow schedule. At least fifteen (15) days prior to the first low-pressure continuous steam blow, the project owner shall submit to the CPM drawings or other information describing the process, including the noise levels expected and the expected time schedule for execution of the process.

NOISE COMPLAINT RESOLUTION FORM

Metcalf Energy Center
(99-AFC-3)

NOISE COMPLAINT LOG NUMBER _____

Complainant's name and address:

Phone number: _____

Date complaint received: _____
Time complaint received: _____

Nature of noise complaint:

Definition of problem after investigation by plant personnel:

Date complainant first contacted: _____

Initial noise levels at 3 feet from noise source _____ dBA Date: _____

Initial noise levels at complainant's property: _____dBA Date: _____

Final noise levels at 3 feet from noise source: _____ dBA Date: _____

Final noise levels at complainant's property: _____ dBA Date: ____ _____

Description of corrective measures taken:

Complainant's signature: _____ Date: _____

Approximate installed cost of corrective measures: $ _____
Date installation completed: _____
Date first letter sent to complainant: _____ (copy attached)
Date final letter sent to complainant: _____ (copy attached)

This information is certified to be correct:

Plant Manager's Signature: _____

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

NOISE-5 Upon the MEC first achieving a sustained output of 80 percent or greater of rated capacity, the project owner shall conduct a 25-hour community noise survey, utilizing the same monitoring sites employed in the pre-project ambient noise survey and the property line, at a minimum. Additional sites may be utilized in response to community complaints. Surveys shall be conducted at 80% and 100% load conditions. The surveys shall also include the octave band pressure levels to ensure that no new pure-tone noise components have been introduced. Averaging times shall not exceed thirty (30) minutes in duration to prevent averaging of peak noise levels. No single piece of equipment shall be allowed to stand out as a dominant source of noise that draws legitimate complaints. Steam relief valves shall be adequately muffled to preclude noise that draws legitimate complaints.

Project-related operation noise at the MEC property line shall comply with applicable standards. The noise contributed by the MEC at the nearest residence shall not exceed 44 dBA Leq under normal operating conditions including startups and shutdowns. If the results from the surveys indicate that power plant noise levels are in excess of 44 dBA Leq at the nearest residence (M1 as described in the record) or do not comply with the applicable local standard at the property line, additional mitigation measures, including new technologies, shall be implemented to reduce noise to a level of compliance with the limits. If necessary, the project owner shall install sound rated windows and air conditioning at all affected sensitive receptors exposed to noise levels between 44 dBA and 49 dBA Leq.

A “legitimate complaint” refers to a noise caused by the MEC project, as opposed to another source. A legitimate complaint constitutes either: a violation by the project of any noise, law, ordinance, regulation, or standard which is documented by another individual or entity; or a minimum of three(s) complaints over a twenty-four (24) hour period that are confirmed by the project owner, or any local or state agency which would, but for the exclusive jurisdiction of the Commission, otherwise have the responsibility for investigating noise complaints or enforcing noise limitations.

> Protocol: The measurement of power plant noise for purposes of demonstrating compliance with this Condition may alternatively be made at an acceptable location closer to the plant (e.g. 400 feet from the plant boundary) and this measured level then mathematically extrapolated to determine the plant noise contribution at the nearest sensitive receptor or the property line. However, notwithstanding the use of this alternative method for determining the noise level, the character of plant noise shall be evaluated at the property line and at the nearest sensitive receptor to determine the presence of pure tones or other dominant sources of plant noise.

Verification: Within thirty (30) days after completing a survey, the project owner shall submit a summary report of the survey to City of San Jose, Santa Clara County, and the CPM. Included in the report will be the project owner’s certification that 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 thirty (30) days of completion of installation of these measures, the project owner shall submit to the CPM a summary report of a new noise survey, performed as described above and showing compliance with this condition.

NOISE-6 The project owner shall conduct an occupational noise survey to identify the noise hazardous areas in the facility. The survey shall be conducted within thirty (30) days after the facility is operating at an output of 80% of rated capacity or greater, and shall be conducted by a qualified person in accordance with the provisions of Title 8, California Code of Regulations sections 5095-5100 (Article 105) and Title 29, Code of Federal Regulations, Part 1910. 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 state and federal regulations.

Verification: Within thirty (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 upon request.

NOISE-7 Construction and construction related activity (that which causes off-site annoyance, as evidenced by the filing of a legitimate noise complaint) shall be restricted to the hours of: 7 a.m. to 7 p.m. on weekdays and from 8 a.m. to 6 p.m. on weekends and holidays. The only exception is Horizontal Directional Drilling, which may continue for 24 hours a day, seven days a week for two to three weeks.

> Protocol: The project owner shall implement typical noise source reduction measures such as silencers and acoustical enclosures for Horizontal Directional Drilling.

Verification: The project owner shall transmit to the CPM in the first Monthly Construction Report a statement certifying that the above restrictions will be observed throughout the construction of the project. At least thirty (30) days prior to commencing Horizontal Direction Drilling (HDD), the project owner shall submit a plan for approval to the CPM to implement noise reduction measures for HDD.

NOISE MEASUREMENTS
FUNDAMENTAL CONCEPTS OF COMMUNITY NOISE

Noise levels can be measured in a number of ways. One common measurement, the equivalent sound level (L_{eq}), is the long-term A-weighted sound level that is equal to the level of a steady-state condition having the same energy as the time-varying noise, for a given situation and time period. (See NOISE: Table A1, below.) A day-night (L_{dn}) sound level measurement is similar to L_{eq}, but has a 10 dB weighting added to the night portion of the noise because noise during night time hours is considered more annoying than the same noise during the day.

Source: Exhibit 7, pp. 296-299.

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NOISE: Table A1
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, dB	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 5 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 Average Sound Level, DNL or L_{dn}	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.
Source: California Department of Health Services 1976.	

In order to help the reader understand the concept of noise in decibels (dBA), NOISE Table A2 illustrates common noises and their associated dBA levels.

NOISE: Table A2
Typical Environmental and Industry Sound Levels

Source and Given Distance from that Source	A-Weighted Sound Level in Decibels (dBA)	Environmental Noise	Subjectivity/ Impression
Civil Defense Siren (100')	140-130		Pain Threshold
Jet Takeoff (200')	120		
Very Loud Music	110	Rock Music Concert	Very Loud
Pile Driver (50')	100		Very Loud
Ambulance Siren (100')	90	Boiler Room	Very Loud
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	Quiet
Large Transformer (200')	40		
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 3-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 10-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 A3
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

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 A4
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: OSHA Regulation

RELATIONSHIPS

$L_{dn} = 10 \log (1/24)[15x10^{(Ld/10)} + 9x10^{(Ln+10)/10}]$

Note: the 10-dB weighting added to the nighttime noise level. Daytime and nighttime are 15 hours (0700~2200 hrs) and 9 hours (2200~0700 hrs) respectively. L_d and L_n are the L_{eq} values over the 15 and 9 hours respectively. L_{dn} does not contain any consideration for tonal sounds, since it is derived from L_{eq} measurements.

CNEL is essentially the same as L_{dn}, except that different time segments are used in computation. The 24-hour period is divided into three segments instead of two. The day period (0700~1900 hours), evening (1900~2200 hours) and night (2200~0700 hours). The evening period is assigned 5-dB weighting and the nighttime is assigned 10-dB weighting. The extra 5 dB weighting during the evening results in higher values for CNEL that L_{dn}, but the difference is not statistically significant.

NOISE ATTENUATION

$[L_p]$ (at x = r) = $[L_p]$(at r = y) – 20log(x/y).

Where: x = distance to point where noise level is to be determined.
y = reference point.

$\Delta_{Loss} = 20\log (x/y)$.

Special case where x = 2y
$\Delta_{Loss} = 20\log (2y/y) = 20\log (2) = 6$

Therefore, as we double the distance, from a point source in free space, the noise level decreases by 6 dB.

E. SOCIOECONOMICS

Under this topic we examine the impacts the project may have on community services and infrastructure including schools, medical and protective services, as well as the fiscal effects upon area governments. As appropriate, we may also assess whether a proposed project will create economic benefits for an area. Finally, even though not legally required, we typically review information concerning a project's impacts upon minority and low-income populations (environmental justice), and the effect a project may have upon local property values.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The project site is located at the southern base of Tulare Hill at the northern end of Coyote Valley in San Jose, just west of Monterey Highway and south of the Metcalf road intersection.[142] The analysis of record defines the relevant socioeconomic area to include the highly urbanized San Jose Metropolitan Statistical Area (MSA) encompassing the communities of Campbell, Cupertino, Gilroy, Los Altos, Milpitas, Morgan Hill, Mountainview, Palo Alto, Santa Clara, San Jose, Saratoga, and Sunnyvale. (1/30/01 RT 20, 244; Ex. 7, pp. 450-451; Ex. 10, p. 2.) It is likely that the City of San Jose and Santa Clara County will receive the majority of the socioeconomic impacts attributable to the project. (Ex. 7, p. 451.)

During this proceeding, Californians for Renewable Energy, Inc. (CARE), the Rancho Santa Teresa Swim and Racquet Club (RSTS&RC), the Santa Teresa Citizens Action Group (STCAG), the City of San Jose, and several individual Intervenors participated extensively on this topic.

[142] A full description of the location is contained in the **Project Description** section of this Decision.

1. Employment

Employment in Santa Clara County in 1998 was estimated at 933,500, with approximately 3.4 percent of the available workforce unemployed as opposed to a statewide unemployment rate of 5.8 percent. (1/30/01 RT 21.) The largest sectors of employment were manufacturing, trade, services, state and local government, and construction. Employment in Santa Clara County increased 2.1 percent from May 1999 to March 2000. The largest gains were in business services and amusements. (Ex. 7, p. 455.)

Actual construction of the facility will take 18 to 24 months. The MEC project will not cause an influx of a significant number of construction or operation workers into the local area. There will be a gradual increase in workers from the first months of construction to over 100 workers on-site during approximately 11 months of the construction period, peaking at 399 workers during the sixteenth month and followed by a gradual decrease in the last months of construction. Approximately 20-24 personnel will be employed during the facility's operation. (1/30/01 RT 22-23; Ex. 7, p. 456; Ex. 10, pp. 3-4.)

The uncontradicted evidence of record establishes that the number of skilled and manual laborers in the San Francisco Bay area is adequate to meet the construction needs of this project. Almost all of the construction labor force will likely commute daily to the job site from their homes in area communities. During the operation phase, the employees will likely commute from within Santa Clara or adjacent counties. (1/30/01 RT 21-22; Ex. 7, p. 456; Ex. 10, pp. 3-4.)

2. Fiscal

The San Jose/Santa Clara County area ranks as one of the strongest economies in the country with a reputation as a world class manufacturing community with a highly productive labor force. Santa Clara County ranks first among the nine Bay

Area counties in new construction ($3.2 billion in 1998), total retail sales ($119.2 billion in 1998), total net effective buying income ($39.6 billion in 1998), and total manufacturing employment (246,003 in 1997). San Jose ranks third in the nation in median household effective buying income of $54,144 in 1998. Silicon Valley is commonly characterized as the single most important high-tech center in the United States. (Ex. 7, p. 455.)

The MEC's initial capital cost will be $300 to $400 million, and it will generate annual property taxes in the range of $3 to $5.2 million. Five to ten million dollars of materials and supplies will be purchased locally, resulting in sales tax revenues during construction of about $412,500 to $825,000. The construction payroll will be about $40.8 million. Annual operations payroll will be around $1 to $1.2 million. The annual operations budget of between $12 to $19 million will result in local expenditures of about $2 to $4 million. These in turn will provide another $165,000 to $330,000 in local sales taxes. (1/30/01 RT 22; Ex. 10, p. 4.) In general, full-time jobs have a multiplier effect on the local and regional economy by supporting additional indirect job growth. The evidence shows that two-to-three indirect jobs are supported by each construction job, such as those that would be generated at the MEC. (Ex. 7, p. 456.)

The uncontradicted evidence establishes that the construction and operation of the project will create jobs, as well as increase retail and tax revenue in the affected area.

3. Housing

As of January 1, 1999, there were a total of 581,532 housing units in Santa Clara County, with about 4 percent vacant. Housing construction is lagging behind job growth; this situation forces workers to live quite far from the San Jose area and commute long distances to work. It is estimated that by 2020, the San Jose MSA

will produce 50 percent more jobs while housing will increase by only 20 percent. (Ex. 7, p. 455.)

The demand for housing in the project area is not expected to increase appreciably as a result of the MEC because the vast majority of the work force is expected to commute from the San Francisco Bay area and adjacent counties. (Ex. 7, p. 457; Ex. 10, p. 4.) Those workers who live a long distance (more than a two-hour drive) could temporarily relocate in the San Jose area. Temporary housing such as motels and short-term rentals are available. There are approximately 113 hotels and motels with about 10,000 rooms available in the greater San Jose area; the vacancy rate is approximately 17 percent. The evidence thus clearly indicates that construction and operation of the MEC would not adversely impact area housing.

4. Schools

The MEC site is located in the Morgan Hill Unified School District and is adjacent to the Oak Grove School District/East Side Union High School District. The Morgan Hill Unified School District currently exceeds the District's planned capacity. There are plans to construct an elementary and high school to accommodate additional students. Construction of the schools should begin in 2001. (Ex. 7, p. 455.)

Industrial development within the Morgan Hill Unified School District is currently charged a one-time assessment fee of $0.31 per square foot of principal building area. At this rate, the fee for the MEC will be about $8,587. (See Condition of Certification **SOCIO-2**.) Because almost all of the construction and operation workforce is expected to be drawn from the local workforce or to commute from homes in areas where their children are already attending schools, no significant impacts are expected on the Morgan Hill or Oak Grove School Districts. (1/30/01 RT 23; Ex. 7, p. 457; Ex. 10, p. 4.)

5. Emergency and Other Services

PG&E will provide electricity during construction from the Metcalf substation, which is near the plant site; natural gas will be acquired from a major PG&E gas line within 200 feet east of highway 101. (Ex. 7, p. 457.) [Water and wastewater disposal services are discussed at length in the **Soil and Water Resources** section of this Decision.]

The primary responder for emergency calls is the Santa Clara County Sheriff's Department. The San Jose Police Department is available for backup or initial response as needed. (Ex. 7, p. 455.) There is no suggestion in the record that the MEC would adversely affect police services.

Fire protection services are provided by the San Jose Fire Department and the South Santa Clara County Fire District. As discussed in the **Worker Safety and Fire Protection** section, the San Jose Fire Department's current resources are not adequate to provide suitable response to the MEC. The Conditions of Certification, however, provide an appropriate remedy for this situation.

The nearest hospital to the MEC site is the Santa Teresa Kaiser Permanente Medical Center located less than four miles to the northwest. It is a 336-bed hospital that can provide a wide variety of services to area members. There are over a dozen other hospitals in Santa Clara County including four facilities in San Jose. All hospitals coordinate responses to large-scale emergencies; ambulance services are available from every hospital. With the exception of the flu season, bed and service capacity is available throughout the year. (Ex. 7, p. 456.) The evidence shows that the MEC will not adversely affect hospital, utility, or police services. (Ex. 7, p. 458.)

The City of San Jose's General Plan states that "New development is expected to pay for the infrastructure required to support it." This is also consistent with the North Coyote Valley Campus Industrial Area Plan that requires developers to bear the cost of any extensions or expansions of public infrastructure. In this regard, we expect that the City of San Jose and the Applicant would negotiate the "fair share" amount that the Applicant will pay for the water and wastewater facilities needed for the project in accordance with Condition of Certification **SOIL&WATER-9**.

6. Environmental Justice

Although not legally required, the parties addressed the project's potential impact on minority and low-income populations in accordance with the U.S. Environmental Protection Agency's (USEPA) guidelines. (1/30/01 RT 244:21-25 to 245:2; Ex. 7, pp. 458-459; Ex. 10, App. B.)

This analysis began with extensive outreach efforts to inform potentially affected minority and low-income populations via mailings, media articles, distribution of bilingual fact sheets, and public workshops. (1/30/01 RT 30-31, 246-247.) These efforts included local Hispanic, Asian, and African–American communities. Next, Applicant and Staff analyzed demographic data to determine the percentage of minority and low-income populations within the project impact area. (1/30/01 RT 31, 245.) This analysis covered potential impact areas both on a detailed level and more broadly, i.e. within up to a six-mile radius of the project.[143] (1/30/01 RT 33-34, 245.) The analysis then determined whether there are greater than fifty percent minority or low-income populations within the potential impact area and, if so, whether these populations would be disproportionately impacted. (1/30/01 RT 31-34, 245-250; Ex. 7, pp. 458-459; Ex. 10, App. B.)

[143] USEPA suggests a five-mile radius (1/30/01 RT 70-71); Staff uses a six-mile radius (1/30/01 RT 245).

Based on 1990 Census data, the evidence indicates that the demographic composition of the project area impact does not contain a minority or low-income population. (1/30/01 RT 27-28, 31.) Based on estimated 2000 Census data, the testimony shows that there are some census tracts within a six-mile radius of the project with greater than a 50 percent minority population.[144] (1/30/01 RT 246:9-13.) Regardless of the data used, however, the ultimate conclusions of these analyses are that there is no disproportionate impacts upon minority or low-income populations due to the MEC. (1/30/01 RT 33-37; 246:14-18.)

The views of James B. MacDonald, a member of the Board of Trustees of the Pittsburg Unified School District in Pittsburg, California, regarding the Commission's interpretation of environmental justice issues have been incorporated in the administrative record of this proceeding. We recognize his assertions that pollution has a higher negative effect on the health and welfare of minority and low- income students. Similarly, we note the opinion provided in this matter by STCAG. (Ex. 71.) These views are unsupported by any factual analysis and therefore are not in our opinion sufficient to outweigh the detailed and comprehensive analyses provided by Applicant and Staff.

7. Property Values

In general, the project area is experiencing significant growth which is amplifying a housing shortage and causing the average price of a home to increase. The housing market is extremely tight in the San Jose/Santa Clara area because of an imbalance between housing supply and demand. This has led to an increase in the median home price in this area of over 20 percent from 1998 to 1999.

[144] Additionally, because the federal guidance does not give a percentage of population threshold to determine when a low-income population becomes recognized for an environmental justice analysis, Staff used the same "greater that 50 percent" threshold that is used for minority populations. (Ex. 7, p. 458-459.) The low-income population, at five percent in the MEC area, is significantly below this threshold.

Property values are expected to continue to increase in the foreseeable future. (Ex. 7, p. 460.)

A number of Intervenors such as RSTC&RC, STCAG, and Messrs. Ajlouny and Scholz expressed concerns about the project's impact on property values. Essentially, there is considerable local concern that property values will diminish, or not rise as rapidly as they would otherwise, due to the MEC project.

Applicant performed a variety of property value analyses including surveying local realtors, performing comparison studies, reviewing the literature on property value impacts from industrial activities nationwide, and analyzing housing price and sales trends for neighborhoods in proximity to the proposed project. A portion of these collective analyses compared value trends in the Santa Teresa District near the MEC site with value trends in similar developments in Santa Clara County before and after the project was publicized. Applicant concluded that the project has not adversely affected property values in the area and that it is not likely that it would do so in the future. (1/30/01 RT 38-52; Ex. 10.)

Staff reviewed the Applicant's analyses and also conducted a review of the literature on property value impacts from industrial activities. This effort concluded that, in general, there is no information or study that demonstrates an adverse or negative impact on property values directly attributable to a natural gas-fired power plant. (1/30/01 RT 247-286; Ex. 7, p. 460.)

Intervenors challenged these conclusions, both through extensive cross-examination and independent presentations. The record contains extensive questioning concerning the various studies referred to by the witnesses (see, e.g. Ex. 82 and Ex. 83), and establishes a considerable level of disagreement over their applicability. STCAG presented anecdotal statements about a realtor losing two sales transactions after disclosing the proximity of the proposed power plant. (Ex. 69; Ex. 70.) This evidence does not, however, objectively establish that the

lost sales were clearly caused by the MEC project. RSTS&RC presented an analysis of property values which calculated a decline in property tax collections as a result of reduced property values, in other words a comparison of the value of residential property taxes compared to what they would have been without the power plant. (1/30/01 RT 314-324; Ex. 73, pp. 2-10.) While this evidence contradicted Applicant's and Staff's conclusion that the construction and operation of the MEC would have no effect on future property values, it nevertheless anticipated that property values would rise in the future, albeit at a slower pace. (1/30/01 RT 347.)

After reviewing the merits of the overall body of evidence on this matter, we recognize that the effect of a proposed project is ultimately one of subjective perception (1/30/01 RT 197; Ex. 73, p. 1), revolving around equally subjective "quality of life" issues.[145] There is simply no factual means by which we can address concerns of this nature within the present context. Objectively, the evidence (consisting of the variety of studies, reviews, and appraisal techniques used by Applicant and Staff) persuades us that property values are not likely to decrease because of the project. This conclusion is similar to that reached in the Crockett decision, of which we have taken official notice.[146] (1/30/01 RT 194-196, 215.) The countervailing evidence is simply insufficient in our minds to persuade otherwise.[147]

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[145] These concerns are expressed by the RSTS&RC: "It is our contention that the Applicant has failed to demonstrate either that there is no impact to the quality of life to our local community or that there is an overriding benefit to the larger community..." from the siting of the MEC. (Ex. 73, p. 1.)

[146] Commission Decision on the Crockett Cogeneration Project, Docket No. 92-AFC-1. (May 1993, Pub. No. P800-93-004.) Here, the Commission specifically found that the project, located virtually across the street from area residences, was not likely to have a significant adverse effect on local property values. (Finding 3, p. 153.)

[147] Finally, it must be realized that CEQA and the implementing Guidelines focus on physical changes to the environment for purposes of determining the severity of impacts. [Pub. Resources Code, §§ 21100(d) and 21151(b).] "An economic or social change by itself shall not be considered a significant effect upon the environment." [14 Cal. Code of Regs., § 15382; see also,

8. Cumulative Impacts

The evidence identifies a variety of projects that are undergoing, will undergo, or have recently undergone CEQA review. These include the Coyote Valley Research Park (CVRP), a 688 acre project that will include office, research and development, and light assembly buildings that will employ approximately 20,000 employees upon full buildout. The site is about one-quarter mile south of the MEC site. Construction is expected to start in the summer of 2001. A residential development, expected to be located approximately one mile northeast of the MEC, would involve building 131 single-family homes on 28 acres. The EIR for this project has not been completed. (Ex. 7, p. 460.)

There are several other projects planned for areas within three to four miles of the MEC. The Coyote Valley Urban Reserve is located two miles south and would contain as many as 25,000 homes, but the development is considered long-term in nature. The Hellyer View I project involves a 400,000 square foot manufacturing, research, development, and warehousing facility about four miles north of the MEC. A decision on a site development plan is pending. Another manufacturing, research, and development facility called Creekside Plaza is planned for an area four miles north of the MEC. This project is also waiting to receive a site development permit. (Ex. 7, p. 460.)

Construction of some of these projects will likely overlap with construction of the MEC. In addition, there may be an overlap with Calpine's other power plant projects in the Pittsburg and Antioch area. The only identified potential impact from a cumulative socioeconomic point of view would be a possible shortage of workers in some trades. However, because of the large available work force in the San Jose/San Francisco Bay area and adjacent counties, it appears that there are an adequate number of workers in the area. Moreover, the 20

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§ 15064(e).] Staff explains this in its Reply Brief on Group 1 and 2 issues (April 4, 2001), pp. 13-15.)

operational workers needed for the MEC will have an insignificant contribution to a cumulative socioeconomic impact when compared to the area's existing and future workforce. (Ex. 7, pp. 460-461.)

In summary, the construction and operation of the MEC, when considered with the development of other projects in the vicinity, will not add significantly to the cumulative socioeconomic impacts on the local area. (Ex. 7, p. 461.)

FINDINGS and CONCLUSIONS

Based upon the persuasive weight of the evidence of record, we make the following findings and reach the following conclusions:

1. The MEC project will draw primarily upon the local labor force for construction and operation workers.

2. The MEC project will not cause an influx of a significant number of construction and/or operation workers into the local area.

3. The construction and operation of the MEC project will result in increased revenue to the local jurisdiction from property and sales taxes, employment, and sales of services, manufactured goods, and equipment.

4. Sufficient housing is available in the project area to accommodate workers for the MEC project.

5. The MEC project will not cause a significant adverse direct or cumulative impact on housing, employment, or schools.

6. Existing local police and medical services are adequate to accommodate the MEC project. Additional fire protection services for the MEC and other proposed development projects are required. Condition of Certification 3 in **Worker Safety and Fire Protection** addresses this issue.

7. The persuasive weight of the evidence of record establishes that construction and operation of the MEC project will not result in any significant adverse socioeconomic impacts.

8. The potential environmental justice impacts of the project have been comprehensively analyzed and the evidence establishes that the MEC project will not have a disproportionately high or adverse impact upon any minority or low-income populations.

9. The weight of the evidence of record establishes that property values are not likely to decline due to the MEC project.

10. The Conditions of Certification below ensure that the MEC project will comply with the laws, ordinances, regulations, and standards contained in the pertinent portion of Appendix A of this Decision.

We therefore conclude that the MEC project will not result in any significant direct, indirect, or cumulative adverse socioeconomic impacts.

CONDITIONS OF CERTIFICATION

SOCIO-1 The project owner and its contractors and subcontractors shall recruit employees and procure materials and supplies within the City of San Jose and Santa Clara County first unless:

- to do so will violate federal and/or state statutes;
- the materials and/or supplies are not available; or
- qualified employees for specific jobs or positions are not available; or
- there is a reasonable basis to hire someone for a specific position from outside the local area.

Verification At least sixty (60) days prior to the start of earth moving activities, the project owner shall submit to the Energy Commission Compliance Project Manager (CPM) copies of contractor, subcontractor, and vendor solicitations and guidelines stating hiring and procurement requirements and procedures. In addition, the project owner shall notify the CPM in each Monthly Compliance Report of the reasons for any planned procurement of materials or hiring outside the local regional area that will occur during the next two (2) months.

SOCIO-2 The project owner shall pay the one-time statutory school facility development fee as required at the time of filing for the in-lieu building permit with the San Jose Building Department.

Verification: The project owner shall provide proof of payment of the statutory development fee in the next Monthly Compliance Report following the payment.

VII. SUMMARY OF PUBLIC COMMENTS

The overall record contains an extensive amount of public comment from both those favoring, and those opposed to, the Metcalf Energy Center. These comments have come from concerned individuals, such as those in the Community Petition (Exhibit 72) submitted by the Santa Teresa Citizens Action Group, various industry and trade groups, and organizations such as the local chapter of the Sierra Club, the American Lung Association, and the National Association for the Advancement of Colored People. In addition, the project has received attention from national, local, and state political figures, as evidenced by Assembly Concurrent Resolution No. 4 (February 9, 2001) and numerous media articles.

Throughout these proceedings, and as reflected in the transcribed record, the Committee provided opportunity for public comment at each conference and hearing. Finally, on March 23, 2001, the Committee conducted an additional hearing with the sole purpose of providing anyone interested additional opportunity to comment on the project.

While we do not attempt to summarize the entire body of public comment provided, the following pages contain brief summaries of comments offered at the March 23 hearing. We believe this suffices to illustrate, in a reasonable manner, the divergence of opinion concerning the project.

COMMENTOR	Page(s) *	COMMENTARY
Ron Gonzales (Mayor of San Jose)	4-6	Introduction of attending City Council members including Mr. Forrest Williams of District 2, the site of the proposed project; urges denial of the project in favor of a better site.
	6-10	11/28/20 vote of City Council rejecting land use designation (General Plan Amendment, Prezoning/Rezoning, Annexation); land use planning is City Council's first duty under the California Constitution concept of "home rule." Do not rush power plant decisions as a fix in an atmosphere of "panic, ignorance, and pressure."
	10-15	General Plan envisions Coyote Valley as home to technology campuses, residential development, and a greenbelt. Uncertain local impacts on neighborhoods and an elementary school less than a mile away. Silicon Valley energy summit proposals for shaping energy needs by siting plants in compatible locations. Doubts the CEC can make a "credible finding of public necessity and convenience" necessary for override decision in light of recently approved new generation (6300 MW).
	15-18	FSA suggests better sites not in residential neighborhoods. Adverse override decision would be inconsistent not only with City's land use policies but other City laws and represent a radical change in CEC policy of deference to local land use decisions. State and its cities should be partners, not adversaries, in solving energy problems
Robert Therkelsen (Deputy Director, Energy Commission)	19-25	Staff recommends approval despite potential unmitigated effects in the areas of land use (agricultural lands) and visual impacts. Background information regarding deregulation, California's aging electrical system, and market problems.

*All page reference are to the March 23, 2001 reporter's transcript.

COMMENTOR	Page(s) *	COMMENTARY
	25-34	Discussion of recent legislation and Governor's Executive Orders. Discussion of low ratio of power within the San Jose area in relation to the area's peak demand--less than 12 % of its load provided within its area. General discussion of impacts and how they are being mitigated; for example 97% of emissions are being offset within local area. General discussion of alternative generation technologies and alternative sites reviewed by Staff. States as Staff's conclusion that the project should go forward under CEQA's override authority.
Issa Ajlouny (Intervenor)	35-48	Addresses primarily the issue of override--CEC recently has approved 8400 MW in new generation. In terms of reasons to deny certification, land use and visual are unmitigated significant impacts. Peter Macklin testified for the ISO that the MEC is worst location for the plant in Santa Clara County out of 5 possible locations; Staff concurred with this assessment that other sites were environmentally superior. The MEC site is inferior from standpoint of air quality and water supply; uncertainty of obtaining permits from the city make 2003 operation of the facility at best uncertain.
Dennis Kennedy (Mayor of Morgan Hill)	48-53	Opposes the MEC as bad land use planning and harmful environmentally to cities to the south of San Jose such as Morgan Hill; supports San Jose's land use decision. No need for the MEC since permitted projects will meet electricity demand.

*All page reference are to the March 23, 2001 reporter's transcript.

COMMENTOR	Page(s) *	COMMENTARY
		Air pollution impacts are significant based upon scientific testimony; Applicant & Staff applied improper modeling.
Mike Boyd, CARE (Intervenor)	54-66	States objections to denial of funding for CARE's participation, lack of respect for CARE's participation caused by pressure on the CEC, especially the legislature's resolution recommending override. CARE maintained in an October 2000 filing with FERC that Cal-ISO and energy producers are conspiring to drive up energy prices. FERC's response was limited, and failed to demonstrate a fiduciary duty to investigate anti-trust and civil rights violations. Existence of alternative sites avoids need for override; wants comprehensive investigation as well as alternative analysis. Override is inconsistent with democratic principles and rejects the City's vote in favor of the CVRP project.
Elizabeth Cord, Santa Teresa Citizens Action Group (STCAG) (Intervenor)	67-73	Alternative sites are environmentally superior as found by the Cal-ISO and Staff. Flawed electricity market needs fixing. The MEC will not be needed in 2003 because the state will have an abundance of new generation on-line. The MEC is flawed environmentally from an air quality standpoint and in terms of the number and quality of opposition to the proposed facility. Political pressure to approve the MEC is uniformed and inappropriate
Jeff Wade (Intervenor)	73-76	Override should not be used to rescue Applicant from venture on which it took risk and lost. The CEC should not compromise its crucial role as a neutral judge by enforcing a particular company's strategic business plan at the expense of the public.

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COMMENTOR	Page(s) *	COMMENTARY
James Cosgrove	77-79	Opposes override because of the adverse precedent it would set for local rule.
Jeanne McCauley	79-81	Resident and business owner in the proposed area who supports the MEC
John Mackay	81-83	Resident of the local neighborhood and committee-member of STCAG, who opposes the plant's location as a "choke point" for the Coyote Narrows neighborhood. Other cities such as Gilroy and Hayward have endorsed siting of MEC-type projects in land zoned for industrial use. Other alternative energy sources such as solar and wind are available technologies that the CEC should pursue.
Fred Hirsh	84-85	Favors the MEC because it is necessary for the energy stability and sustainability of San Jose and the South Bay area, particularly in light of new planned development such as BART. Believes public necessity requires building the plant so that dirtier and obsolete technology may be replaced more quickly.
Helen Serenka	85-86	Santa Teresa area resident voicing her support for the project. The need for new generation has been projected for years and the Band-Aid approach is no longer working. MEC is an excellent proposal without any adverse environmental effects.
Tony James	86-89	Local resident in favor of the project, even if the state's energy market was in good condition, because of the MEC's new combined-cycle technology that will replace old generators. He feels that there is silent, widespread neighborhood support in favor of the project from his viewpoint as a 6-year president of the local homeowner's association. He thinks the City Council did the residents a disservice when they voted unanimously to reject the project.

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COMMENTOR	Page(s) *	COMMENTARY
		Sierra Club member heartened by Sierra Club support for the project as demonstrated by their full-page ad in the New York Times.
Tad Coatsworth	90	Supports project because its needed, clean, and close to transmission and natural gas.
Libby Lucas	91-94	Opposed to the project because of a number of concerns. Water supply concerns center on the costs to bring recycled water to the facility and its potential for being borne by local taxpayers. Water quality concerns center on the air quality depositions on the watershed and reservoirs, compounded by liquefaction concerns in that the nearby town of Coyote had this problem in the 1906 earthquake. Flooding issue is a concern in that the Applicant's proposal to raise the site 5-feet is insufficient.
Beverly Mercurio	95-97	Elementary school teacher in Morgan Hill opposed to the project for reasons of health and safety to children from air pollutants—plant would be biggest polluter in the Bay Area.
Ray Bowdle	97-99	Local resident speaking in favor of the MEC; says the City's 15 to 20-year-old general plan has not kept pace with the times, and should be updated to consider power needs.
Neil Struthers	100-101	Local resident speaking in favor of the project as a price of citizenship and living in a metropolitan area. Cites the freeway in his backyard that he did not complain about as proof of his own commitment.
Doug Hanna	101-104	Believes the energy crisis is 95% contrived and governmental leaders have abdicated their responsibility to the people. Wants to build power plants where they belong and hold power providers accountable.
Laura Chilton	104-106	President of local townhome association speaking against the project because better alternative sites have been identified. Cities asthma risks, natural gas shortages, toxics, and water problems as reasons for not building the plant.

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COMMENTOR	Page(s) *	COMMENTARY
Lisa Poelle	106-109	Calpine employee and local resident who has raised with her husband a family in San Jose. Presented a list of supporters for the plant totaling over 26,000 people.
Mark Walker (Chairman, San Jose/Silicon Valley Chamber of Commerce)	109-112	Local resident in favor of the project. Cites local polls of chamber members and the general community, which show almost 80% support for the plant, and 65% in favor of CEC override. Polls suggest that City Council vote was not representative of the constituency.
Khanh Nguyen (Labor Community Action Team)	112-114	Representative of local development (400-people) several miles north of the plant who support it. They wrote to the City Council in favor of the project before the vote, but feel their voices were not heard.
John Redding (representing Silicon Valley Manufacturing Group, and General Electric)	114-118	In favor of the project both in an official capacity and as a 25-year member of the community. Feels the CEC needs to make the tough choice in favor of the project despite local opposition because the power system is teetering on the verge of collapse, and businesses are being hurt tremendously.
Dale Detwiler	118-119	55 year resident of San Jose speaking in favor of the MEC because local generation capacity is needed.
Don Wolfe (Trustee of West Valley Mission Community College District)	119-120	Favors the project for power for the local college, and quotes from a UC Davis scholar's article in favor of the project and the environmental enhancements it will provide for the local area (restoration of wetlands, Sierra Club support, no transmission towers).
Tim Alton	121-123	Argues that the MEC will destroy the Coyote Valley because it will eventually expand like Pastoria. Cites the state's potential override as a "bailout" of Calpine when it lost the City Council vote because the City found a deeper pocket to get into.
Janet Parks	123-125	20-year Santa Teresa neighborhood member opposed to the project because Calpine has a choice to build elsewhere, but the neighborhood cannot.
Mario Blaum	125-127	Spoke against the MEC on the basis that the CEC should respect the City Council's decision.

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COMMENTOR	Page(s) *	COMMENTARY
Dr. Joseph Olson	127-131	Questions fears of health effects and property value depreciation; believes the MEC is needed to help support California economy.
Maurice Webb	131-133	Local resident and techie, who commutes to jobs in cities north of San Jose. He favors the city's vision for the Coyote Valley has a high tech campus area to draw new engineering jobs into the valley. He believes that the Calpine project would destroy that vision because once new energy technology becomes available, the area surrounding the plant site will no longer be attractive for high tech jobs.
Ann Webb	133-135	22-year resident of the Santa Teresa neighborhood opposed to the MEC on environmental pollution grounds. Cites schools and neighborhoods in close proximity to the plant, other planned generation, and the current light industrial zoning of the area as reasons not to construct the plant at the chosen location.
Frank Nucci	136-141	30-year resident of the community speaking in favor of the project; believes it will not hurt property values and that, the environmental harm arising from planned development of the Coyote Valley Research Park would far surpass any of the MEC's impacts.
Karen Hardy, (City of Santa Clara Planning Commissioner)	141-144	Favors the MEC after reviewing it for a good government group in the local area. Believes that Mayor Gonzales was wrong to lead the City Council to override its own Planning Commission vote (5-2) in favor of the plant.
Mr. Abdurraheem	144-146	Spoke in favor of the MEC from the standpoint of its importance to the local economy, location, need for power, and necessity to prevent business leaving.
Raymond Lancaster	146-147	51-year resident who favors the project.
Robert Wilson	147-150	Local resident urging the CEC to deny the plant to send a signal to energy producers that it will not approve controversial plants in residential neighborhoods. CEC must respect local land use decisions, ignore political pressure, and prevent pollution and hazards.

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COMMENTOR	Page(s) *	COMMENTARY
Joe Cassisi	151-154	Plant is a good, state of the art combined cycle facility that could fit conformably in the Coyote Valley. The design works and San Jose should embrace it.
Sharron Spotts	154-157	Asthma sufferer living one-half mile from the MEC opposes the plant because there are better locations to build, even according to the ISO and the air district; also concerned about decreased land values.
Elise Engelhardt	158	Potential resident of Santa Teresa area speaking in favor of the project and its location.
Saroj Dhillon	159-160	Local resident in favor of the plant's location.
Margo Sidener (Executive Director of local county chapters of the American Lung Association; member of MEC Citizens Advisory Committee)	160-164	American Lung Association supports the project as a means to achieve a needed upgrade to California's older generation system, thus reducing reliance on more polluting plants and diesel generators.
Suzanne Wong	164-168	Santa Teresa resident who opposes the plant. She made a decision to live in the area based upon the City's general plan and feels her decision ought to be respected; for a profit company's and project posing health risks to the community should not be imposed on the community.
Arlene Runels	168-171	Local resident and teacher opposed to MEC after experiencing the "Fairchild" problem. Also, smells the garlic from Gilroy and expects to be breathing the emissions from MEC.
Surjeet Patel	171-173	Local resident opposed to the plant because of effect upon quality of life.
Paul Kirchoff	173-174	Opposes Mayor Gonzales' plan for smaller plants.
Marcy Kohler	174-176	Local homeowner and community representative opposed to the plant. Cities the retrofit of older power plants as mandated by air district rules as one reason why MEC will not serve to reduce our reliance on older facilities.
Omar Chatly	176-180	San Jose resident and Calpine stockholder who is opposed to the MEC because of its environmental and land use impacts.
Bill Smith	180-186	Spoke regarding life cycle costs, fuel cells, and electric vehicles.

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COMMENTOR	Page(s) *	COMMENTARY
John Spitzer	186-188	Santa Teresa resident who opposes the plant and feels that the air district's testing was flawed in that the tests were not performed in the valley. Cites large population of children in area as another reason not to build the plant.
Ted Cunningham	189-190	Manager of a 6 MW gas-fired cogeneration plant in San Jose who supports the project as opposed to the Cisco project which will produce more pollution from automobiles.
Robert L. Williams (Intervenor)	190-195	Believes deregulation has disrupted grid management and cites price of natural gas as a concern to the operation of gas-fired plants such as the MEC.
Mike Murphy (Intervenor)	195-197	Opposes the plant based on its location within one-half mile of local elementary schools. Endorses more study on the health impacts of such a plant close to sensitive receptors. Questions position of Cal ISO.
Scott Scholz (Intervenor)	199-204	Opposes the project and believes the CEC should respect San Jose's planning for the Coyote Valley. Under deregulation, Applicants choose their sites and accept the attendant risks. Zoning is the only protection local jurisdictions have. Calpine lost and any CEC override would defeat the purpose of the city's planning process.

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VIII. PROJECT ALTERNATIVES

Because of the degree of public interest in the matter, we have included an alternatives discussion even though we have made findings that the proposed project does not have any significant or potentially significant effect on the environment.

For projects such as the Metcalf Energy Center that have been exempted from the Notice of Intention requirements of Public Resources Code section 25540, the Commission is required to examine "...the feasibility of available site and facility alternatives... which substantially lessen the significant adverse impacts of the proposal on the environment." (20 Cal. Code of Regs., §1765; 14 Cal. Code of Regs., §15252.) This inquiry must also comply with California Environmental Quality Act (CEQA) Guidelines, which require an evaluation of the comparative merits of a range of reasonable alternatives to the project, or to its location, which would feasibly attain most of the project's basic objectives but would avoid or substantially lessen any of the significant adverse effects of the project. The "no project" alternative must also be evaluated.[148]

The range of alternatives we are required to consider is governed buy a rule of reason. This means that our consideration of alternatives may be limited to those that would avoid or substantially lessen any of the project's significant effects while still continuing to attain most of the basic objectives of the project. We need not include those alternatives whose effects cannot be reasonably ascertained and whose implementation is remote and speculative. [See, e.g., 14 Cal. Code of Regs., §15126 (d) (5).]

[148] Staff's conclusions that there are significant impacts in the areas of land use and visual resources do not bind the Commission as the decision-maker. (Pub. Resources Code, §21082.2(e*); Environmental Council v. Board of Supervisors* (1982) 125 Cal. 3d 428.) We have found, as previously explained, that the project as mitigated herein will not create any significant adverse impacts. Furthermore, although we realize we need not make findings rejecting alternatives as infeasible since all project impacts will be avoided or substantially lessened by mitigation measures (*Laurel Hills Homeowners Association v. City Council* (1978) 83 Cal. 3d 515), we nevertheless have provided this discussion to summarize the record on the topic, and because of the perceived overlap between this topic and the "override" topic.

Under both the traditional environmental impact report process and our "functionally equivalent" process, the key issue is whether the selection and discussion of alternatives fosters informed decision making and informed public participation. (*Laurel Heights Improvement Association of San Francisco* v. *The Regents of the University of California* (1988) 47 Cal.3d 376.) To put the alternatives analysis into perspective, however, it is important to recognize that alternatives are considered at two stages in our process and that differing factors come into play at each stage. Alternatives are identified, and refined, beginning with the AFC filing (Ex. 1), and continuing through the preliminary and final staff assessments (Ex. 7), and examined once again during the evidentiary hearing stage. When selecting alternatives as part of its project analysis, Staff's task is to identify a range of alternatives that will satisfy basic project objectives while reducing significant impacts. Alternatives that are not at least potentially feasible are excluded at this stage because there is no point in studying alternatives that cannot succeed. Alternatives are scrutinized to a lesser level of detail (see also, 3/14/01 RT 105-106) and the focus is on the question of whether an alternative can, as a practical matter, be implemented.

At the project approval stage, the decision-makers evaluate the relative advantages and disadvantages of the project and its impacts, as well as any alternatives deemed to be potentially feasible, as developed through the foregoing process. "Feasibility" takes into account environmental, economic, legal, social, technological, and other considerations. The result is a decision either to approve the project or adopt one of the alternatives. The Commission makes this decision after considering the entire range of issues and policies relevant to its action on the project. (See, Pub. Resources Code, §21081 (a) (3); 14 Cal. Code of Regs., §15091; see also, *Practice Under the California Environmental Quality Act* (Kosta and Zischke) Section 15.9, p. 592.) CEQA does not mandate the choice of the environmentally "best" feasible project if, through the imposition of appropriate mitigation measures, a project's impacts can be reduced to an acceptable level. (*Laurel Hills Homeowners Association* v. *City Council of City of Los Angeles* (1978) 83 Cal. App. 3d 515; see also, 3/14/01 RT 104-105.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The evidence of record contains an extensive description of both the criteria used and the reasoning for narrowing the consideration of alternatives to the MEC project. (See, Ex. 7, pp. 693-769; Ex. 164; Ex. 165.) The evidence is uncontradicted that the alternatives inquiry of record began by Staff examining and screening the feasibility of 17 other sites (3/14/01 RT 82; Ex. 7, p. 693); of these, Staff reduced the number of what it considered to be feasible alternatives to six. Staff's criteria included a consideration of the basic project objectives, the potential of an alternative to avoid or reduce potential significant impacts, as well as an alternative site's suitability in terms of size, configuration, infrastructure, and land use consistency. (3/14/01 RT 232.) In assessing the scope of feasible alternatives, Staff also considered various technological alternatives such as demand side management, distributed generation, renewable energy sources, fuel cells, and other fossil-fueled systems. This inquiry also included alternative generation capacities and alternative sites identified by Applicant and others[149]. (Ex. 7, pp. 697-700; Ex. 164.) Furthermore, Staff explained its rationale in determining that a combination of smaller projects would not constitute viable alternatives to the proposed project.[150] (3/14/01 RT 124-126, 159, 230-231.) No other party credibly advanced the existence of any alternative not otherwise considered in the evidence of record.

Staff characterized the project's objectives as: being online as soon as possible; providing Bay Area electric grid reliability benefits; and mitigating transmission line congestion in the area. (3/13/01 RT 185-186; 3/14/01 RT 110-111.) In view of these

[149] The City of San Jose cross-examined Staff's witnesses on this matter. (See, 3/14/01 RT 112--142.) The City (and the other parties) did not, however, seek to affirmatively establish that an alternative technology such as distributed generation or self-generation would in fact be sufficient to meet project objectives or to adequately serve area loads.

[150] The MEC is a baseload plant which would run approximately 8000 hours per year. A smaller plant such as a "peaker" would typically run 500 or fewer hours per year and is not designed to be as efficient as a baseload plant, since one would use about 50 percent more natural gas. (3/14/01 RT 235-237.) Moreover, a combination of theoretical alternatives such as peakers, distributed generation, and other technologies could likely create more impacts than the MEC depending upon whether or not they shared infrastructure. (3/14/01 RT 159, 230-231, 251.) Other alternatives, such as possible expansion at Gilroy,

objectives and its conclusion that the project would result in significant land use and visual impacts (as discussed in the appropriate portions of this Decision), Staff identified the following alternative project sites summarized below and depicted on **ALTERNATIVES Figures** 1 through 4.

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are not considered as viable alternatives because of site limitations and insufficient transmission capacity. (3/14/01 RT 165-166.)

ALTERNATIVES Figure 1
Regional Map of the Six Alternative Sites that Qualified for Detailed Evaluation

Source: Exhibit 7.

ALTERNATIVES Figure 2
Staff's Alternative Sites Alt-1 and Alt-2

Source: Exhibit 7.

ALTERNATIVES Figure 3
Staff's Alternative Sites Alt-3 and Alt-4

Source: Exhibit 7.

ALTERNATIVES Figure 4
Staff's Alternative Sites Alt-5 and Alt-6

Source: Exhibit 7.

Staff believes that any of its selected alternatives will, on balance, avoid or substantially reduce the putative significant impacts attributable to the loss of prime agricultural land and the creation of significant visual impacts. (3/13/01 RT 187.) Staff also believes that a project located at any of its alternative sites would provide transmission system benefits, although to differing degrees. (3/13/01 RT 186.) Finally, Staff acknowledges that locating the proposed project at one of the alternative sites would likely mean that the online date of the MEC would be delayed.[151] (3/13/01 RT 186.) These matters are summarized below.

Alternative 1 and Alternative 2

These sites are to the north of Highway 237 and to the east of Zanker Road in the north San Jose area. They are on unincorporated County property and adjacent to City property. (3/13/01 RT 183.) Both sites are currently zoned as light industrial, and would require a General Plan amendment and a zoning change in order to accommodate a power plant as an allowable use.[152] (3/13/01 RT 191.) Both sites would result in the conversion of prime agricultural land to other uses, 13 acres for Alternative 1 and 30 acres for Alternative 2. (3/13/01 RT 190, 340.) Use of either of these sites by the MEC would also require construction of the Los Esteros Substation as a necessary precondition. (Ex. 153, pp. 40-41.)

The evidence of record further indicates that placement of the MEC at Alternative Sites 1 or 2 would result in certain benefits to the electrical system. For example, when compared with the proposed site, comparable generation at Sites 1 or 2 would result in more transmission line loss savings, a reduction in reliability must run concerns, and

[151] We note that the record contains a discussion of various timing assumptions as well as the availability of generation hypothetically coming online pursuant to a six-month licensing process. (See, 3/13/01 RT 327-333, 395-398.) There is no persuasive showing that these possibilities lead to anything other than presently speculative projects. [151] The evidence indicates that Staff believes these sites are "available" since Applicant had at one time submitted a request for a General Plan amendment. (3/13/01 RT 301.) The evidence also indicates however, that Applicant subsequently withdrew this request. (3/13/01 RT 310.)

[152] The evidence indicates that Staff believes these sites are "available" since Applicant had at one time submitted a request for a General Plan amendment. (3/13/01 RT 301.) The evidence also indicates however, that Applicant subsequently withdrew this request. (3/13/01 RT 310.)

also provide Bay Area grid reliability benefits. (3/13/01 RT 204-205, 385-386; 3/14/01 RT 178.) In terms of electrical system performance measures, the evidence is consistent that locating the MEC at Alternative Sites 1 or 2 would be better than or essentially the same as locating the MEC at the site proposed. (3/13/01 RT 205-206.) The evidence also establishes, however that interconnection of the MEC at either of the sites would likely result in an additional cost of up to $42 million, due to the need to upgrade the existing Newark Substation. (3/13/01 RT 206-207.) Moreover, location of the MEC at Alternative Sites 1 or 2 would not provide a comparable degree of relief to the problem created by thermal overloads on the Moss Landing 230 kV line. (3/13/01 RT 229 -231.)

Overall, Alternative Sites 1 and 2 would, in Staff's view, avoid significant direct visual impacts. (3/13/01 RT 195-200, 314; see also, pp. 285-289; Ex. 165, pp. 2-4.) The Staff testimony further indicates, however, that the Los Esteros Substation (which would be necessary for use of the site) and related transmission lines would likely cause significant adverse visual impacts, and that a power plant at Alternatives 1 or 2 would contribute to a significant cumulative visual impact. (Ex. 7, pp. 750-752.) According to Applicant's expert testimony, the visual consequences of developing the MEC at Alternative Site 1 would expose travelers along Zanker Road and Highway 237 to views which would become more industrialized and adversely changed in character from the current open, rural-like panorama.[153] (Ex. 153, pp. 38-42.) Furthermore, use of Alternative Site 1 could have impacts for users of segments of the proposed Bay Trail. (Ex. 153, pp. 39-41.) Similarly, use of Alternative Site 2 would result in a degraded visual quality to users of area roads and the proposed trail because of the power plant, the Los Esteros Substation, and associated transmission towers and lines. (Ex. 153, pp. 41-42.)

[153] Applicant's testimony on alternatives was received through stipulation by all parties present. (3/13/01 RT 166-168.)

Alternative 3 and Alternative 4

Both of these alternatives are located in the City of Fremont, in areas designated for general industrial use. (3/13/01 RT 184; Ex. 165.) Staff indicates that both sites are available, based upon conversations with real estate representatives. (3/13/01 RT 303-304.) Placement of the MEC at either of these sites would be in conflict with applicable local ordinances since a power plant would violate the applicable height restriction. (3/13/01 RT 340-341.) Staff does not believe, however, that these applicable development restrictions are as strict as those which would apply to the proposed location for the MEC. (3/13/01 RT 191-193.) Use of either of these sites would not result in the conversion of agricultural land.

The evidence of record further indicates that placement of the MEC at Alternative Site 3 or 4 would result in certain benefits to the electrical system. In terms of electrical system performance measures, the evidence shows that use of these sites would mitigate transmission system congestion, provide a higher degree of line loss savings, and generally benefit the interconnected grid. (3/13/01 RT 186, 204-205, 385-386, 399-400; 3/14/01 RT 178.) However, interconnecting at these sites would also require upgrading the Newark Substation making these sites the least preferable in terms of interconnection costs. (3/13/01 RT 205-206, 386-387.)

In Staff's estimation these sites are in areas of already degraded visual quality and therefore the addition of a power plant would not create or contribute to a significant adverse visual impact. (3/13/01 RT 199-204, 314; Ex. 165.) Staff concluded that Alternative Site 3 is large enough to accommodate the MEC project and that sites 3 and 4 are otherwise the environmentally preferable sites. (3/13/01 RT 315-316; 3/14/01 RT 103-105; Ex. 165, p. 1.)

Applicant provided evidence that Alternative Site 3 is physically too small and too irregularly shaped to accommodate plant facilities, setbacks, and landscaping. Furthermore, Applicant provided photo simulations indicating that any power plant at

this location would result in a direct and significant impact to the views from nearby residences, as well as to users of a segment of the proposed Bay Trail. (Ex. 153, p. 42.) Applicant further notes that use of Alternative Site 4 would create undesirable views from South Fremont Boulevard, which is a city and county designated scenic route. Applicant characterizes a power plant at this site as completely changing the existing open character, dominating views from the adjacent scenic route, blocking views of Mission Peak, and significantly interfering with the existing panoramic view of hillsides to the east. (Ex. 153, pp. 42-43.)

Alternative 5 and Alternative 6

These potential sites are adjacent to PG&E's Tesla Substation in eastern Alameda County. (3/13/01 RT 184; Ex 165.) The area is designated as large parcel agricultural, and is currently used for grazing. Staff does not believe that use of these lands would constitute a significant impact by converting farmland to other uses. Use of these sites could, however, result in significant adverse impacts to biological and water resources. (3/13/01 RT 191, 226-227, 340-341; Ex. 7, p. 759.) These impacts are based, respectively, on potential adverse effects upon listed species and the unavailability of recycled water. (Ex. 7, pp. 721, 745.) Staff indicated that it believed these two sites would be available for use based upon conversations with local realtors. (3/13/01 RT 304.)

These sites provide the least potential for electrical system benefits. A power plant located at either of these sites would provide a lesser degree of line loss savings, a somewhat lesser benefit in terms of grid system improvements such reactive margins and reliability must run considerations, and an overall decrease in benefit to electrical system performance when compared with a power plant at the proposed location. (3/13/01 RT 204-205, 399-400; Ex. 7, p. 710.) Staff believes, however, that the use of either Alternative Site 5 or Alternative Site 6 would avoid the potential for direct or cumulative significant adverse visual impacts, even without mitigation. (3/13/01 RT 204; Ex. 165, p. 6.)

Even accounting for the existing large concentration of electrical infrastructure elements at these two sites, Applicant notes that there are still associated visual issues dealing principally with the views from Patterson Pass Road, a County-designated scenic route, as well as with views from Midway Road and local rural residences located within 0.5 to 0.75 mile of the sites. (Ex. 153, p. 43.)

No Project Alternative

The evidence of record contains a detailed examination of the "No Project" Alternative. (See, e.g., Ex. 7, pp. 759-767.) Under this scenario, the proposed project site would remain available for campus industrial development. (Ex. 153, p. 43.) No identified development would currently take place, although this would likely only result in a deferral of eventual change. Since all impacts of the MEC would be mitigated to below levels of significance, Staff opined that the no project alternative would only prevent the creation of what it considers adverse impacts in the context of visual resources and land use considerations.

Without the proposed project, no level of benefit/improvement to the electrical system would occur. In other words, generation needed to serve San Jose's loads would likely be delayed, as well as the attendant generalized electrical system benefits summarized above. This could lead to the necessity for increased use of more polluting generation, the need to more quickly construct other facilities, or the increased likelihood of blackouts. (Ex. 7, pp. 761-767.)

During the hearings, Staff presented testimony that power outages (potentially caused by an inadequately reliable electrical system) could result in significant public health and safety impacts. These would most likely result from injury accidents caused by malfunctioning traffic signals, falls, and increased mortality (especially among the elderly) from exposure to heat in the absence of air conditioning. (3/13/01 RT 216-221, 419-422; 3/14/01 RT 199-203; Ex. 166.) Furthermore, more frequent use of backup

diesel generators and increased air emissions would likely result. Staff considers these emissions a health hazard (3/13/01 RT 209-210), although any mortality associated with these emissions would be much less than any potential mortality associated with heat waves (3/14/01 RT 207). In Staff's opinion, there is a higher risk of load shedding or catastrophic transmission outages during the hottest days of the year, and there is less risk of these events with the MEC facility than there is without it. (3/13/01 RT 220-222.) Other parties challenged Staff's witness on these conclusions and on the materials which form the underlying basis for these conclusions; no party, however, introduced independent contradictory evidence.

In reviewing the evidence and other information of record pertinent to this topic area, we are struck by a statement uttered by one of the witnesses: "...adding new generation to the grid is a very good thing, especially...right now." (3/14/01 RT 180: 18-21.) No one effectively disputes this statement. To do so would ignore both the present day realities concerning the State's energy situation, as well as an express legislative finding recognizing that electrical energy is essential to the health, safety, and welfare of the people of the State and to its economy. (Pub. Resources Code, § 25001.)

Rather, the intense level of disagreement that has surfaced throughout these proceedings concerns *where* this generation should be located. From an electrical perspective, and not considering a time factor, the Cal-ISO would prefer generation at Newark or Los Esteros if given only one choice. (3/14/01 RT 174-175; see also, 3/13/01 RT 407-408.) Upon further examination, however, it becomes apparent that the Cal-ISO, from an electrical system perspective, would prefer generation both at Newark and at Metcalf (3/14/01 RT 237-238, 267-268), or at Metcalf and at one of the alternative sites (3/13/01 RT 234-238). The reason for this is both the need for local area generation and the “unique benefits" which accrue to the electrical system depending upon a project's location. (3/13/01 RT 227-230.)

We have, however, only the Metcalf project before us, and it is only that project which currently appears reasonably likely of being online in the near-term future.[154] Furthermore, as we have explained in previous portions of this Decision, substantial evidence supports our conclusions that all impacts associated with the MEC will be mitigated to below a level of significance. There is, therefore, no credible reason to entertain a suggestion that the proposed site is unsuitable and that it is somehow preferable or necessary to relocate the project.

Even if one disagrees with our conclusions that the project will not create significant adverse impacts in the land use and visual areas, we nevertheless believe that there is residual substantial evidence supporting the proposition that none of the identified alternatives would reduce or avoid any impacts created by the MEC, at least without creating a similar level of impact elsewhere. Sites 1 or 2 do not presently have necessary infrastructure, such as the Los Esteros substation. Development of this infrastructure would create significant adverse visual impacts. A power plant would contribute to resultant cumulative impacts. Use of the "environmentally preferable" Alternative Sites 3 or 4 would still conflict with applicable local development restrictions. Assuming, for purposes of argument, that these height restrictions could be routinely handled (and that site 3 is large enough to accommodate plant facilities and the attendant setbacks and landscaping), the decision would then rest on whether use of either of these sites would create a lesser (and insignificant) level of visual intrusion. Given the inherently subjective nature of this determination, we believe it would be reasonable to conclude that the impact to the views from nearby residences and the local designated scenic route would be sufficient to change the existing open character, dominate and block local views and, consequently, create a significant visual impact. The end result would thus be a transference, rather than an avoidance, of an impact.

[154] Various parties have argued stridently in their post-hearing submissions that the Staff was biased in its analysis (see, e.g., Intervenor Aljouny's Opening Brief on Alternatives, Visual and Override (April 12, 2001), pp. 1-2; STCAG's Reply Brief on Group 3 Topic Areas (April 24, 2001), pp. 9-11), while also urging that we accept Staff's position that the proposed project would create significant adverse impacts and that alternative locations are environmentally preferable. (See, e.g., Intervenor Ajlouny's Opening Brief on Alternatives, Visual and Override (April 12, 2001), pp. 2-3; STCAG's Opening Brief on Group 3 Topics (April 12, 2001), pp. 43-49.) We further note that Staff seems to at least somewhat contradict its oral

Sites 5 or 6 potentially adversely affect sensitive species and would not allow the use of recycled/reclaimed water, as well as provide the lowest level of electrical system benefits.

Finally, we note that much attention has been given to the effects of generation upon the local and the Bay Area electrical systems. The evidence clearly establishes that there are balances and trade-offs to be made. While it is legitimately arguable that placement of generation at another site would benefit the electrical system more in certain respects than would placement at the proposed site, it is simply not arguable that the MEC would not provide electrical system benefits. Furthermore, the simple fact is that the MEC is the sole generation project which possesses the potential to provide these benefits in a reasonably ascertainable time period.

We believe the project at the currently proposed site represents an acceptable balance of all competing considerations. The use of an alternative site is unnecessary since it would not avoid any significant adverse impact; moreover, the evidence simply does not convince us that any such use would be feasible.

FINDINGS and CONCLUSIONS

Based upon the weight of the evidence of record before us, we make the following findings and reach the following conclusions:

1. The evidence of record contains an analysis of a reasonable range of alternatives to the proposed project, including alternative locations, alternate technologies, demand-side management, distributed generation, renewable energy sources, and smaller generating capacities.

2. The project as proposed would not create any significant adverse environmental impacts. Therefore, there are no significant adverse impacts which any of the identified alternatives would avoid.

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testimony by characterizing all six alternative sites as having “potential feasibility issues”. (Staff Brief on Override (April 12, 2001), p.9.)

3. It is speculative whether it would in fact be feasible for the project to use any of the identified alternative sites.

4. Location of generation at alternative sites 1, 2, 3, or 4 would result in a better or a comparable level of electrical system performance benefits when compared to placement at the proposed site.

5. Use of alternative sites 1 or 2 would require a General Plan Amendment, construction of necessary infrastructure such as the Los Esteros Substation, and would likely cause significant visual impacts.

6. Use of alternative sites 3 or 4 would not conform with the applicable development standards regarding height restrictions.

7. Use of alternative sites 5 or 6 would result in the least degree of electrical system benefits, and would potentially cause significant impacts to listed species and water resources.

8. There is substantial credible evidence indicating that use of alternative sites 3 or 4 would result in significant adverse visual impacts.

9. A power outage can result in significant adverse impacts to public health and safety.

10. The potential for a power outage is less with the proposed project than without it.

11. The “no project” alternative would not avoid the creation of significant adverse environmental impacts.

12. The “no project” alternative would not provide local area generation and electrical system reliability benefits.

13. The MEC project will provide local area generation and electrical system benefits.

14. Use of an alternative site would not meet the proposed project’s objective of being online in the near-term future.

15. The MEC is the only project identified and reasonably likely to be online in the near-term future which will provide 600 megawatts of local area generation and attendant electrical system benefits.

We therefore conclude that we have considered a reasonable range of alternatives to the proposed project in compliance with the requirements of the Warren-Alquist Act, the

California Environmental Quality Act, and their respective implementing regulations, and that the proposed project location is acceptable.

IX. OVERRIDE

Conceptually, there are two types of "overrides" which may come into play in a power plant siting case. The first arises under CEQA. In this instance, where a project will result in significant environmental impacts that cannot be mitigated, an agency cannot approve that project unless it finds that such impacts " are acceptable due to overriding concerns". [14 Cal. Code of Regs., § 15092 (b)(2)(B).] In arriving at these overriding considerations, the decision-making agency must balance, as applicable, "the economic, legal, social, technological, or other benefits of a proposed project against its unavoidable environmental risks when determining whether to approve the project." [14 Cal. Code of Regs., section 15093 (a).] If, in the agency's judgment, the benefits of the proposed project outweigh the adverse environmental effects, such effects may be considered "acceptable", and the agency may approve the project.

Second, in the case of power plant licensing, applicable law provides for another type of override. In this instance, where the Commission considers the licensing of a project that does not conform to state or local laws, ordinances, regulations, or standards (LORS), the Commission cannot license that project unless it finds (or "determines") "that such facility is required for public convenience and necessity and that there are not more prudent and feasible means of achieving such public convenience and necessity." (Pub. Resources Code, § 25525.) This determination must be made based on the totality of the evidence of record and consider environmental impacts, consumer benefits, and electric system reliability. In essence, the lack of conformity of a project with LORS is to be balanced against its benefits.

Although the statutory scheme requires separate and different findings, both types of "overrides" require a similar balancing of benefits and impacts, as well as the consideration of feasible alternatives. (See, Staff's Brief on Override (April 12, 2001), pp. 2-3.) We address these matters in the following discussion.

CEQA OVERRIDE

As we have explained in the preceding discussion on **Alternatives**, we have concluded that the MEC will not create any significant adverse environmental effects. We have also, in each topic area, summarized and evaluated the evidence of record and explained our reasoning as to why we were not persuaded that the project would in fact create significant adverse impacts.

Even were we to have concluded differently concerning the significance of impacts as urged by Staff in the **Land Use** or **Visual Resources** areas, or by other parties in other areas, the evidence conclusively establishes the benefits attributable to the project, and does not persuasively suggest that the MEC could create an impact so significant as to prevent it being constructed and operated. Therefore, we nevertheless would be compelled by the weight of the evidence of record to find and conclude that the MEC project provides, on balance, a level of benefits sufficient to support findings of "overriding considerations." This stems largely from the undisputed facts that the project will result in transmission line loss savings, relieve transmission congestion, benefit the performance of the south Bay and Bay Area electrical systems, and provide new generation to the San Jose area in a timely manner. Moreover, recent Executive Orders issued by the Governor clearly indicate that State policy currently favors the construction of additional generating capacity. Furtherance of these policy considerations also supports override findings required under CEQA.

SECTION 25525 (LORS OVERRIDE)

Public Resources Code section 25525 provides in pertinent part:

> The commission shall not certify any facility when it finds... that the facility does not conform with any applicable state, local, or regional standards, ordinances, or laws, unless the commission determines that such facility is required for

> public convenience and necessity and that there are not more prudent and feasible means of achieving such public convenience and necessity. In making the determination, the commission shall consider the entire record of the proceeding, including, but not limited to, the impacts of the facility on the environment, consumer benefits, and electric system reliability.

This statutory provision, especially when read in conjunction with other provisions of the Public Resources Code (see, e.g. sections 25001, 25005, 25006; 3/14/01 RT 9-12) conclusively establishes that the Legislature has declared that the siting of thermal power plants in excess of 50 megawatts is a matter of state interest.[155] For present purposes, this means that the Commission has the authority to supercede the regulatory capacities of other governmental jurisdictions (such as the City of San Jose) and, in accordance with section 25525, license a power plant even though it may not comply with all state or local LORS.

The statute recognizes that a LORS noncompliance does not necessarily equate with the creation of a significant adverse environmental impact under CEQA.[156] The emphasis is simply on a different concern. In order to address the override/noncompliance issue, section 25525 directs us to determine two things: whether a project is required for "public convenience and necessity" and whether there are not "more prudent and feasible means of achieving such public convenience and necessity."[157] These are discussed below.

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[155] Various participants in these proceedings are apparently reluctant to accept this characterization. (See, e.g. 3/14/01 RT 30-37; Intervenor Garbett's Brief on Override (March 23, 2001), p. 4; Intervenor Williams' Opening Brief on Group 1&2 Topics (March 23, 2001), p. 2; Intervenor STCAG's Brief on Override (April 12, 2001), p. 54.) Applicant's post-hearing submissions contain a detailed recitation of the legislative history which led to the creation of the Warren-Alquist Act and the specification of the state interest in power plant licensing. (See, e.g. Applicant's Group 3 Opening Brief (April 12, 2001), pp. 3-127 to 3-132; Reply Brief on Group 3 Topics (April 24, 2001), pp. 3-25 to 3-29.)

[156] The City acknowledges this in its Opening Brief on Group 1 and 2 Topics (March 23, 2001), p. 6.

[157] Section 25525 specifies that we examine the entire record, and also specifies that we make our determinations based upon the effects of the facility on the environment, consumer benefits, and electric system reliability. We also note that we are not limited to only these three factors, and believe the criteria set forth in the Commission's Decision on the Geysers Unit 16 project

Public Convenience and Necessity

While there is no judicial decision interpreting section 25525, numerous decisions address the phrase "public convenience and necessity" as it appears in Public Utilities Code section 1001. This phrase is used in a similar context in both statutes and, absent evidence of legislative intent to the contrary, is presumed to have a similar meaning for present purposes. *(Building Material & Construction Teamsters' Union v. Farrell* (1986) 41 Cal.3d 651, 665.) It is well-settled by judicial decisions on Section 1001 that "public convenience and necessity" has a broad and flexible meaning, and that the phrase "cannot be defined so as to fit all cases." (*San Diego & Coronado Ferry Co. v. Railroad Commission (1930)* 210 Cal. 504*.)* In this context, "necessity" is not used in the sense of something that is "indispensably requisite." Rather, any improvement which is highly important to the public convenience and desirable for the public welfare may be regarded as necessary. It is a relative rather than absolute term whose meaning must be ascertained by reference to the context and the purposes of the statute in which it is found. (See, *San Diego Ferry* at p. 643*.)*

In assessing whether or not the MEC is required for public convenience and necessity, we must logically first ascertain whether this project is reasonably related to the goals and policies of our enabling legislation. The Warren-Alquist Act expressly recognizes that electric energy is essential to the health, safety, and welfare of the people of California, and to the state's economy. Moreover, the statute declares that it is the responsibility of state government to ensure that the state is provided with an adequate and reliable supply of electrical energy. (Pub. Resources Code, § 25001.)

The evidence of record conclusively establishes that the MEC project will generate electrical energy, and that that energy will be consumed in the local

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remain relevant. (Docket No. 79-AFC-5 (Sept. 30, 1981), Pub. No. P800-81-007; see, pp. 104-105.)

area. The evidence also establishes that the San Jose area uses much more electrical energy than is generated locally, that there is consequently a need for more generation to address both demand and reliability concerns, and that the hallmark industries in the San Jose/Silicon Valley area are heavily dependent upon a reliable and adequate supply of electrical energy.

The statute does not, however, focus on public convenience and necessity solely in a limited geographical context. Rather, the focus is on electricity's essential nature to the welfare of the state as a whole. (3/14/01 RT 92-93.) This logically not only includes a specific area, but also recognizes the interconnected nature of the electrical grid and the interdependence of the people and the economy in one sector of the state upon the people and the economy in the balance of the state.[158] Recent proclamations, legislative actions, and gubernatorial Executive Orders all emphasize the need for increased supplies of electrical energy throughout the state. We believe the conclusion is inescapable that electrical energy is essential to the functioning of contemporary society. Since the MEC will provide a portion of the electrical energy supply essential to the well-being of the state's citizens and its economy, we conclude that this project is required for “public convenience and necessity" within the meaning of section 25525.

[158] Section 25525 mentions the phrase "public convenience and necessity" twice. The first time it is mentioned, it is clear that one of our tasks is to determine whether a facility is required for an unqualified type of public convenience and necessity. The second time the phrase appears in the statute is in the context of our charge to determine "that there are not more prudent and feasible means of achieving *such* public convenience and necessity" (emphasis added). The meaning of the qualifying word "such" in this context has been subject to debate. (Compare Applicant's Opening Brief on Group 3 Topics (April 12, 2001), p. 3-140 with Intervenor Ajlouny’s Reply Brief on Override (April 24, 2001), p. 7.) We interpret the statute to require that we determine whether there are more prudent and feasible means of achieving a similar public convenience and necessity.

More Prudent and Feasible Means

There is no clear or meaningful distinction between the words "prudent" and "feasible" as used in section 25525.[159] Under the Warren-Alquist Act, the existence of a "prudent and feasible" means of achieving the public convenience and necessity does not prevent an override; only the existence of a "more prudent and feasible" means prevents the Commission from overriding local LORS.[160] In making this determination, we must balance a variety of relevant factors, including the project's impacts upon the environment, consumer benefits, and electric system reliability as specified in the statute, while giving substantial but not overwhelming weight to avoiding LORS noncompliance. We have essentially performed an analogous exercise in our **Alternatives** discussion. However, in order to more specifically address the enumerated statutory factors, we will briefly supplement it here.

Environmental Impacts. As explained in each of the preceding portions of this Decision, we have found that the MEC will not create any significant direct or cumulative adverse environmental impacts. Furthermore, we have specified numerous mitigation measures and Conditions of Certification to ensure that all of the project's impacts are reduced to below levels of significance. In some areas, we have imposed additional mitigation to ensure that the project will comply with applicable standards. In others, we have chosen between differing ways of mitigating identified impacts. In each instance we have based our

[159] We note that CEQA defines "feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors." (Pub. Resources Code, section 21061.1; see also, 14 Cal. Code of Regs., section 15361 which adds "legal" to the list of factors.) However, even using the CEQA definition, it appears that any "prudent" alternative would have to be "feasible" -- or, in other words, any alternative that is *not* "capable of being accomplished in a successful manner with in a reasonable period of time" would not be "prudent."

[160] This is different from the CEQA standard which, as we have explained previously, does not require choice of the *best* project alternative as long as a project is acceptable. In the override circumstance, the statute requires that any alternative means of serving public convenience and necessity be *better* than that proposed. (3/14/01 RT 83-85; Applicant's Opening Brief on Group 3 Topics (April 12, 2001), pp. 3-135; Reply Brief (April 24, 2001), p. 3-30.)

determinations on what we perceive to be the persuasive weight of the evidence of record.

Consumer Benefits. Uncontested evidence of record establishes that the MEC will provide consumer benefits in the form of lower energy prices. (1/30/01 RT 56-68; Ex. 10.) The evidence quantifies these benefits in a range of $1.2 billion to $1.8 billion between 2003 and 2010. (See, Applicant's Opening Brief on Group 2 Topics (March 23, 2001), pp. 2-11 to 2-12.) The MEC will also reduce transmission losses, and result in a savings of from $23 to $34 million (using 2005 as a target year). The evidence further establishes that the MEC will displace approximately 945 MW of reliability must run generation, saving approximately $11.4 million per year. (See, Applicant's Opening Brief on Group 3 Topics (April 12, 2001), pp. 3-136 to 3-137; Staff's Brief on Override (April 12, 2001), pp. 5-6.)

Electric System Reliability. As we have discussed previously, the evidence of record is unrefuted in establishing that the MEC will result in benefits insofar as the factor of electric system reliability is concerned. In the **Local System Effects** portion of this Decision we have summarized the evidence indicating that the MEC can be interconnected to the existing system without creating adverse reliability implications, and that the project will serve local loads, allow more power to flow from the Moss Landing generator into the local area, reduce San Jose's vulnerability to catastrophic outages by providing real and reactive power, and reduce the occurrence of voltage collapse problems. (Ex. 137, pp. 6-8; see, Applicant's Opening Brief on Group 3 Topics (April 12, 2001), pp. 3-136 to 3-137; Staff's Brief on Override (April 12, 2001), pp. 4-5.)

These matters are not seriously disputed. Rather, as with the arguments on alternative site locations, the dispute centers on the contentions that a project at the proposed location will not deliver the optimum level of electrical system benefits when compared with a project at a different location. These contentions

are essentially the same as those in the **Alternatives** discussion and need not be repeated. What is most pertinent, for present purposes, is whether or not we are convinced that there is a more prudent and feasible means, when compared with the MEC, of achieving similar public convenience and necessity.

We conclude that the totality of the evidence of record establishes that there is not. As summarized in the **Alternatives** and **Local System Effects** portions, a project located at sites 1 or 2 would also require a General Plan amendment and a zoning change, and would not be located in the natural service area for the Metcalf substation. Projects at these sites would not solve the Moss Landing 230 kV line overload problems, nor would they allow for an increase in output of the Moss generator during emergency conditions. (Ex. 153.) Alternative sites 5 and 6 would not allow for the use of reclaimed/recycled water, and may cause significant adverse impacts to listed species. Furthermore, the evidence conclusively establishes that use of either of these sites would not result in a comparable benefit to electrical system performance because of the lessened level of line loss savings and a lesser degree of grid system improvements such as reactive margins and reliability must run considerations. Even use of alternative sites 3 or 4 would, in our estimation, likely create significant adverse visual impacts as well as inconsistencies with existing land development standards. Finally, we note that the evidence indicates that timing is also a critical consideration.

The net result of the potential use of any of the alternative sites thus appears to us to be reasonably likely to create potential problems at least comparable to those encountered by the proposed project. Moreover, the evidence shows that the area's supply-demand imbalance and the need to augment electrical system reliability in the south Bay and the greater Bay Area require prompt action. The evidence establishes that the MEC is a substantial positive step in this regard, and is in fact the only identified major generation project capable of becoming reality within the near-term future. Development of a hypothetical project at an

alternative site would logically, at a minimum, postpone any system benefits offered by the MEC. On balance, these circumstances do not, in our estimation, equate with a more prudent and feasible means of achieving public convenience and necessity.

The record adequately reflects that the Applicant and the Staff have repeatedly (and with only somewhat limited success) discussed methods of satisfying applicable local LORS. Additionally, we have imposed various measures to attempt to bring the project into compliance with applicable LORS. Nevertheless, the fact remains that the MEC does not comply with the City's General Plan and zoning ordinances. Various other less significant noncompliances also apparently exist[161] although, as noted in other portions of this Decision, the record only suggests, rather than definitively establishes, the precise list of these noncompliances.

Therefore, we find it necessary at this point to do two things. First, we specifically override the provisions of the General Plan and zoning ordinances which would prohibit construction and operation of the MEC project at the proposed location. Second, we direct the Applicant and the Staff to provide, in consultation with the City and the County, a specific and complete listing (preferably stipulated) of all other applicable LORS with which the MEC remains in noncompliance after considering the various determinations we have reached in this Decision. This listing shall be included in the parties' comments on the PMPD.

FINDINGS AND CONCLUSIONS

Based upon the totality of the evidence of record, and specifically considering the factors enumerated in Public Resources Code section 25525, we make the following findings and reach the following conclusions:

[161] See the **Biological Resources**, **Land Use**, and **Visual Resources** portions of this Decision.

1. The MEC is required for public convenience and necessity.

2. We have assessed whether there are more prudent and feasible means of achieving public convenience and necessity by balancing a variety of factors, including the project's environmental impacts, consumer benefits, and electric system reliability.

3. The MEC will not create significant direct or cumulative adverse environmental impacts, will result in economic savings to electricity consumers, and will provide performance benefits to the south Bay and the general Bay Area electrical systems.

4. There are no more prudent and feasible means of achieving public convenience and necessity similar to that provided by the MEC.

5. Applicant and Staff have met with local jurisdictions in an attempt to resolve LORS noncompliances.

6. We have imposed various measures through the Conditions of Certification contained in this Decision to avoid noncompliances with applicable LORS and to bring the project into compliance with applicable LORS.

7. The MEC project does not comply with provisions of the City's General Plan and zoning ordinances.

8. We have also determined that the MEC does not apparently comply with LORS as discussed in the **Biological Resources**, **Land Use**, and **Visual Resources** portions of this Decision.

9. The determinations we have made in this Decision likely affect the project's compliance status with other applicable LORS; the record does not currently reflect with certainty a complete listing of applicable LORS with which the project does not comply.

Therefore, we conclude that it is necessary to override the General Plan and zoning ordinance provisions as provided in Public Resources Code section 25525, as well as other applicable LORS which have yet to be completely and specifically identified.

Appendix A

LORS: Laws, Ordinances, Regulations, and Standards

AIR QUALITY

FEDERAL

The federal Clean Air Act requires any new major stationary sources of air pollution and any major modifications to major stationary sources to obtain an air pollution permit before commencing construction. This process is known as New Source Review (NSR). Its requirements differ depending on the attainment status of the area where the major facility is to be located. Prevention of Significant Deterioration (PSD) requirements apply in areas that are in attainment of the national ambient air quality standards. The Non-attainment area NSR requirements apply to areas that have not been able to demonstrate compliance with national ambient air quality standards. The entire program, including both PSD and Non-attainment NSR permit reviews, is referred to as the federal NSR program.

Title V of the federal Clean Air Act requires states to implement and administer an operating permit program to ensure that large sources operate in compliance with the requirements included in the Code of Federal Regulations 40, part 70. A Title V permit contains all of the requirements specified in different air quality regulations which affect an individual project.

The U.S. Environmental Protection Agency (EPA) has reviewed and approved the Bay Area Air Quality Management District's (BAAQMD) regulations and has delegated to the BAAQMD the implementation of the federal PSD, Non-attainment NSR, and Title V programs. The BAAQMD implements these programs through its own rules and regulations which are, at a minimum, as stringent as the federal regulations.

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 causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, response, health, or safety of any such person or the public, or which causes, or have a natural tendency to cause, injury or damage to business or property."

The state's Air Resources Board (ARB) promulgates state-level ambient air quality standards, which are, in general, more stringent than the national ambient air quality standards. Table 5.2-2 in the Application for Certification (Exhibit 1) presents a summary of the current national and state ambient air quality standards.

LOCAL

The MEC is subject to various BAAQMD rules and regulations. Regulation 2, Rule 2 is the more relevant local air quality rule for this project. This rule, entitled "New Source Review," applies to all new and modified stationary sources. It defines requirements related to Best Available Control Technology (BACT), offsets, emission calculation procedures to estimate bankable emission reduction credits (ERCs), and requirements for the federal acid rain program.

A more complete discussion of the applicable rules and regulations can be found in section 8.1 of Exhibit 1, and various air quality data responses. An in-depth discussion how the Metcalf Energy Center will comply with all applicable rules and regulations is provided in the BAAQMD's Final Determination of Compliance (FDOC; Exhibit 141).

BIOLOGICAL RESOURCES

FEDERAL

ENDANGERED SPECIES ACT OF 1973

Title 16, United States Code (USC), section 1531 et seq., and Title 50, Code of Federal Regulations, part 17.1 et seq., designate and provide for protection of threatened and endangered plant and animal species and their critical habitat.

MIGRATORY BIRD TREATY ACT

Title 16, United States Code, sections 703 - 712, prohibits the take of migratory birds.

CLEAN WATER ACT

33 USC, section 404 et seq., prohibits the discharge of dredged or fill material into the waters of the United States without a permit. Nationwide permit (NWP) 7 is required to construct an outfall structure and the effluent is authorized under the National Pollution Discharge Elimination System program (Section 402).

STATE

CALIFORNIA ENDANGERED SPECIES ACT OF 1984

Fish and Game Code sections 2050 et seq. protect California s rare, threatened, and endangered species.

NEST OR EGGS

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

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

Fish and Game Code section 3513 protects California s migratory birds by making it unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird.

FULLY PROTECTED SPECIES

Fish and Game Code sections 3511, 4700, 5050, and 5515 prohibits take of animals that are classified as Fully Protected in California.

Significant Natural Areas

Fish and Game Code section 1930 et seq. designates certain areas such as refuges, natural sloughs, riparian areas, and vernal pools as significant wildlife habitat.

Streambed Alteration Agreement

Fish and Game Code section 1600 et seq. requires California Department of Fish and Game to review project impacts to waterways, including impacts to vegetation and wildlife from sediment, diversions, and other disturbances.

Native Plant Protection Act of 1977

Fish and Game Code section 1900 et seq. designates state rare, threatened, and endangered plants.

California Code of Regulations

Title 14, sections 670.2 and 670.5 list animals of California designated as threatened or endangered.

LOCAL

Santa Clara County General Plan

Policy R-RC19 requests that habitat types and biodiversity be maintained and enhanced. Policy R-RC 24 requests that areas of particularly fragile ecological nature or necessary for preserving threatened or endangered species receive special consideration for preservation and protection from development impacts.

Santa Clara County Tree Ordinance

NS-1203.107, Sec. C16-2(c) and (j) an Sec C16-3 defines Heritage and ordinance trees and prohibits removal without a permit.

City of San Jose 2020 General Plan

Woodlands, Grasslands, Chaparral and Scrub Policies

Number 8: Serpentine grasslands should be preserved and protected to greatest extent feasible or appropriate measures should be taken to restore or compensate.

Bay and Baylands Policies

Number 5: The City should continue to participate in the Santa Clara Valley Non-Point Source Pollution Control Program and meet regional water quality standards implemented through the National Pollution Discharge Elimination System Permits.

SPECIES OF CONCERN POLICIES

Number 1: Consideration should be given to setting aside conservation areas in the Bay and baylands, along riparian corridors, upland wetlands, and hillside areas to protect habitats of unique, threatened, and endangered species.

Number 2: Habitats that support Species of Concern should be retained to the greatest extent feasible.

URBAN FOREST POLICIES

Number 2: Development projects should include the preservation of ordinance-sized trees, and other significant trees.

Number 8: Where urban development occurs adjacent to natural plant communities (e.g. riparian forest), landscape plantings should incorporate tree species native to the area to the greatest extent feasible.

CITY OF SAN JOSE RIPARIAN CORRIDOR POLICY

GUIDELINE 1C: SETBACK AREAS

All buildings, other structures, impervious surfaces, outdoor activity areas and ornamental landscaped areas should be separated a minimum of 100 feet from the edge of the riparian corridor (or top of bank, whichever is greater).

GUIDELINE 2C: VISUAL AND GUIDELINE 2E: LIGHTING

Development projects should be designed to minimize potential impacts to adjacent riparian habitat through the use of environmentally sensitive construction materials/activities, specialized lighting features, and native landscaping.

GUIDELINE 2F: NOISE

The operation of mechanical equipment within or adjacent to riparian corridors should not exceed noise levels for open space as specified in the Noise Element of the City of San Jose s General Plan. Noise producing stationary equipment should be located as far as necessary from riparian corridors to preclude exceeding the ambient noise level in the corridors.

GUIDELINE 6B: VEGETATION REMOVAL

Vegetation removal in riparian areas should be performed only for floodway maintenance or to remove undesirable exotic plants. Herbicides should only be used where manual and mechanical methods are infeasible. If vegetation removal is required as a part of project design, tree removal should be reviewed with the City Arborist. A 3:1 habitat replacement ratio is required and revegetation plans should be reviewed by the City.

GUIDELINE 6D: HERBICIDES

Herbicide use within and adjacent to riparian corridors should be limited to those specifically labeled for use adjacent to water courses.

GUIDELINE 6E: NON-NATIVE PLANT REMOVAL

Invasive, non-native plants should be removed and replaced with native plants in the portion of the riparian corridor adjacent to the property to be developed.

GUIDELINE 7B: WATER QUALITY/DRAINAGE AND RUNOFF

The direct discharge of industrial effluent into the riparian channel, corridor, or floodplain is prohibited. Runoff from industrial uses should be directed away from direct entry to the riparian corridor, or Best Management Practices should be provided and permanently maintained and on-site retention areas used.

ORDINANCE-SIZED TREES AND HERITAGE TREES

City of San Jose Civil Code, Title 13.28.330 —13.28.360 defines and protects Heritage Trees. Title 13.31.010 to 13.32.100 prohibits the removal of trees that are 56 inches or greater at 24 inches above the natural grade or slope without a permit.

CULTURAL RESOURCES

Cultural resources are indirectly protected under provisions of the federal Antiquities Act of 1906 (Title 16, United States Code, Section 431 et seq.) and subsequent related legislation, policies, and enacting responsibilities, e.g., federal agency regulations and guidelines for implementation of the Antiquities Act. The following laws, ordinances, regulations, standards, and policies apply to the protection of cultural resources in California. Projects licensed by the Energy Commission are reviewed to ensure compliance with these laws.

FEDERAL

- National Environmental Policy Act (NEPA): Title 42, United States code, section 4321-et seq., requires federal agencies to consider potential environmental impacts of projects with federal involvement and to consider appropriate mitigation measures.

- Federal Register 44739-44738, 190 (September 30, 1983): Federal Guidelines for Historic Preservation Projects: The US Secretary of the Interior has published a set of Standards and Guidelines for Archaeology and Historic Preservation. These are considered to be the appropriate professional methods and techniques for the preservation of archaeological and historic properties. The Secretary s standards and guidelines are used by federal agencies, such as the Forest Service, the Bureau of Land Management, and the National Park Service. The State Historic Preservation Office refers to these standards in its requirements for selection of qualified personnel and in the mitigation of potential impacts to cultural resources on public lands in California.

- National Historic Preservation Act, 16 USC 470, commonly referred to as Section 106, requires federal agencies to take into account the effects of their undertakings on historic properties through consultations beginning at the early stages of project planning. Regulations revised in 1997 (36 CFR Part 800 et. seq.) set forth procedures to be followed for determining eligibility for nomination, the nomination, and the listing of cultural resources in the National Register of Historic Places (NRHP). The eligibility criteria and the process are used by federal, state, and local agencies in the evaluation of the significance of cultural resources. Very similar criteria and procedures are used by the state in identifying cultural resources eligible for listing in the State Register of Historic Resources. Recent revisions to Section 106 in 1999 emphasized the importance of Native American consultation.

- Executive Order 11593, Protection of the Cultural Environment, May 13, 1971 (36 Federal Register 8921) orders the protection and enhancement of the cultural environment through providing leadership, establishing state offices of historic preservation, and developing criteria for assessing resource values.

- American Indian Religious Freedom Act; Title 42, United States Code, Section 1996 protects Native American religious practices, ethnic heritage sites, and land uses.

- Native American Graves Protection and Repatriation Act (1990); Title 25, United States Code Section 3001, et seq. Defines cultural items , sacred objects , and objects of cultural patrimony ; establishes an ownership hierarchy; provides for review; allows excavation of human remains, but stipulates return of the remains according to ownership; sets penalties; calls for inventories; and provides for the return of specified cultural items.

STATE

- Public Resources Code, Section 5020.1 defines several terms, including the following:

  (j) historical resource includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.

  (q) substantial adverse change means demolition, destruction, relocation, or alteration such that the significance of an historical resource would be impaired.

- Public Resources Code, Section 5024.1 establishes a California Register of Historic Places; sets forth criteria to determine significance; defines eligible properties; and lists nomination procedures.

- Public Resources Code, Section 5097.5 states that any unauthorized removal or destruction of archaeologic or paleontologic resources on sites located on public land is a misdemeanor. As used in this section, public lands means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.

- Public Resources Code, Section 5097.98 defines procedures for notification of discovery of Native American artifacts or remains and for the disposition of such materials.

- Public Resources Code, Section 5097.99 prohibits obtaining or possessing Native American artifacts or human remains taken from a grave or cairn and sets penalties for these actions.

- Public Resources Code, Section 5097.991 states that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated.

- Public Resources code, Section 21000, et seq. [California Environmental Quality Act (CEQA)]. This act requires the analysis of potential environmental impacts of proposed projects and requires application of feasible mitigation measures.

- Public Resources Code, Section 21083.2 states that if a project may affect a resource that has not met the definition of an historical resource set forth in section 21084, then the lead agency may determine 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, such resources must be avoided; if they can not be avoided mitigation measures shall be required. The law also discusses excavation as mitigation; discusses the costs of mitigation for several types of projects; sets time frames for excavation; defines unique and non-unique archaeological resources; provides for mitigation of unexpected resources; and sets financial limitations for this section.

- Public Resources Code, Section 21084.1 indicates that a project may have a significant effect on the environment if it causes a substantial adverse change in the significance of a historic resource; the section further defines a historic resource and describes what constitutes a significant historic resource.

- CEQA guidelines, Title 14, California Code of Regulations, Section 15126.4 Consideration and Discussion of Mitigation Measures Proposed to Minimize Significant Effects . Subsection (b) discusses impacts of maintenance, repair, stabilization, restoration, conservation, or reconstruction of an historical resource. Subsection (b) also discusses mitigation through avoidance of damaging effects on any historical resource of an archaeological nature, preferably by preservation in place, 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.

- CEQA Guidelines, Title 14, California Code of Regulations, Section 15064.5 Determining the Significance of Impacts to Archaeological and Historical Resources . Subsection (a) defines the term historical resources. Subsection (b) explains when a project may be deemed to have a significant effect on historic resources and defines terms used in describing those situations. Subsection (c) describes CEQA's applicability to archaeological

sites and provides a bridge between the application of the terms historic resources and a unique archaeological resource.

- CEQA Guidelines, Title 14 California Code of Regulations, Section 15064.7 Thresholds of Significance. This section encourages agencies to develop thresholds of significance to be used in determining potential impacts and defines the term cumulatively significant.

- CEQA Guidelines, Appendix G Issue V: Cultural Resources. Lists four questions to be answered in determining the potential for a project to impact archaeological, historic, and paleontologic resources.

- California Penal Code, Section 622.5. Anyone who willfully damages an object or thing of archaeological or historic interest can be charged with a misdemeanor.

- California Health and Safety Code, Section 7050.5. If human remains are discovered during construction, the project owner is required to contact the county coroner.

- Public Resources Code, Section 5097.98. If the county coroner determines that the remains are Native American, the coroner is required to contact the Native American Heritage Commission, which is then required to determine the Most Likely Descendant to inspect the burial and to make recommendations for treatment or disposition of the remains and any associated burial items.

LOCAL

The Energy Commission typically assures compliance with local laws, ordinances, regulations, standards plans and policies. The General Plans of the County of Santa Clara and the City of San Jose are addressed below because the project site would occupy approximately 10 acres in the county and 10 acres in the City.

SANTA CLARA COUNTY

The County of Santa Clara s General Plan defines two types of heritage resources, natural and man-made. Both types of resources deserve special protection to preserve them for future generations. The kinds of resources termed heritage resources are: historical sites, structures, and areas; archeological and paleontological sites and artifacts; and historical and specimen trees.

The County regards heritage resources as important due to a variety of factors. The resources are important because they may prove to be potentially scientifically valuable or possess cultural and historical value and place value.

These resources provide a sense of place that defines and distinguishes Santa Clara County from all other places.

According to Santa Clara County, heritage resources should be considered the birthright of successive generations and if integrated with new development, heritage resources will immeasurably enrich the experience of urban and rural landscapes. Santa Clara County s approach to protecting heritage resources is threefold. The County will do the following:

- Inventory and evaluate heritage resources;
- Prevent or minimize adverse Impacts on heritage resources; and
- Restore, enhance, and commemorate resources.

Santa Clara County seeks first to preserve, restore, and commemorate heritage resources of greatest value and secondly to preserve as much of the heritage value of a resource as possible.

CITY OF SAN JOSE

The General Plan of the City of San Jose asserts that the City has a long colorful heritage that is valuable in adding to a sense of community identity. The City of San Jose seeks to do this by promoting an awareness of San Jose s historic and archaeological heritage.

The City s goal is preservation of historically and archaeologically significant structures, sites, districts and artifacts. The City has developed an eleven-point plan that illustrates the City s policy:

1. Preservation of irreplaceable historic and archaeological resources should be a key consideration in the development review process.
2. The City should use the Area of Historic Sensitivity overlay and landmark designation process to promote and enhance the preservation process.
3. An inventory of significant structures should be maintained and promoted.
4. Areas of numerous significant sites or structures should be considered for inclusion and preservation as Historic Preservation Districts.
5. New development should be designed to be compatible with nearby designated historic resources.
6. The City should foster rehabilitation of buildings and offer financial incentives to assist in the rehabilitation.
7. Historic structures proposed for demolition should be considered for relocation.
8. The City requires archaeologically sensitive areas be investigated during the planning process and appropriate mitigation efforts should be incorporated into the project design.
9. If Native American burials are encountered during construction, development activity should cease until examination and reburial in an appropriate manner is accomplished.

10. Heritage trees should be maintained and protected in a healthy state.
11. The City should encourage the appropriate Federal and State programs that provide tax and other incentives for preservation of resources.

FACILITY DESIGN

The applicable laws, ordinances, regulations, and standards for each engineering discipline (civil, structural, mechanical and electrical) are described in Exhibit 1, ∥6.5, 7.3; Table 10.4-1 ; Appendices 10A through 10G).

GEOLOGY AND PALEONTOLOGY

The applicable LORS are listed in Exhibit 1, in Sections 8.14, 8.15 and 8.16 (Calpine/Bechtel 1999a). A brief description of the LORS for geological hazards and resources, paleontological resources, and drainage and erosion control follows:

FEDERAL

There are no federal LORS for geological hazards and resources, or grading and erosion control. The United States Bureau of Land Management (BLM) requires an excavation permit for excavations and grading on land under their jurisdiction. The MEC is not located on lands under the jurisdiction of the BLM. Therefore, there are no federal LORS with respect to geological hazards or resources, or paleontological resources, that are applicable to this project.

STATE AND LOCAL

The California Building Code (CBC), 1998 edition, is based upon the Uniform Building Code (UBC), 1997 edition, which was published by the International Conference of Building Officials. The CBC is a series of standards that are used in investigation, design (Chapters 16 and 18) and construction (including grading and erosion control as found in Appendix Chapter 33) that includes supplemental standards specific to California. The CBC supplements their grading and construction ordinances and regulations.

The California Environmental Quality Act (CEQA) Guidelines Appendix G provides a checklist of questions that a lead agency will normally address if relevant to a project s environmental impacts.

Section (V) (c) asks if the project will directly or indirectly destroy a unique paleontological resource or site or unique geological feature.

Sections (VI) (a), (b), (c), (d), and (e) pose questions that are focused on whether or not the project would expose persons or structures to geological hazards.

Sections (X) (a) and (b) pose questions about the project s effect on mineral resources.

The Standard Procedures, Measures for Assessment and Mitigation of Adverse Impacts to Non-renewable Paleontologic Resources (SVP 1994)) are a set of procedures and standards for assessing and mitigating impacts to vertebrate paleontological resources. They were adopted in October 1994 by a national organization of vertebrate paleontologists (the Society of Vertebrate Paleontologists).

Santa Clara Valley Water District Ordinance No. 83-2 is a local ordinance that defines the limits of watercourses and the Santa Clara Valley Water District s jurisdiction over watercourse construction and management for the purposes of flood control. A Santa Clara Valley Water District permit is required for construction within 50 feet of the top of the bank of water courses throughout the county.

The City of San Jose Riparian Corridor Policy Study of May 17, 1994 (revised March 1999) includes guidelines for flood control, water quality and protection from construction. The guidelines for the riparian corridor are discussed in the **Soil and Water Resources** and the **Biology** sections of this Decision.

HAZARDOUS MATERIALS MANAGEMENT

The following federal, state, and local laws and policies apply to the protection of public health and hazardous materials management.

FEDERAL

The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III and Clean Air Act of 1990 established a nationwide emergency planning and response program and imposed reporting requirements for businesses which store, handle, or produce significant quantities of extremely hazardous materials. The Act (codified in 40 CFR.,/68.110 et seq.) requires the states to implement a comprehensive system to inform local agencies and the public when a significant quantity of such materials is stored or handled at a facility. The requirements of these Acts are reflected in the California Health and Safety Code, section 25531 et seq.

STATE

The California Health and Safety Code, section 25534, directs facility owners, storing or handling acutely hazardous materials in reportable quantities, to develop a Risk Management Plan (RMP) and submit it to appropriate local authorities, the United States Environmental Protection Agency (EPA), and the designated local Administering Agency for review and approval. The plan must include an evaluation of the potential impacts associated with an accidental release, the likelihood of an accidental release occurring, the magnitude of potential human exposure, any preexisting evaluations or studies of the material, the likelihood of the substance being handled in the manner indicated, and the accident history of the material. This new, recently developed program supersedes the California Risk Management and Prevention Plan (RMPP).

Title 8, California Code of Regulations, Section 5189, requires facility owners to develop and implement effective safety management plans to insure that large quantities of hazardous materials are handled safely. While such requirements primarily provide for the protection of workers, they also indirectly improve public safety and are coordinated with the RMP process.

Title 8, California Code of Regulations, Section 458 and Sections 500 — 515, set forth requirements for design, construction, and operation of vessels and equipment used to store and transfer anhydrous ammonia. These sections generally codify the requirements of several industry codes, including the ASME Pressure Vessel Code, ANSI K61.1 and the National Boiler and Pressure Vessel Inspection Code. While these codes apply to anhydrous ammonia, they may also be used to design storage facilities for aqueous ammonia.

California Health and Safety Code, section 41700, requires that: No person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property.

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):

- Class 1: Pipelines in locations with ten or fewer buildings intended for human occupancy.
- Class 2: Pipelines in locations with more than ten but fewer than 46 buildings intended for human occupancy. This class also includes drainage ditches of public roads and railroad crossings.
- Class 3: Pipelines in locations with more than 46 buildings intended for human occupancy, or where the pipeline is within 100 yards of any building or small well-defined outside area occupied by 20 or more people on at least 5 days a week for 10 weeks in any 12 month period. (The days and weeks need not be consecutive).

The natural gas pipeline will be designed for Class 3 service and will meet California Public Utilities Commission General Order 112-D and 58-A standards as well as various PG&E standards. The natural gas pipeline must be constructed and operated in accordance with the Federal Department of Transportation (DOT) regulations, Title 49, Code of Federal Regulations (CFR), Parts 190, 191, and 192:

- Title 49, Code of Federal Regulations, Part 190 outlines the pipeline safety program procedures.
- Title 49, Code of Federal Regulations, Part 191, Transportation of Natural and Other Gas by Pipeline; Annual Reports, Incident Reports, and Safety-Related Condition Reports, requires operators of pipeline systems to notify the U.S. Department of Transportation of any reportable incident by telephone and then submit a written report within 30 days.
- 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 and Class 3 pipelines.

LOCAL AND REGIONAL

The Uniform Fire Code (UFC) contains provisions regarding the storage and handling of hazardous materials. These provisions are contained in Articles 79 and 80. The latest revision to Article˚80 was in 1997 (UFC, 1997). These articles contain minimum setback requirements for outdoor storage of ammonia.

The California Building Code contains requirements regarding the storage and handling of hazardous materials. The Chief Building Official must inspect and verify compliance with these requirements prior to issuance of an occupancy permit.

LAND USE

Calpine/Bechtel has exercised its purchase option on Assessor s Parcel Number (APN) 708-29-003, which includes 116 acres on the southeast side of Tulare Hill (Lot 5) and 10 acres of flat area at the base of Tulare Hill on the southeast side of Fisher Creek (Lot 7). This 126-acre parcel is currently in unincorporated Santa Clara County but within the Sphere of Influence of the City of San Jose[1]. The 10-acre flat area is within the Urban Service Area of the City of San Jose[2]. The applicant also has an ownership interest in 10 acres of Lot 6 (APNs 708-23-002, 003). This area is within the San Jose City limits. On March 1, 1999, Calpine/Bechtel filed an Annexation application with the City of San Jose to annex the 10-acre flat area (Lot 7) at the base of Tulare Hill[3]. The Tulare Hill portion of the property would remain in the County and would not be developed. Lot 7 and the 10 acres from Lot 6 would be combined through the Tentative Map process to configure a 20-acre site for the proposed power plant. Please refer to **LAND USE Figure 1**.

Since the proposed power plant site currently is located partly within the City of San Jose and partly within unincorporated Santa Clara County, staff reviewed all the San Jose and Santa Clara County planning documents relevant to the project. In addition, portions of the project s electrical transmission line and natural gas supply pipeline traverse unincorporated areas of Santa Clara County. A discussion of the project s conformity with applicable goals, policies, standards, and regulations from each of these planning documents can be found in the subsection entitled Compliance with Laws, Ordinances, Regulations, and Standards.

CITY OF SAN JOSE

GENERAL PLAN

The San Jose 2020 General Plan contains each of the elements mandated by Government Code Section 65302 (land use, circulation, housing, conservation, open space, noise, and safety). The elements have been combined into a consistent meaningful whole and organized to meet the needs of public officials, developers, neighborhood organizations, and community members. The General

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[1] A city s Sphere of Influence delineates the expected future physical boundaries and service area of that city.

[2] An Urban Service Area (USA) is defined as all developed, undeveloped, or agricultural lands, either incorporated or unincorporated, within a city s Sphere of Influence, where services and facilties are generally available, and where urban development requiring such services should be located.

[3] A special provision of the Cortese-Knox Local Government Reorganization Act of 1985 (Gov. Code / 56826) allows cities within Santa Clara County to approve their own annexations within the established urban service area, bypassing the approval of the Santa Clara County Local Agency Formation Committee (LAFCO). This procedure is referred to generally as city-conducted annexations.

Plan contains a statement of development policies and includes a Land Use Diagram and text, which set forth the objectives, principles, standards, and plans to guide development proposals. The General Plan states that it must always be considered in its entirety, with no single policy, principle, standard, or plan read and considered in isolation. It is also necessary that the General Plan provides some flexibility and not be applied or interpreted in such a rigid manner as to impede attainment of its objectives (SJ 1994a, pp. 2-3).

NORTH COYOTE VALLEY CAMPUS INDUSTRIAL AREA MASTER DEVELOPMENT PLAN

In 1983, the City of San Jose amended its General Plan to allow Campus Industrial uses in North Coyote Valley. The Campus Industrial category is intended to allow development with a unique campus design concept that takes advantage of the site s natural features and incorporates substantial amounts of landscaped and natural open space. Adopted as policy by the San Jose City Council on May 28, 1985 (Resolution #58353), the Master Development Plan represents a clear and unequivocal statement of how San Jose s adopted General Plan is to be implemented in North Coyote Valley. The City of San Jose s general goals for development of North Coyote Valley are: 1) to provide much-needed, large, single-user sites where major companies can consolidate their operations and; 2) by doing so, ensure the region s long-term economic health (SJ 1985, p.1).

While the Master Development Plan is not an ordinance, many of its provisions are included in Planned Development zonings and have the force of law[4] (SJ 1985). The Master Development Plan includes Private Improvement Guidelines, which are the concepts all development must incorporate. The plan also sets forth development standards which must appear, as a minimum, as part of all Planned Development Zoning approvals and Environmental Performance Standards which all development must meet.[5] The Master Development Plan reads:

Even the low intensity of development in the Campus Industrial areas of Coyote Valley will not preserve its rural character if the large setbacks, height restrictions and landscape concepts outlined in this section are not followed. The unusually restrictive nature of these guidelines is deliberate. North Coyote Valley will attract and hold the major high technology users it is intended to accommodate only if there is a clearly established standard of excellence and a commitment to meet that standard (SJ 1985).

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[4] According to the Master Development Plan, all development in North Coyote Valley will occur through Planned Development Zoning. For an explanation of Planned Development Zoning, see the discussion on the City's Zoning Ordinance.

[5] Amendments to the Private Improvement Standards and General Development Standards were approved by the City Council on November 8, 1999. Staff has conducted its consistency analysis based on the amended guidelines and standards.

RIPARIAN CORRIDOR POLICY STUDY

The Riparian Corridor Policy Study was adopted by the San Jose City Council on May 17, 1994, and revised March 1999. The overall purpose of the study is to explore in detail issues related to General Plan policies that promote the preservation of riparian corridors (the areas along natural streams) and how these corridors should be treated for consistency with the General Plan. The study primarily addresses riparian corridors within San Jose s Urban Service Area. Fisher Creek, which traverses the MEC site on its west and north sides, is included in the study. Recognizing that potential conflicts exist among competing land uses along riparian corridors (e.g., land development, flood control protection, habitat preservation), the study attempts to achieve a balance among these potentially incompatible land use activities through the application of development guidelines. The study states that these development guidelines are intended for use within the context of the overall goals of the City.

ZONING ORDINANCE

There are two forms of zoning in San Jose: conventional zoning and Planned Development (PD) zonings. Conventional zoning districts contained in the City s Zoning Ordinance include a range of allowed land uses, development intensities and standards within the major land use categories such as residential, commercial and industrial (SJ 1994a). The General Plan has the following to say about the City s Planned Development zonings:

Planned Development zoning provides the means to tailor such regulations as allowed uses, site intensities and development standards to a particular site. These development standards and other site design issues implement the design standards set forth in the General Plan and design guidelines adopted by the City Council. This Planned Development zoning process enables the City Council to consider the *unique characteristics of a development site and its surroundings* to better implement the objectives, goals and policies of the General Plan (emphasis added; SJ 1994a).

Development in North Coyote Valley will occur through PD zoning (SJ 1985). The PD zone or district is an override district, which is always combined with a conventional zoning district. The portion of the MEC site in the City is zoned Agriculture (A). The portion of the site currently in the County is zoned Agriculture, 20-acre minimum (A-20ac). Calpine/Bechtel filed Planned Development and Prezoning[6] applications on August 12, 1999 to rezone the MEC site to A (PD). Approval of a PD district involves City Council adoption of an ordinance that includes specific land use regulations, design parameters, and performance standards for the site and its use. Because there are no specific development standards for Public/Quasi-Public uses, City planning staff have

[6] Prezoning is usually done before annexation of unincorporated land to a city in order to facilitate its transition into the city boundaries. The advantage is that a city will have zoning in effect immediately upon annexation.

stated that a determination of appropriate development standards for the MEC would be based on applicable City plans and policies, such as the North Coyote Valley Campus Industrial Area Master Development Plan (SJ 1999b).

The second phase of the City s PD zoning process is the issuance of a Planned Development (PD) Permit. The PD Permit is a combined site/architectural permit and conditional use permit that implements the approved PD zoning on the property (SJ 1994a). The conditional use permit aspect of the PD Permit would be subsumed into the Energy Commission s license, since issuance of a certificate by the Energy Commission is in lieu of any local permit for the use of the site (Pub. Resources Code ⁄ 25500). Thus, any conditions the City wishes to have imposed on the project need to be considered by the Energy Commission and included, as appropriate, in the Energy Commission s license to have any binding effect on the MEC. Nevertheless, under the City s zoning ordinance, until a PD Permit is issued, the uses allowed on the property and the development standards applicable to the site are those which are allowed by the base zoning district only (SJ 1997; ⁄ 20.36.030 and ⁄ 20.36.040). The City s current zoning on the MEC site is Agriculture, which permits primarily agricultural uses. Other uses are conditionally allowed, such as public utility facilities. However, a power plant is not among the uses listed. The Agricultural District development standards restrict building and structure heights to 35 feet (⁄ 20.20.140). Until City Council approval of the PD Permit, the PD Zoning necessary for development of the MEC could not be effectuated, and the Agricultural District land use regulations would still apply to the site. Calpine/Bechtel submitted a preliminary draft of their PD Permit application in September.

COUNTY OF SANTA CLARA

GENERAL PLAN

Policies in the Santa Clara County General Plan (1995-2010) seek to maintain the scenic character of the rural, unincorporated areas of the County and to promote conservation and productive use of their natural resources for agriculture, ranching, watershed, public recreation, and wildlife habitat. In regard to unincorporated lands within city urban service areas, the General Plan states that these areas should eventually be annexed to their surrounding cities. Even before annexation occurs, development proposals within these areas must conform to the uses allowed in the surrounding city s general plan (SCC 1994).

LOCAL SYSTEM EFFECTS

There are no legally required LORS specifying the characteristics of a local system effects analysis. Where appropriate the authors have utilized WSCC, NERC, and Cal-ISO system reliability criteria regarding outages and system reactive margin criteria to assess the benefits or detriments of the MEC project. CEQA does however, provide guidance to decision-makers. To assure that energy implications are considered in project decisions CEQA requires that EIRs include a discussion of the potential energy impacts of proposed projects with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. CEQA also emphasizes that the decision-maker consider (T)the effects of the project on local and regional energy supplies and on requirements for additional capacity, (CEQA Appendix F).

NEED CONFORMANCE

The Metcalf Energy Center Application for Certification was accepted on November 30, 1999. Prior to January 1, 2000, the Public Resources Code prohibited the Energy Commission from certifying a power plant unless the Commission made a finding that the facility was found to be in conformance with the Commission s integrated assessment of the need for new resource additions. (Pub. Resources Code∥25523(f) and 25524(a).) The Public Resources Code directed the Commission to do an integrated assessment of need, taking into account 5- and 12-year forecasts of electricity supply and demand, as well as various competing interests, and to adopt the assessment in a biennial electricity report.

On September 28, 1999, the Governor signed Senate Bill No. 110, which became Chapter 581, Statutes of 1999. This legislation repealed Public Resources Code sections 25523(f) and 25524(a) and amended other provisions relating to the assessment of need for new resources. It removed the requirement that the Commission make a specific finding that the proposed facility is in conformance with the adopted integrated assessment of need. Regarding need-determination, Senate Bill 110 states:

> Before the California electricity industry was restructured the regulated cost recovery framework for power plants justified requiring the commission to determine the need for new generation, and site only power plants for which need was established. Now that power plant owners are at risk to recover their investments, it is no longer appropriate to make this determination.

(Pub. Resources Code,∕25009, added by Stats. 1999, ch. 581,∕1.) Senate Bill 110 took effect on January 1, 2000 (Cal. Const. Art. 4,∕8.). As of January 1, 2000, the Commission is no longer required to determine if a proposed project conforms with an integrated assessment of need. As a result, an application for certification for which the Commission adopts a final decision after January 1, 2000 is not subject to a finding of need-conformance.

In this case, the Commission s final decision will be made after January 1, 2000. Therefore, because of SB 110, the Commission will make no finding of need-conformance with respect to the proposed project.

NOISE

FEDERAL

Under the Occupational Safety and Health Act of 1970 (29 USC／651 et seq.), the Department of Labor, Occupational Safety and Health Administration (OSHA) has adopted regulations (29 CFR／1910.95) that establish maximum noise levels to which workers at a facility may be exposed. These 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 during which the worker is exposed. OSHA regulations also dictate hearing conservation program requirements and workplace noise monitoring requirements. The administering agency for the above authority is the Federal Occupational Safety and Health Administration (Fed-OSHA).

The Noise Control Act of 1972 (42 USC 6 4901 et seq., 40 CFR Parts 201-211) sets performance standards for noise emissions from major sources. The U. S. Environmental Protection Agency (USEPA) has identified a day/night level (L_{dn}) of 55˚dBA as providing reasonable protection against community annoyance and activity interference due to noise. USEPA administers the Noise Control Act.

STATE

There are no state regulations governing off-site (community) noise. Rather, state planning law (Gov. Code,／65300) requires that all counties and cities prepare and adopt a General Plan. Government Code section 65302(f) requires that a noise element be prepared as part of the General Plan. This element is to address existing and foreseeable noise problems . Other state laws, ordinances, regulations and standards (LORS) include the California Environmental Quality Act (CEQA) and the California Occupational Safety and Health Act (Cal-OSHA).

California Vehicle Code, sections 23130 and 23130.5, sets noise limits for highway vehicles. The California Highway Patrol and the Santa Clara County Sheriff s Office administer the vehicle code.

CAL-OSHA

California Occupational Safety and Health Administration (Cal-OSHA) has promulgated Occupational Noise Exposure Regulations that set employee noise exposure limits.

Cal-OSHA regulations (Cal. Code Regs., tit. 8,／5095 et seq.) are the same as the federal OSHA criteria described above. The criteria are based on a worker s noise level exposure over a specific time period. Maximum permissible worker noise exposure levels to protect against damage to the workers hearing have been established. The administering agency is Cal-OSHA.

CEQA

California Environmental Quality Act (CEQA) requires that significant environmental impacts be identified, and that such impacts be eliminated or mitigated to the extent feasible. The applicable CEQA Guidelines (Cal. Code Regs., tit. 14, ⁄15000 et seq., Appendix G ⁄ XI) explain that a significant effect from noise may exist if a project would result in:

1. 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.
2. Exposure of persons to, or generation of, excessive ground borne vibration or ground borne noise levels.
3. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
4. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

LOCAL

The MEC is to be developed on land that is partly in the City of San Jose and partly in Santa Clara County. The noise standards of Santa Clara County and San Jose are similar. Specifically, San Jose adopts a DNL of 55 dBA (continuous L_{eq} of 49 dBA) as its goal for long-term noise. Santa Clara adopts an L_{50} criterion of 50 dBA.

POWER PLANT EFFICIENCY

FEDERAL

No federal laws apply to the efficiency of this project.

STATE

CALIFORNIA ENVIRONMENTAL QUALITY ACT GUIDELINES

CEQA Guidelines state that the environmental analysis shall describe feasible measures which could minimize significant adverse impacts, including where relevant, inefficient and unnecessary consumption of energy (Cal. Code Regs., tit.˚14, ⁄˚15126.4(a)(1)). Appendix F of the Guidelines further suggests consideration of such factors as the project s energy requirements and energy use efficiency; its effects on local and regional energy supplies and energy resources; its requirements for additional energy supply capacity; its compliance with existing energy standards; and any alternatives that could reduce wasteful, inefficient and unnecessary consumption of energy (Cal. Code regs., tit. 14, ⁄˚15000 et seq., Appendix F).

LOCAL

No local or county ordinances apply to power plant efficiency.

POWER PLANT RELIABILITY

Presently, there are no laws, ordinances, regulations or standards 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)]. In a practical sense, a project is acceptable if it does not degrade the reliability of the utility system to which it is connected. This is likely the case if the project exhibits reliability at least equal to that of other power plants on that system.

PUBLIC HEALTH

The following federal, state, and local LORS generally apply to the protection of public health. These provisions have established the basis for Commission staff s recommendations regarding the significance and acceptability of project-related impacts on 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 Air Resources Board 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

BAY AREA AIR QUALITY MANAGEMENT DISTRICT RULE 2-1-316

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.

San Jose North Coyote Valley Campus Industrial Area Master Development Plan

The Master Development Plan contains Environmental Performance Standards. Section C. 6 (Air Quality) states No manufacturing operation shall be permitted which produces odors, fumes, smoke, or other air-borne pollutants detectable, without instruments, at the property lines of the subject parcel or which produces any dangerous emissions whatsoever.

SOCIOECONOMIC RESOURCES

FEDERAL

Executive Order 12898, Federal Actions to address Environmental Justice (EJ) in Minority Populations and Low-Income Populations, focuses federal attention on the environment and human health conditions of minority communities and calls on agencies to achieve environmental justice as part of this mission. The order requires the US Environmental Protection Agency (EPA) and all other federal agencies (as well as state agencies receiving federal funds) to develop strategies to address this issue. The agencies are required to identify and address any disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and/or low-income populations.

STATE

CALIFORNIA GOVERNMENT CODE, SECTIONS 65996-65997

As amended by SB 50 (Stats. 1998, ch. 407, sec. 23), these sections state that public agencies may not impose fees, charges, or other financial requirements to offset the cost for school facilities.

14 CALIFORNIA CODE OF REGULATIONS, SECTION 15131

(b) Economic or social factors of a project may be used to determine the significance of physical changes caused by the project.

(c) Economic, social, and, particularly, housing factors shall be considered by public agencies together with technological and environmental factors in deciding whether changes in a project are feasible to reduce and or avoid the significant effects on the environment.

LOCAL

SANTA CLARA COUNTY GENERAL PLAN

The General Plan encourages increased economic development planning and promotion consistent with the economic well-being of Santa Clara County. Relevant policies include:

C-EC-9

Coordinated countywide economic development planning and promotion efforts should be increased.

C-EC-10

The County shall play a leadership role in encouraging and facilitating coordinated countywide economic development planning.

CITY OF SAN JOSE 2020 GENERAL PLAN

The basic economic goal is to create a stronger municipal tax base by obtaining a greater share of the total industrial and commercial development in the County, and by nurturing and encouraging expansion of the existing industrial and commercial development in the City of San Jose. The Economic Development Major Strategy is designed to maximize the economic potential of the City s land resources while providing employment opportunities for San Jose residents.

Economic Goal #7 states that the City encourages a mix of land uses to contribute to a balanced economic base, including industrial suppliers and services, green industries, as well as high technology manufacturers and other related industries.

NORTH COYOTE VALLEY CAMPUS INDUSTRIAL AREA PLAN

This Plan expresses the need for development to bear the costs of any necessary extensions or expansions of public infrastructure. It serves as a guideline for all public agencies and future developers who will participate in the building of the North Coyote Campus Industrial community.

SOIL AND WATER RESOURCES

FEDERAL

CLEAN WATER ACT

The Clean Water Act (33 Unified States Code ⁄1257 et seq.) requires states to set standards to protect water quality. Point source discharges to surface water are regulated by this act through requirements set forth in specific or general National Pollutant Discharge Elimination System (NPDES) permits. Stormwater discharges during construction and operation of a facility and incidental non-stormwater discharges associated with transmission and pipeline construction also fall under this act and are addressed through a general NPDES permit. Sections 307 and 403 of the Act (33 USC ⁄⁄1317,1343), require that all non-domestic discharges to wastewater treatment plants must receive a pretreatment permit. This permit is to ensure that the discharge will not interfere with the treatment processes at the plant or make the facility violate its own discharge permit limitations.

In California, Clean Water Act requirements are administered by the nine Regional Water Quality Control Boards (RWQCBs). Section 404 of the Act regulates the discharge of dredged or fill material into waters of the United States, including rivers, streams and wetlands. Site specific or general (Nationwide) permits for such discharges are issued by the Army Corp of Engineers (ACOE) and are certified by the RWQCBs.

STATE

PORTER-COLOGNE WATER QUALITY CONTROL ACT

The Porter-Cologne Water Quality Control Act of 1967, Water Code section 13000 et seq., requires the State Water Resources Control Board (SWRCB) and the nine RWQCBs to adopt water quality criteria to protect state waters. These criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. The criteria for the project area are contained in the San Francisco Bay Regional Water Quality Control Board s (SFBRWQCB) San Francisco Bay Basin Water Quality Control Plan (Basin Plan) (SFBRWQCB 1995b).

Under provisions of the Clean Water Act, the SWRCB adopted two general National Pollutant Discharge Elimination System (NPDES) permits for control of stormwater runoff during construction and operation of industrial facilities, such as a power plant and associated facilities.

Ground disturbance activities affecting greater than five acres are required, under the General Construction Activity Storm Water Permit, to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP). This plan identifies best

management practices to reduce sediment, oil, and other contaminants in stormwater discharges from the site. The general NPDES permit for Industrial Activities also requires industrial facilities, such as power plants, to prepare and implement a SWPPP that identifies best management practices to reduce the discharge of contaminants from facility operation in stormwater discharge.

401 WATER QUALITY CERTIFICATION

Section 401 of the Clean Water Act provides for state certification that federal permits allowing discharge of dredged or fill material into waters of the United States will not violate federal and state water quality standards. A number of the proposed MEC facilities will be constructed in or near creeks that are considered waters of the United States. The SFBRWQCB will issue the 401 certification for this project.

STATE WATER RESOURCES CONTROL BOARD POLICY 75-58

The SWRCB has also adopted a number of policies that provide guidelines for water quality protection. The principal 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 Powerplant Cooling (adopted by SWRCB on June 19, 1975 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 states that power plant cooling water should, in order of priority, come from wastewater being discharged to the ocean, ocean water, brackish water from natural sources or irrigation return flow, inland waste waters of low total dissolved solids, and other inland waters. This policy goes on to address cooling water discharge prohibitions.

STATE WATER CODE SECTION 13550 ET SEQ.

Section 13551 of the Water Code prohibits the use of water from any source of quality suitable for potable domestic use for non-potable uses, including industrial uses, if suitable recycled water is available given conditions set forth in section 13550. These conditions take into account the quality and cost of the water, the potential for public health impacts, and the effects on downstream water rights, beneficial uses, and biological resources.

Section 13552.6 of the Water Code states that the use of potable domestic water for cooling towers, if suitable recycled water is available, is an unreasonable use of water. The availability of recycled water is based upon a number of criteria which must be taken into account by the SWRCB. These criteria are that: the quality and quantity of the reclaimed water are suitable for the use; the cost is reasonable; the use is not detrimental to public health, will not impact downstream users or biological resources; and will not degrade water quality.

Section 13552.8 of the Water Code states that any public agency may require the use of recycled water in cooling towers if certain criteria are met. These

criteria include that recycled water is available and meets the requirements set forth in section 13550; the use does not adversely affect any existing water right; and if there is public exposure to cooling tower mist using recycled water, appropriate mitigation or control is necessary.

LOCAL

SAN FRANCISCO REGIONAL WATER QUALITY CONTROL BOARD — establishes standards and requirements for the Recycled Water Use Permit issued by the South Bay Water Recycling Program; issues NPDES surface water discharge permits for construction and operation activities.

SANTA CLARA VALLEY WATER DISTRICT — controls surface water discharge; requires permits for well construction; responsible for countywide groundwater and flood management; is the regional water wholesaler; and requires a permit (District Ordinance 83-2) to perform specific activities within floodways or upon or within the banks of a watercourse.

SANTA CLARA COUNTY — establishes grading and stormwater pollution control requirements (Ordinance No. NS1203.35 and NS517.55) and implements the Santa Clara County Non-point Source Pollution Control Program (1993).

SOUTH BAY WATER RECYCLING PROGRAM - establishes requirements for planning, constructing and operating a recycled water system for both new and existing facilities. Wholesaler of recycled water and may set forth site-specific requirements in the Recycled Water Use Permit (Rules and Regulations, August 1996).

CITY OF SAN JOSE

- sets forth excavation and grading requirements.

- specifies that new development is expected to pay the capital costs for infrastructure required to support it (City of San Jose General Plan, Growth Management Strategy).

- establishes guidelines and development restrictions to protect water quality and riparian habitat (Riparian Corridor Policy Study, March 1999).

- specifies water quality objectives and states that no measurable degradation of groundwater quality will be permitted and that stormwater runoff will not add to the potential for downstream flooding (North Coyote Valley Campus Industrial Area Master Development Plan: Environmental Performance Standards).

- requires that stormwater drainage systems be designed to protect against the 100-year frequency storm (Design Guidelines for Storm Drains, April 1990).

- requires an Industrial Wastewater Discharge Permit on behalf of the Santa Clara/San Jose Water Pollution Control Plant for wastewater discharges to the San Jose Municipal sewer system regulating wastewater discharges and imposing limits (Ordinance No. 24800).

TRAFFIC AND TRANSPORTATION

FEDERAL

The federal government addresses transportation of goods and materials in Title 49, Code of Federal Regulations:

- Sections 171-177 govern the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of the transportation vehicles.
- Sections 350-399, and Appendices A-G, Federal Motor Carrier Safety Regulations, address 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 addresses the transportation of hazardous materials. Specifically, these codes include:

- California Vehicle Code, Section 353, defines hazardous materials. California Vehicle Code, Sections 31303-31309, regulates the highway transportation of hazardous materials, the routes used, and restrictions thereon.
- California Vehicle Code, Sections 31600-31620, regulates the transportation of explosive materials.
- California Vehicle Code, Sections 32000-32053, regulates the licensing of carriers of hazardous materials and includes noticing requirements.
- California Vehicle Code, Sections 32100-32109, establishes special requirements for the transportation of inhalation hazards and poisonous gases.
- California Vehicle Code, Sections 34000-34121, establishes special requirements for the transportation of flammable and combustible liquids over public roads and highways.
- California Vehicle Code, Sections 34500, 34501, 34501.2, 34501.3, 34501.4, 34501.10, 34505.5-7, 34506, 34507.5 and 34510-11, regulates the safe operation of vehicles, including those which are used for the transportation of hazardous materials.
- California Health and Safety Code, Sections 25160 et seq., addresses the safe transport of hazardous materials.
- California Vehicle Code, Sections 2500-2505, authorizes the issuance of licenses by the Commissioner of the California Highway Patrol for the transportation of hazardous materials, including explosives.
- California Vehicle Code, Sections 13369, 15275, and 15278, addresses the licensing of drivers and the classifications of licenses required for the

operation of particular types of vehicles. In addition, it requires the possession of certificates permitting the operation of vehicles transporting hazardous materials.

- California Streets and Highways Code, Sections 117 and 660-72, and California Vehicle Code, Sections 35780 et seq., require permits for the transportation of oversized loads on county roads.
- California Streets and Highways Code, Sections 660, 670, 1450, 1460 et seq., 1470, and 1480, regulates right-of-way encroachment and the granting of permits for encroachments on state and county roads.
- In accordance with California state law, the County of Santa Clara has adopted a Congestion Management Plan (CMP) for all transportation facilities within the County. The CMP is overseen by the Santa Clara Valley Transportation Authority. The CMP states that:
- Level of Service D (LOS D) is to be achieved whenever practical; and
- Level of Service E (LOS E) represents the maximum vehicles per day that any roadway can serve and still meet the minimum acceptable standard on the CMP roadway system.

LOCAL

SANTA CLARA COUNTY

The Santa Clara County General Plan (1994), includes the following policies which are pertinent to the proposed project:

Policy C-GD 14: Future urban development in Coyote Valley should be planned to realize the potential it holds for improving the City of San Jose s existing jobs-housing imbalance and for the benefit to the county as a whole, including:

- development of industrial and commercial land uses in South San Jose prior to further housing development in order to alleviate commute hour traffic congestion along major north-south routes;
- reduced dependence on the automobile and increased use of public transit;
- an increased variety of housing opportunities; and
- opportunities for greenbelts.

Policy C-GD 18: Anticipated impacts on the South County cities and other jurisdictions from development in Coyote Valley should be adequately mitigated to less than significant levels.

Policy C-GD 41: Cities should take maximum advantage of the development potential of their vacant land supply and underutilized industrial/commercial lands to achieve more balanced growth and development.

CITY OF SAN JOSE

The transportation and circulation element of the San Jose General Plan (1994) sets forth the following policies that are applicable to the MEC project:

- The city s level of service standards for the state highway system and specific routes of regional significance shall be those standards adopted in the Santa Clara Congestion Management Program;
- The City shall require all new development projects to analyze their contribution to increased traffic and to implement improvements necessary to address the increase; and
- The California Streets and Highways Code Division 2, Chapter 5.5, Sections 1460-1470, mandates that an encroachment permit be obtained from the City Public Works Department if there is an opening or excavation for any purpose in any highway.

It is the City of San Jose s policy that all new development maintain two points of access for emergency vehicles.

TRANSMISSION LINE SAFETY AND NUISANCE

Discussed below by subject area are design-related LORS applicable to the physical impacts of the transmission lines proposed for MEC. The impacts of concern are addressed through specific federal or state regulations or through established industry standards and practices. There presently are no local laws or regulations specifically aimed at the physical structure or dimensions of electric power lines to limit the impacts noted above.

AVIATION SAFETY

Any hazard to area aircraft relates to the potential for collision with the line in the navigable air space. The applicable federal LORS as discussed below are intended to ensure the distance and visibility necessary to avoid such collision throughout the country.

FEDERAL

- Title 14, Part 77 of the Federal Code of Regulations (CFR), Objects Affecting the Navigation Space . Provisions of these regulations specify the criteria used by the Federal Aviation Administration (FAA) for determining whether a Notice of Proposed Construction or Alteration is required for potential obstruction hazards. The need for such a notice depends on factors related to the height of the structure, the slope of an imaginary surface from the end of nearby runways to the top of the structure, and the length of the runway involved. Such notification allows the FAA to ensure that the structure is located to avoid any significant hazards to area aviation.

- FAA Advisory Circular (AC) No. 70/460-2H, Proposed Construction and or Alteration of Objects that may Affect the Navigation Space . This circular informs each proponent of a project that could pose an aviation hazard of the need to file the Notice of Proposed Construction or Alteration (Form 7640) with the FAA.

- FAA AC No. 70/460-1G, Obstruction Marking and Lighting . This circular describes the FAA standards for marking and lighting objects that may pose a navigation hazard as established using the criteria in Title 14, Part 77 of the CFR.

INTERFERENCE WITH RADIO-FREQUENCY COMMUNICATION

Transmission line-related radio-frequency interference is one of the indirect effects of line operation as produced by the physical interactions of line electric fields. The level of such interference usually depends on the magnitude of the electric fields involved. Because of this, the potential for such impacts could be assessed from field strength estimates obtained for the line. The following

regulations are intended to ensure that such lines are located away from areas of potential interference and that any interference is mitigated whenever it occurs.

FEDERAL

- Federal Communications Commission (FCC) regulations in Title 47 CFR, Section 15.25. Provisions of these regulations prohibit operation of any devices producing force fields, which interfere with radio communications, even if (as with transmission lines) such devices are not intentionally designed to produce radio-frequency energy. Such interference is due to the radio noise produced by the action of the electric fields on the surface of the energized conductor. The process involved is known as corona discharge but is referred to as spark gap electric discharge when it occurs within gaps between the conductor and insulators or metal fittings. When generated, such noise manifests as perceivable interference with radio or television signal reception or interference with other forms of radio communication. Since the level of interference depends on factors such as line voltage, distance from the line to the receiving device, orientation of the antenna, signal level, line configuration and weather conditions, maximum interference levels are not specified as design criteria for modern transmission lines. The FCC requires each line operator to mitigate all complaints about interference on a case-specific basis. Specific Conditions of Certification typically ensure compliance with this FCC requirement. Since electric fields cannot penetrate the soil and other objects, underground lines do not produce the radio noise associated with overhead lines.

STATE

- General Order 52 (GO-52), California Public Utilities Commission (CPUC). Provisions of this order govern the construction and operation of power and communications lines and specifically deal with measures to prevent or mitigate inductive interference. Such interference is produced by the electric field induced by the line in the antenna of a radio signal receiver.

  Several design and maintenance options are available for minimizing these electric field-related impacts. When incorporated in the line design and operation, such measures also serve to reduce the line-related audible noise discussed below.

AUDIBLE NOISE

FEDERAL

As with radio noise, any audible noise from a transmission line usually results from the action of the electric field at the surface of the line conductor and could be perceived as a characteristic crackling, frying or hissing sound or hum. Since (as with communications interference), the noise level depends on the strength of

the line electric field, the potential for occurrence can be assessed from estimates of the field strengths expected during operation. Such noise is usually generated during wet weather and from lines of 345 kV or higher. It therefore, is generally not expected at significant levels from lines of less than 345 kV such as the one proposed for MEC. 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. There are no design-specific regulations to limit the audible noise from transmission lines. As with radio noise, such noise is limited instead through design and maintenance standards established from industry research and experience as effective without significant impacts on line safety, efficiency maintainability and reliability. All high-voltage lines are designed to assure compliance.

NUISANCE SHOCKS

FEDERAL

Nuisance shocks around transmission lines are non-hazardous but unpleasant experiences caused by current flow at levels generally incapable of causing significant physiological harm. Such shocks mostly result 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. For modern high-voltage lines, shocks of this type are effectively minimized through grounding procedures specified in the National Electrical Safety Code and the joint guidelines of the American National Standards Institute (ANSI) and the Institute of Electrical and Electronics Engineers (IEEE). As with lines of the type proposed, the applicant will be responsible in all cases for ensuring compliance with these grounding-related practices within the right-of-way. Specific Conditions of Certification typically ensure that such grounding is made within the right-of-way by both the Applicant and property owners.

FIRE HAZARDS

The fire hazards addressed through the following regulations are those that could be caused by sparks from conductors of overhead lines or that could result from direct contact between the line and nearby trees and other combustible objects.

STATE

- General Order 95 (GO-95), CPUC, Rules for Overhead Electric Line Construction . This order 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 . This code specifies utility-related measures for fire prevention.

HAZARDOUS SHOCKS

The hazardous shocks that are addressed by the following regulations and standards are those that could result from direct or indirect contact between an individual and the energized line. Such shocks are capable of serious physiological harm or death and remain a driving force in the design and operation of transmission and other high-voltage lines.

FEDERAL

- National Electrical Safety Code, Part 2: Safety Rules for Overhead Lines. Provisions in this part of the code specify the national safe operating clearances applicable in areas where the line might be accessible to the public. Such requirements are intended to minimize the potential for direct or indirect contact with the energized line.

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 reasonably ensures the safety of the general public and line workers.
- Title 8, CCR, Section 2700 et seq., High Voltage Electric Safety Orders . These safety orders establish essential requirements and minimum standards for safely installing, operating, and maintaining electrical installations and equipment.

ELECTRIC AND MAGNETIC FIELD EXPOSURE

The possibility of health effects of electric fields and magnetic fields has increased public concern in recent years about living near high-voltage lines. Both fields occur together whenever electricity flows, hence the general practice of considering both as EMF exposure. As noted by Calpine/Bechtel (1999a, AFC page 5-9), the available evidence, as evaluated by CPUC and other regulatory agencies, has not established that such fields pose a significant health hazard to exposed humans. However, staff considers it important, as does the CPUC, to note that while such a hazard has not been established from the available evidence, the same evidence does not serve as proof of a definite lack of a hazard. Staff, therefore considers it appropriate, in light of present uncertainty, to reduce such fields to some degree, where feasible, until the issue is better understood. The challenge has been to establish when, and how far to reduce them. Several regulations have been established to control human exposure.

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 relate to 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.

FEDERAL

No federal regulations have been established specifying environmental limits on the strengths of fields from power lines. However, the federal government continues to conduct and encourage research necessary for an appropriate policy on the EMF issue.

In the face of the present uncertainty, several states have opted for design-driven regulations ensuring that fields from new lines are generally similar to those from existing lines. Some states (Minnesota, Florida, New York, Montana, and New Jersey) have set specific environmental limits on one or both fields in this regard. These limits are, however, not based on any specific health effects. All regulatory agencies believe, as does staff, that health-based limits are inappropriate at this time. They also believe that the present knowledge of the issue does not justify any retrofit of existing lines.

Before the present health-based concern developed, measures to reduce field effects from power line operations were mostly aimed at the electric field component, whose effects can manifest as the previously noted radio noise, audible noise and nuisance shocks. The present focus is on the magnetic field because only it can penetrate building materials to potentially produce the types of health impacts at the root of the present concern. As one focuses on the strong magnetic fields from the more visible transmission and other high-voltage power lines, staff considers it important for perspective, to note that an individual in a home could be exposed for short periods to much stronger fields while using some common household appliances (National Institute of Environmental Health Services and the U.S Department of Energy 1995). Scientists have not established which of these types of exposures would be more biologically meaningful in the individual. Staff notes such exposure differences only to show that high-level magnetic field exposures regularly occur in areas other than the power line environment.

STATE

In California, the CPUC (which regulates the installation and operation of high-voltage lines in California) has determined that only no-cost or low-cost measures are presently justified in any effort to reduce power line fields beyond levels existing before the present health concern arose. The CPUC has further determined that such reduction should be made only in connection with new or

modified lines. It required each utility within its jurisdiction to establish EMF-reducing design guidelines for all new or upgraded power lines and related facilities within their respective service areas. The CPUC further established specific limits on the resources to be used in each case for field reduction. Such limitations were intended by the CPUC to apply to the cost of any redesign to reduce field strength or relocation to reduce exposure. Utilities not within the jurisdiction of the CPUC voluntarily comply with these CPUC requirements. This CPUC policy resulted from assessments made to implement CPUC Decision 93-11-013 of 1989.

In keeping with this CPUC policy, staff requires a showing that each proposed line will be designed according to the EMF-reducing design guidelines applicable to the utility service area involved. These field-reducing measures can impact line operation if applied without appropriate regard for environmental and other local issues bearing on safety, reliability, efficiency and maintainability. It is therefore, up to each applicant to ensure that such measures are applied in ways, and to an extent, without significant impacts on line operation. The extent of such applications will be reflected by the ground-level field strengths as measured during operation. When estimated or measured for the line, such field strengths can be used by staff and other regulatory agencies for comparison with fields of lines of similar voltage and current-carrying capacity. Such field strengths can be estimated for any given design using established procedures. Estimates are specified for a height of one meter above the ground, in units of kilovolts per meter (kV/m), for the electric field, and milligauss (mG) for the companion magnetic field. Their magnitude depends, in the case of electric fields, on line voltage, the geometry of the structures, degree of cancellation from nearby conductors, distance between conductors and, in the case of magnetic fields, amount of current in the line.

Since each new line in California is currently required to be designed according to the EMF-reducing guidelines of the utility in the service area involved, their fields are required under existing CPUC policies to be similar to fields from similar lines in that service area. A condition of certification is usually proposed by staff to ensure implementation of the reduction measures necessary.

TRANSMISSION SYSTEM ENGINEERING

- California Public Utilities Commission (CPUC) General Order 95 (GO-95), Rules for Overhead Electric Line Construction, formulates uniform requirements for construction of overhead lines. Compliance with this order ensures adequate service and safety to persons engaged in the construction, maintenance, operation, or use of overhead electric lines as well as to the public in general.
- CPUC Rule 21 provides standards for the reliable connection of parallel generating stations connected to participating transmission owners' facilities.
- Western Systems Coordinating Council (WSCC) Reliability Criteria provide the performance standards used in assessing the reliability of the interconnected system. These Reliability Criteria require the continuity of service to loads as the first priority and preservation of interconnected operation as a secondary priority. The WSCC Reliability Criteria includes the Reliability Criteria for Transmission System Planning, Power Supply Design Criteria, and Minimum Operating Reliability Criteria. Analysis of the WSCC system is based to a large degree on WSCC Section 4 Criteria for Transmission System Contingency Performance which require that the results of power flow and stability simulations verify established performance levels. Performance levels are defined by specifying the allowable variations in voltage, frequency, and loading that may occur on systems other than the one in which a disturbance originated. Levels of performance range from no significant adverse effect outside a system area during a minor disturbance (loss of load or facility loading outside emergency limits) to a performance level that only seeks to prevent system cascading and the subsequent blackout of islanded areas during major disturbances (such as loss of all lines in a right-of-way). While controlled loss of generation, load, or system separation is permitted in extreme circumstances, their uncontrolled loss is not permitted (WSCC 1998).
- North American Electric Reliability Council (NERC) Planning Standards provide policies, standards, principles, and guidelines to assure the adequacy and security of the electric transmission system. With regard to power flow and stability simulations, these Planning Standards are similar to WSCC s Criteria for Transmission System Contingency Performance. The NERC planning standards provide for acceptable system performance under normal and contingency conditions; however, the NERC planning standards apply not only to interconnected system operation but also to individual service areas (NERC 1998).
- Cal-ISO Reliability Criteria also provide policies, standards, principles, and guidelines to assure the adequacy and security of the electric transmission system. With regard to power flow and stability simulations, these Planning Standards are similar to WSCC s Criteria for Transmission System

Contingency Performance and the NERC Planning Standards. The Cal-ISO Reliability Criteria incorporate the WSCC Criteria and NERC Planning Standards. However, the Cal-ISO Reliability Criteria also provide some additional requirements that are not found in the WSCC Criteria or the NERC Planning Standards. The Cal-ISO Reliability Criteria apply to all existing and proposed facilities interconnecting to the Cal-ISO controlled grid.

- Cal-ISO Scheduling Protocols and Dispatch Protocols require conformance with NERC, WSCC, and Local Area Reliability and Planning Criteria. These standards will be applied in assessing the system reliability implications of the project. Also of major importance to the project, are the Cal-ISO Day/Hour Ahead Inter-zonal Congestion Management Scheduling Protocol (SP 10), the Transmission System Loss Management Scheduling Protocol (SP 4), and the Creation of the Real Time Merit Order Stack (SP 11). The Congestion Management Scheduling Protocol provides that the operation of power plants not violate system criteria when market participants request generation dispatch or the use of major interties. The Real Time Merit Order Stack is developed based on increasing energy bid prices so that the least cost bids are accepted early on and if congestion is anticipated the highest bids are not selected. The Transmission System Loss Management Scheduling Protocol uses the Cal-ISO power flow model to identify the effects on total transmission losses at each generating unit and scheduling point.
- Cal-ISO Participating Generator Agreement consists of detailed explanations of the requirements in the Cal-ISO Tariff pertaining to the paralleled generating unit.

VISUAL RESOURCES

FEDERAL AND STATE

The proposed project, including the linear facilities, is located on private lands and is not subject to federal or state land management requirements. Likewise, no roadway in the project vicinity is a designated or eligible State Scenic Highway. Therefore, the project is not subject to any federal or state regulations pertaining to visual resources.

LOCAL

All portions of the proposed project would be variously located in the City of San Jose and Santa Clara County. Therefore, the project will be subject to the applicable laws, ordinances, regulations, and standards relevant to visual resources for those portions of the project within the respective jurisdictional boundaries. The power plant would be located on a site that is partially in the City and partially in the County and within the Sphere of Influence of the City. The northern portion of the site is in the County and the southern portion is in the City. Linear facilities also would be located in the City and in the County. The northern portion of the proposed 240-foot-long electric transmission line from the plant to an existing transmission tower and portions of proposed water, sewer, and gas lines would be in the County. Also, a gas metering station would be located east of and near Highway 101 in the County. All other elements of the proposed project would be in the City of San Jose. Applicable laws, ordinances, regulations, and standards are identified below and are from the *San Jose 2020 General Plan* (City of San Jose 1994b*), San Jose Zoning Ordinance* (City of San Jose 1997), *Master Development Plan and Guidelines for the North Coyote Valley Campus Industrial Area* (City of San Jose 1985), *and Santa Clara County General Pla*n (Santa Clara County 1994).

CITY OF SAN JOSE

SAN JOSE 2020 GENERAL PLAN

Relevant policies from the San Jose 2020 General Plan are from the Community Development/Urban Design Element; Aesthetic, Cultural, and Recreational Resources/Scenic Routes Element; and the Land Use/Transportation Diagram, Scenic Routes and Trails Diagram, Scenic Routes.

Community Development/Urban Design

11. Non-Residential building height should not exceed 45 feet except:

    In the North Coyote Valley and South Edenvale Areas designated for Campus Industrial Use, the maximum building height is 120 feet (p. 57).

For public or quasi-public uses on properties in any area of the community with a Public/Quasi-Public designation, the maximum building height is 95 feet (p. 57).

For structures, other than buildings, where substantial height is intrinsic to the function of the structures and where such structures are located to avoid significant adverse effects on adjacent properties, height limits may be established in the context of project review (p. 58).

The project site is located within the area designated for development of the North Coyote Valley Campus Industrial Area (City of San Jose 1985). The City has clarified that the standards and guidelines identified within the master development plan for this area are applicable for any and all development in North Coyote Valley regardless of the General Plan designation . The City has further stated that the master development plan is intended to guide the development of a world-class research/technology park in keeping with the City s longstanding economic development goals and this plan goes beyond development standards to articulate the character of this planned, high-quality, campus industrial area .

17. Development adjacent to creekside areas should incorporate compatible design and landscaping including plant species, which are native to the area or are compatible with native species (p. 60).

24. New development projects should include the preservation of ordinance-sized and other significant trees. Any adverse effect on the health and longevity of such trees should be avoided through appropriate design measures and construction practices. When tree preservation is not feasible, the project should include appropriate tree replacement (p.˚60).

Aesthetic, Cultural, and Recreational Resources/Scenic Routes

5. Any development occurring adjacent to Landscaped Throughways should incorporate interesting and attractive design qualities and promote a high standard of architectural excellence (p. 90).

6. Development along designated Rural Scenic corridors should preserve significant views of the Valley and mountains, especially in, or adjacent to, Coyote Valley, the Diablo Range, the Silver Creek Hills, the Santa Teresa Ridge, and the Santa Cruz Mountains (p. 90).

Trails and Pathways

1. The City should control land development along designated Trails and Pathway Corridors in order to provide sufficient trail right-of-way and ensure that new development adjacent to the corridors does not detract from the scenic and aesthetic qualities of the corridor (p. 91).

Riparian Corridors and Upland Wetlands Policies

4. New development should be designed to protect adjacent riparian corridors from encroachment of lighting, exotic landscaping, noise, and toxic substances into the riparian zone (p. 95).

Land Use/Transportation Diagram, Scenic Routes and Trails Diagram, Scenic Routes

Permitted land uses in Rural Scenic Corridors should be limited to well landscaped campus industrial uses, single-family residences, agriculture, parks, trails, and other open space uses in order to preserve the natural scenic resources.

MASTER DEVELOPMENT PLAN AND GUIDELINES FOR THE NORTH COYOTE VALLEY CAMPUS INDUSTRIAL AREA

The proposed project lies within the area designated by the City of San Jose as the North Coyote Valley Campus Industrial Area. The plan and guidelines state that The Guidelines set forth the desired overall perceptual quality of the Development Plan and its elements. They provide written and graphic indications as to size, form, scale and basic organization of the individual private parcels and public open space in a hierarchy of purpose and unity .

Numerous guidelines contained within the current master plan provide direction for developing and maintaining a high level of aesthetic quality and preserving the present rural aspect of the area. The following guidelines contained within the current plan (City of San Jose 1985) are representative of guidelines applicable to visual resources.

Public Improvement Guidelines

Improvements and Jurisdiction

Trees will be preserved whenever possible both on and in areas adjacent to the Campus Industrial Area (p. 26).

From the Urban Service Boundary to Tulare Hill:

Plant 50-foot landscape area with groupings and groves of tall broadleaf evergreen trees, walnuts, native shrubs and groundcovers (p. 30).

Allow view windows to hills beyond (p. 30).

Private Improvement Guidelines

Retain, as much as possible, the views from roadways and developed areas to the hills that form the Valley. The preservation of such views is a major contribution to maintaining the rural character of the area (p. 58).

Building Edge: Vary the setback of buildings to increase visual interest. Break up building mass to allow views between buildings to surrounding landforms (p. 61).

Building Height: Overall building height shall not exceed the height limitations set forth in Urban Design Policy #11 of the General Plan (City of San Jose 1985, p. 62).

Rooftop Equipment: Rooftop mechanical equipment should be consolidated within parapet walls which exceed the height of the equipment. Equipment enclosures should be integrated into the architectural design treatment of the building. Rooftop equipment should be hidden from view from hillsides and elevated entry roads into the valley (p. 63).

Flood Control Channel Edge: Development areas will be separated from the riparian landscape of the flood control channel by a 50 foot landscape easement. Native plant materials must be used to extend the landscape within this zone. Security fences will be screened by landscape within this easement (p. 67).

Adjacent Properties Edge: Adjacent properties will be separated by 15 feet of landscaping. Planting within these setbacks will be used to screen security fences (p. 68).

Monterey Highway: A 50 foot landscape easement will separate properties from the Southern Pacific right-of-way. Hedges will be used to separate buildings and railroad traffic. Security fences will occur on property lines. Building facades facing Monterey Highway should receive consistent architectural treatment. Service and storage areas must be totally screened from view at the time of construction (p. 69).

Major Entry Landscape: Major entrances to properties will be visually marked using tall trees. Typical street planting within the front landscape setback should be visually integrated with the landmark entrance landscape (p. 70).

Parking Lot Illumination: Maintain a uniform distribution of light throughout parking areas. Low-sodium fixtures must be used and maximum parking lot illumination shall not exceed .5 fc. Light sources should not be visible from streets. Luminaire height should be uniform over the parking area and should not exceed 15-20 feet. Fixtures should be visually compatible with the landscape treatment of the parking area. Pedestrian pathways should be illuminated

separately to a maximum of .8 fc. Exterior flood lighting of buildings is prohibited (p. 72).

Building Landscape: The concept of rural building massing will be reinforced with tall and columnar trees to create a skyline landscape which will visually contrast with the surrounding orchard parking landscape. The central building grouping should be the most lush and ornamental planting area of each campus (p. 73).

General Development Plan Standards

12. All truck loading docks, storage and service areas shall be screened from public view, and shall be located a minimum of 75 feet from any property line. In no case shall such docks, storage or service area be visible from any public street or from Fisher Creek (p. 86).

RIPARIAN CORRIDOR POLICY STUDY

The following policies and guidelines are from the City s Riparian Corridor Policy Study (1994a) and are intended to preserve and enhance the visual character and quality of the corridors of the City s major waterways. The project s compliance with these policies and guidelines is described below.

Chapter 1: Riparian Corridor Policies and Related Programs

Relationship to Horizon 2000 General Plan

Trails and Pathways

1. The City should control land development along designated Trails and Pathway Corridors in order to provide sufficient trail right-of-way and ensure that new development adjacent to the corridors does not detract from the scenic and aesthetic qualities of the corridor (p. 7).

Chapter 3: Riparian Corridor Development Guidelines

Site Design

Guideline 1A: Orientation

Site activities should be oriented to draw activity away from the riparian corridor, for example, entrances, loading and delivery areas, noise generating activities and equipment, and activities requiring night lighting should be oriented toward non-riparian property edges (p. 30).

2. Building and Fixture Design

Guideline 2A: Building Appearance

In riparian forest settings located in more rural or suburban areas of the city, building facades should blend visually with the surrounding natural landscape. The colors of buildings should generally be of darker earth tones (e.g., brown, tan, gray, or greens); the use of bright colors and glossy finishes are discouraged (p. 41).

Guideline 2B: Glare

Building materials should not produce glare that would adversely impact the riparian corridor. Windows should not be mirrored but otherwise their use is not limited (p. 41).

Guideline 2C: Visual

The adverse visual impact of existing or unavoidable incompatible uses such as parking areas, loading zones, trash enclosures, mechanical devices, and similar accessory uses should be minimized by landscaping, hedging, berming, low walls, and site design. Rooftop equipment should be screened from view from any riparian corridor trail or recreational, educational, or interpretive facilities within the riparian corridor (p. 41).

Guideline 2D: Signs

Signs associated with land uses that are adjacent to the riparian corridor and that are not related to complementary recreational or public safety services should be oriented away from the riparian corridor to avoid impacting recreational users of the corridor, or attracting otherwise unnecessary access and activity (p. 42).

Guideline 2E: Lighting

All trail corridors, except for the Guadalupe River Downtown, are closed after sunset, and as such do not have lighting (except for security lighting at bridge under-crossings). For all other developments, lighting within the corridor and setback areas should be avoided. Lighting on development sites should be designed and sited to avoid light and glare impacts to wildlife within the riparian corridor, consistent with public safety considerations. Any lighting located adjacent to riparian areas should be as low as feasible in height (bollard lighting is preferred) and must be directed downward with light sources not visible from riparian areas (p. 42).

Parking lot lighting near a riparian edge (e.g., with minimum setbacks from the corridor) should be avoided if nighttime use of that portion of the parking lot is unlikely (p. 42).

3. Landscaping

Guideline 3A: Development Landscaping

Landscaping of areas adjacent to the riparian corridor should generally utilize plant species native to central California and appropriate to the riparian habitat type of the corridor. In some areas, remnant riparian species (e.g., remnant sycamore, and valley oak trees) exist outside the mapped riparian corridor. These species should be retained in the development plan. Non-native species may not be planted within the riparian corridor, and invasive exotics should not be used in landscaping within 100 feet of a riparian corridor. Refer to Appendix B for lists of plant species suitable and unsuitable for revegetation within riparian corridors and in riparian setback areas. Refer also to any applicable master landscape plans for landscape requirements (p. 42).

Guideline 3B: Irrigation

Irrigation systems within 100 feet of riparian areas should be designed to avoid negative impacts to riparian environment conditions (p. 42).

SAN JOSE ZONING ORDINANCE

The applicability of the San Jose zoning ordinance to the project is discussed in the Land Use section of this Decision.

SANTA CLARA COUNTY

SANTA CLARA COUNTY GENERAL PLAN

Portions of the proposed project, including linear elements and the northern portion of the power plant site, would be located on lands under the jurisdiction of Santa Clara County. Policies of the Santa Clara County General Plan (1994) that pertain to visual resources are described below. Policies are for rural unincorporated areas (R) in the categories of land use (LU) and resource conservation (RC) and countywide issues and policies (C) in the categories of parks and recreation (PR) and growth and development (GD).

R-LU 73

The County s major gas and electric distribution system should be compatible with the environmental resources and scenic qualities of the County.

R-LU 74

In locating major gas and electric transmission distribution facilities, the primary environmental considerations shall be to minimize aesthetic impacts and to avoid

developed residential and/or public recreation areas. Major electric transmission lines should be located and designed in accordance with the following principles:

- Route selection should avoid ridgelines and follow the natural flow and rhythm of landforms as much as possible.
- Routes should not cross scenic roads at points where lines will be visible for long distances.
- Minimum height structures should be used to reduce visual impacts where the additional structures which result are not objectionable.
- Vegetation should be used for screening where it will not interfere with a facility s operation.
- Design, appearance, and paint selection should reduce visual impact.

R-LU 75

Electric substations and gas control metering stations shall be located, designed, and landscaped to fit as inconspicuously and harmoniously as possible into the area in which they are required. Locations along scenic roads and heavily traveled highways should be avoided.

R-RC 97

Scenic qualities of the rural areas of Santa Clara County shall be maintained and enhanced through existing land use and development policies. Development compatible with scenic resource conservation should be encouraged.

C-PR 37

The natural scenery along many of Santa Clara County s highways should be protected from land uses and other activities which would diminish its aesthetic beauty.

C-PR 38

Land use should be controlled along scenic roads so as to relate to the location and functions of these roads and should be subject to design review and conditions to assure the scenic quality of the corridor.

C-PR 39

The visual integrity of the scenic gateways to the South County (. Coyote greenbelt area north of Morgan Hill) should be protected.

C-GD 17

Planning for Coyote Valley s future development should provide for: c. protection of a scenic corridor along Highway 101.

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 Department of Toxic Substances Control (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.

LOCAL

There are no local LORS for waste management.

WORKER SAFETY AND FIRE PROTECTION

FEDERAL

In December 1970, Congress enacted Public Law 91-596, the Federal Occupational Safety and Health Act of 1970 (the Act). The Act mandates safety requirements in the workplace and is found in Title 29 of the United States Code, ⁄651 (29 U.S.C.⁄⁄651 through 678). This public law is codified at Title 29 of the Code of Federal Regulations, under General Industry Standards, Parts 1910.1 through 1910.1450 (29 CFR Part 1910.1 - 1910.1450) and clearly defines the procedures for promulgating regulations and conducting inspections to implement and enforce safety and health procedures to protect workers, particularly in the industrial sector. Most of the safety and health standards now in force under the Act for general industry represent a compilation of materials authorized by the Act from existing federal standards and national consensus standards. These include standards from the voluntary membership organizations of the American National Standards Institute (ANSI), and the National Fire Protection Association (NFPA) which publishes the National Fire Codes.

The congressional purpose of the 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 Act.

- Applicable Federal requirements include:
- 29 U.S. Code⁄651 et seq. (Occupational Safety and Health Act of 1970);
- 29 CFR Part 1910.1-1910.1450 (Occupational Safety and Health Administration Safety and Health Regulations);
- 29 CFR Part 1952.170-1952.175.

(Federal approval of California s plan for enforcement of its own Safety and Health requirements, in lieu of most of the Federal requirements found in 29 CFR Part 1910.1-1910.1500)

STATE

California passed the Occupational Safety and Health Act of 1973 (Cal/OSHA) as published in the California Labor Code⁄6300 et seq. Regulations promulgated as a result of the Act are codified at Title 8 of the California Code of Regulations, beginning with Part 450 (8 CCR Part 450 et seq.) The California Labor Code

requires that the State Standards Board must adopt standards at least as effective as the federal standards which have been, promulgated [Labor Code ⁄142.3(a)]. Health and Safety laws meet or exceed the Federal requirements. Hence, California obtained federal approval of its State health and safety regulations in lieu of the federal requirements published at 29 CFR Parts 1910.1 - 1910.1500). The Federal Secretary of Labor, however, continually oversees California s program and will enforce any federal standard for which the State has not adopted a Cal/OSHA counterpart.

The State of California Department of Industrial Relations is charged with the 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 to insure that their employees are informed 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 Material Safety Data Sheet (MSDS) (8 CCR ⁄ 5194). This regulation was promulgated in response to California s Hazardous Substances Information and Training Act of 1990 (1980 ⁄ 874 and Labor Code ⁄⁄ 6360-6399.7). It mirrored the Federal Hazard Communication Standard (29 CFR Part 1910.1200) which established an employee s right to know about chemical hazards in the workplace, and added the provision of applicability to public sector employers.

Finally, California Senate Bill 198 requires that employers establish and maintain a written Injury and Illness Prevention Program to identify workplace hazards and communicate them to its employees through a formal employee-training program (8 CCR⁄3203).

Applicable State requirements include:

- 8 CCR ⁄ 339 - List of hazardous chemicals relating to the Hazardous Substance Information and Training Act;
- 8 CCR⁄450, et seq. (Cal/OSHA regulations);
- 24 CCR⁄3, et seq. - incorporates the current addition 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; and
- Health and Safety Code ⁄ 255000 - 25541 - Hazardous Material Business Plan detailing emergency response plans for hazardous materials emergency at the facility

LOCAL

The California Building Standards Code published at Title 24 of the California Code of Regulations, (24 CCR／ 3, et seq.) is comprised of eleven parts containing the building design and construction requirements relating to fire and life safety and structural safety. The Building Standards Code includes the electrical, mechanical, energy, and fire codes applicable to the project. Local planning /building & safety departments enforce the California Uniform Building Code.

National Fire Protection Association (NFPA) standards are published in the California Fire Code. The fire code contains general provisions for fire safety, including but not restricted to: 1) required road and building access; 2) water supplies; 3) installation of fire protection and life safety systems; 4) fire-resistive construction; 5) general fire safety precautions; 6) storage of combustible materials; 7) exits and emergency escapes; and 8) fire alarm systems. The California Fire Code is published at Part 9 of Title 24 of the California Code of Regulations.

Similarly the Uniform Fire Code Standards, a companion publication to the California Fire Code, contains standards of the American Society for Testing and Materials and the NFPA. It is the United States premier model fire code. It is updated annually as a supplement and published every third year by the International Fire Code Institute to include all approved code changes in a new edition.

Applicable local requirements include:

- 1998 Edition of California Fire Code and all applicable NFPA standards (24 CCR Part 9);
- Uniform Fire Code Standards; and
- California Building Code Title 24, California Code of Regulations Part 3, et seq.

Appendix B

Proof of Service List

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

Application for Certification for the Metcalf Energy Center [Calpine Corporation and Bechtel Enterprises, Inc.]	**Docket No. 99-AFC-3**

PROOF OF SERVICE

I declare that on _____, I deposited copies of the attached_____at Sacramento, CA with first class postage thereon fully prepaid and addressed to the following:

DOCKET UNIT

CALIFORNIA ENERGY COMMISSION
DOCKET UNIT, MS-4
1516 Ninth Street
Sacramento, CA 95814-5512
docket@energy.state.ca.us

APPLICANT

Ken Abreu
Calpine Corporation
6700 Koll Center Parkway, Suite 200
Pleasanton, CA 94566

Counsel for Applicant

Jeffrey D. Harris, Esq.
Ellison & Schneider
2015 H Street
Sacramento, CA 95814

INTERVENORS

Scott & Donna Scholz
6464 San Anselmo Way
San Jose, CA 95119-1928
ascholz@southsanjose.com

California Unions for Reliable Energy
Marc D. Joseph
Adams, Broadwell, Joseph & Cardozo
651 Gateway Boulevard, Suite 900
South San Francisco, CA 94080
mdjoseph@adamsbroadwell.com

City of Morgan Hill
J. Edward Tewes, City Manager
Council Member Steve Tate
17555 Peak Avenue
Morgan Hill, CA 95037
etewes@ch.morgan-hill.ca.gov
tate@us.ibm.com

Elizabeth Cord
Santa Teresa Citizens Action Group
286 Sorenta Way
San Jose, CA 95119-1437
staction@aol.com

Jeffrey Wade
7293 Forsum Road
San Jose, CA 95138
jeff.wade@lmco.com

Californians for Renewable Energy
C/O Michael E. Boyd
821 Lakeknoll Drive

Sunnyvale, CA 94089
mike.boyd@aspect.com
Paul R. Burnett
1960 Llagas Road
Morgan Hill, CA 95037
pburnett@garlic.com

Robert F. Williams
7039 Via Pradera
San Jose, CA 95139-1152
williams4064@earthlink.net

T.H.E. P.U.B.L.I.C.
William J. Garbett, Agent
P.O. Box 36132
San Jose, CA 95158-6132

Michael Murphy
6188 Ansdell Way
San Jose, CA 95123
murphysmailbox@juno.com

Michael A. Grothus
7135 Bonny Brook Ct.
Niwot, CO 80503-8514
mgrothus@aol.com

James L. Cosgrove
321 Viscaino Way
San Jose, CA 95119
jimcos42@worldnet.att.net

Rancho Santa Teresa Swim & Racquet
John E. Wiktorowicz, Ph.D.
6416 San Anselmo Way
San Jose, CA 95119
dr_j@pacbell.net

Counsel for Coyote Valley Research Park, LLC, and Coyote Valley Properties, LLC:

Dian M. Grueneich, J.D.
Grueneich Resource Advocates
582 Market Street, Suite 1020
San Francisco, CA 94104
dgrueneich@gralegal.com

Counsel for Coyote Valley Research Park, LLC, and Coyote Valley Properties, LLC:
Roger Beers
2930 Lakeshore Avenue, Suite 408
Oakland, CA 94610
Rbeers@rbeerslaw.com

Randolph F. Lamb, V.P.
Gibson, Speno, LLC
60 South Market St., Suite 1120
San Jose, CA 95113-2369

David Marcus
P.O. Box 1287
Berkeley, CA 94701-1287

CVRP
c/o Divco West Properties, LLC
Attn: Mr. Vic Fracaro
150 Almaden Blvd., Suite 700
San Jose, CA 95113
vfracaro@divco.com

Issa Ajlouny
168 Sprucemont Place
San Jose, CA 95139
iajlouny@us.ibm.com

Mirant Potrero, LLC
Mark H. Harrer
1350 Treat Blvd. Suite 500
Walnut Creek, CA 94596-
7578Mark.harrer@mirant.com

Emilio E. Varanini, III
Livingston & Mattesich, LLP
1201 K Street, 11th Floor
Sacramento, CA 95814

INTERESTED AGENCIES

Laurel Prevetti
Kent Edens
Planning Department
City of San Jose

801 N. First Street, Room 400
San Jose, CA 95110
kent.edens@ci.sj.ca.us

Janis Moore, Planner II
City of San Jose
Planning, Building and Code Enforcement
801 N. First Street, Room 400
San Jose, CA 95110-1795
janis.moore@ci.sj.ca.us

Independent System Operator
Steve Mavis, Manager
151 Blue Ravine Road
Folsom, CA 95630
pmackin@caiso.com

James McDonald, Principal
Encinal Elementary School
9530 N. Monterey Rd.
Morgan Hill, CA 95037
pjfoehr@encinal.mhu.k12.ca.us

Supervisor Don Gage
Santa Clara County
70 West Hedding
San Jose, CA 95110

Councilmember Forrest Williams
City of San Jose
801 North First Street
San Jose, CA 95110
Forrest.williams@ci.sj.ca.us

William deBoisblanc, Director Permit Services
Bay Area Air Quality Mgmt. District
939 Eillis Street
San Francisco, CA 94109
wdeboisblanc@baaqmd.gov

Luis Jaimes
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118-3686
ljaimes@scvwd.dst.ca.us

Michael Lopez, Planning Office
Santa Clara County Govt. Center
70 West Hedding, East Wing, 7th Floor
San Jose, CA 95110-1705
rachael.gibson@pln.co.Scl.ca.us

Electricity Oversight Board
Gary Heath, Executive Director
770 L Street, Suite 1250
Sacramento, CA 95814
tflynn@eob.ca.gov

Paul Clanon, Director
Energy Division
California Public Utilities Commission
555 Van Ness Avenue
San Francisco, CA 94102
pac@cpuc.ca.gov

Michelle Geary
Guadalupe-Coyote Resource
Conservation District
888 North First Street, Room 204
San Jose, CA 95112

California Air Resources Board (CARB)
Michael Tollstrup
Project Assessment Branch
P.O. Box 2815
Sacramento, CA 95812
mtollstr@arb.ca.gov

I declare that under penalty of perjury that the foregoing is true and correct.

_____

(Signature)

Appendix C

Exhibit List

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

IN THE MATTER OF: APPLICATION FOR CERTIFICATION FOR THE **METCALF ENERGY CENTER** (CALPINE CORPORATION AND BECHTEL Enterprises, Inc.)	DOCKET NO. 99-AFC-3

EXHIBIT LIST

EXHIBIT 1: Application for Certification for the Metcalf Energy Center, Volumes 1 & 2, dated April 1999. Sponsored by Applicant; portions admitted into evidence on January 8, 9, 17, 18, 19, 30, 31, and March 13, 2001.

EXHIBIT 2: Errata Sheet for Volume 1 of the Application for Certification, replacing Table of Contents pages and section 8.3 (Cultural Resources). Sponsored by Applicant; admitted into evidence on March 13, 2001.

EXHIBIT 3: Supplement A to the Application for Certification, dated October 1, 1999. Sponsored by Applicant; portions admitted into evidence on January 8, 9, and March 1, 2001.

EXHIBIT 4: Supplement B to the Application for Certification, dated October 15, 1999. Sponsored by Applicant; admitted into evidence on March 13, 2001.

EXHIBIT 5: Supplement C to the Application for Certification, dated February 15, 2000. Sponsored by Applicant; portions admitted into evidence on January 8, 9, and March 1, 2001.

EXHIBIT 6A: Group I Testimony, dated December 7, 2000. Sponsored by Applicant; admitted into evidence on January 8 and 9, 2001.

EXHIBIT 6B: Notice of Substitution of Cultural Resources witness (with declaration and resume), dated December 26, 2000. Sponsored by Applicant; admitted into evidence on January 9, 2001.

EXHIBIT 7: Final Staff Assessment for the Metcalf Energy Center, dated October 2000. Sponsored by Staff; portions admitted into evidence on January 8, 9, 17, 18, 19, 30, 31; February 15; March 2, 12, 13, 14, 2001.

EXHIBIT 8: Group 2A Testimony (Noise, Soil and Water Resources, Traffic and Transportation, Hazardous Materials Management), dated December 20, 2000. Sponsored by Applicant; admitted into evidence on January 18 and 19, 2001.

EXHIBIT 9: Rebuttal Testimony on Cultural Resources, dated December 29, 2000. Sponsored by Applicant; admitted into evidence on January 9, 2001.

EXHIBIT 10: Group 2B Testimony (Socioeconomic Resources and Land Use), dated December 29, 2000. Sponsored by Applicant; admitted into evidence on January 31, 2001.

EXHIBIT 11: Group 1 Final Staff Assessment Changes (Facility Design and Cultural Resources), dated January 4, 2001. Sponsored by Staff; admitted into evidence on January 8 and 9, 2001.

EXHIBIT 12: Information related to the location of the natural gas metering station, dated April 19, 2000. Submitted by Applicant; admitted into evidence on January 8, 2001.

EXHIBIT 13: Responses to CEC Data Requests 41, 42, 43, 44, 45 (Portions of Set 1A), dated June 23, 1999. Sponsored by Applicant; portions admitted into evidence on January 8, and March 12, 2001.

EXHIBIT 14: Response to CEC Data Request 184 (Set 2B) , dated October 25, 1999. Sponsored by Applicant; admitted into evidence on January 8, and March 12, 2001.

EXHIBIT 15: Response to CEC Data Request 239 (Portion of Set 4A), dated August 30, 2000. Sponsored by Applicant; admitted into evidence on January 18, 2001.

EXHIBIT 16A: Responses to the Jeffrey Wade Data Requests 1-31, docketed August 21, 1999, identified as Data Responses, Set JW-1A. Sponsored by Applicant; portions admitted into evidence on January 8, and March 1, 2001.

EXHIBIT 16: Responses to Jeffrey Wade Data Requests 35-71 dated November 8, 1999, identified as "Data Responses, Set 2." Sponsored by Applicant; portions admitted into evidence on January 8, and March 1, 2001.

EXHIBIT 17: Responses to CVRP Data Requests 5a, 5b, 5c, dated April 4, 2000, identified as Coyote Valley, Set 1. (1/8/01 RT, 21:9) Sponsored by Applicant; portions admitted into evidence on January 8, and March 12, 2001.

EXHIBIT 18: Response to CVRP Data Requests, dated August 9, 2000, identified as Coyote Valley, Set 4B. Sponsored by Applicant; portions admitted into evidence on January 8, and February 15, 2001.

EXHIBIT 19: Response to informal CEC Data Requests regarding the Revised Grading and Drainage Plan and the Revised Boring Plan, dated March 10, 2000. Sponsored by Applicant; admitted into evidence on January 8, 2001.

EXHIBIT 20: Data Responses, Set 1C to the CEC Data Requests 1-152, dated June 23, 1999. Sponsored by Applicant; portions admitted into evidence on January 8, and March 1, 2001.

EXHIBIT 21: Data Responses, Set 2C to the CEC Data Requests 153-215, dated September 24, 1999. Sponsored by Applicant; portions admitted into evidence on January 8, 18, and March 13, 2001.

EXHIBIT 22: Data Responses, Set 5 to the CEC Data Requests 240-246, dated April 25, 1999. Sponsored by Applicant; admitted into evidence on January 8, 2001.

EXHIBIT 23: Applicant Comments (Set 7) on the CEC Preliminary Staff Assessment Workshops held during June 13-15 and June 20-22, 2000, dated June 30, 2000. Sponsored by Applicant; portions admitted into evidence on January 8, and March 13, 2001.

EXHIBIT 24: Applicant Comments on the CEC Preliminary Staff Assessment (Set 2), dated June 7, 2000. Sponsored by Applicant; portions admitted into evidence on January 8, and March 12, 2001.

EXHIBIT 25: Letter dated August 11, 2000, to Patrick E. Chew, City of San Jose, regarding Fire Protection Requirements for the Metcalf Energy Center. Sponsored by Applicant; admitted into evidence on January 8, 2001.

EXHIBIT 26: Data Responses to CEC Data Requests 35, 38, 39 (Portions of Set 1D), dated September 17, 1999. Sponsored by Applicant; portions admitted into evidence on January 8, and March 13, 2001.

EXHIBIT 27: Data Responses to CEC Data Requests 162, 163, 164, 166, 167, 168, 169, 171, 173, 174 (Portions of Set 2A), dated October 15, 1999. Sponsored by Applicant; portions admitted into evidence on January 8, and March 12, 2001.

EXHIBIT 28: Data Response to CEC Data Request 173 (Set 2F), dated November 30, 2000. Sponsored by Applicant; admitted into evidence on January 9, 2001.

EXHIBIT 29: Data Responses to the CEC Data Requests 3-218, 3-219, 3-220, 3-221, 3-222, 3-223 (Portions of Set 3B), dated January 4, 2000. Sponsored by Applicant; portions admitted into evidence on January 8, and March 13, 2001.

EXHIBIT 30: Applicant comments on the CEC Preliminary Staff Assessment, Set 9, including supplemental information on Noise, Visual, Water Resources and Alternative Sites, dated July 31, 2000. Sponsored by Applicant; portions admitted into evidence on January 8, and March 13, 2001.

EXHIBIT 31: Testimony of Randolph Shipes on behalf of City of San Jose, dated January 3, 2001. Sponsored by City of San Jose; admitted into evidence on January 18, 2001.

EXHIBIT 32: Group II Testimony on Traffic, Transportation and Hazardous Materials Management, dated January 3, 2001. Sponsored by Intervenor Ajlouny; admitted into evidence on January 18, 2001.

EXHIBIT 33: CVRP s Group 2A Testimony on Hazardous Materials Management, dated January 4, 2001. Sponsored by Intervenor CVRP; admitted into evidence on January 19, 2001.

EXHIBIT 34: Applicant s Rebuttal Testimony for Water Resources and Hazardous Materials Management, dated January 10, 2001. Sponsored by Applicant; portions admitted into evidence on January 18 and 19, 2001.

EXHIBIT 35: CVRP s Group 2A Testimony on Noise, dated January 11, 2001. Sponsored by Intervenor CVRP; admitted into evidence on January 17, 2001.

EXHIBIT 36: Applicant s Rebuttal Testimony on Hazardous Materials Management, Group 2A (Set 2), dated January 11, 2001. Sponsored by Applicant; admitted into evidence on January 19, 2001.

EXHIBIT 37: Applicant s PSA comments re Soil and Water Resources (Set 1), dated May 26, 2000. Sponsored by Applicant; admitted into evidence on March 13, 2001.

EXHIBIT 38: Applicant s PSA comments re Noise, Transmission System Engineering, Alternatives, and Soil and Water Resources (Set 3), dated June 9, 2000. Sponsored by Applicant; admitted into evidence on March 12, 2001.

EXHIBIT 39: Applicant s PSA comments re Soil and Water Resources (Set 5), dated June 15, 2000. Sponsored by Applicant; admitted into evidence on March 13, 2001.

EXHIBIT 40: Applicant s PSA comments re Soil and Water Resources (Set 10), dated July 31, 2000. Sponsored by Applicant; admitted into evidence on February 15 , 2001.

EXHIBIT 41: Letter from Santa Clara Valley Water District (SCVWD) to Paul Richins, dated December 2, 1999. Sponsored by Applicant; admitted into evidence on January 18, 2001.

EXHIBIT 42: Letter from SCVWD to Paul Richins, dated April 14, 2000. Sponsored by Applicant; admitted into evidence on January 18, 2001.

EXHIBIT 43: Letter from SCVWD to Paul Richins, dated July 6, 2000. Sponsored by Applicant; admitted into evidence on January 18, 2001.

EXHIBIT 44: Letter from SCVWD to Paul Richins, dated July 31, 2000. Sponsored by Applicant; admitted into evidence on January 18, 2001.

EXHIBIT 45: Letter from SCVWD to Paul Richins, dated September 6, 2000. Sponsored by Applicant; admitted into evidence on January 18, 2001.

EXHIBIT 46: Applicant's responses to CEC Data Requests 128, 135, 141, 144 (Set 1D), dated October 1, 1999. Sponsored by Applicant; admitted into evidence on February 15, 2001.

EXHIBIT 47: Response to CEC Data Request 134 (Portion of Set 1F), dated October 15, 1999. Sponsored by Applicant; admitted into evidence on March 13, 2001.

EXHIBIT 48: Response to CEC Data Request 133 (Set 1H), Summary of Water Supply Issues, dated April 19, 2000. Sponsored by Applicant; admitted into evidence on January 18, 2001.

EXHIBIT 49: Response to CEC Data Request 147 (Set 1K), dated July 28, 2000. Sponsored by Applicant; admitted into evidence on January 18, 2001.

EXHIBIT 50: Response to CEC Data Request 146 (Set 1L), dated July 31, 2000. Sponsored by Applicant; admitted into evidence on January 18, 2001.

EXHIBIT 51: Response to CEC Data Request 155 (Portions of Set 2E), dated July 31, 2000. Sponsored by Applicant; admitted into evidence on February 15, 2001.

EXHIBIT 52A: Response to CEC Data Request 3-216 (Set 3E), dated April 26, 2000. Sponsored by Applicant; admitted into evidence on February 15, 2001.

EXHIBIT 52B: Response to CEC Data Request 3-216 (Set 3F), dated July 6, 2000. Sponsored by Applicant; admitted into evidence on February 15, 2001.

EXHIBIT 53: Response to CEC Data Request 3-217 (Portion of Set 3C), dated January 28, 2000. Sponsored by Applicant; admitted into evidence on March 13, 2001.

EXHIBIT 54: Informal Data Response to Lorraine White (Part A) re Soil and Water Resources, dated September 1, 2000. Sponsored by Applicant; admitted into evidence on January 18, 2001.

EXHIBIT 55: Informal Data Response to Lorraine White (Part B), re Soil and Water Resources, dated September 7, 2000. Sponsored by Applicant; admitted into evidence on January 18, 2001.

EXHIBIT 56: CEC Informal Data Responses, Water Resources WR-1 to WR-4. Sponsored by Applicant; admitted into evidence on January 18, 2001.

EXHIBIT 57: Responses to CVRP Data Requests 5F, 6, 7 (Portions of Set 3), dated August 18, 2000. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 58: Responses to CVRP Data Requests Part C, Nos. 15, 16 (Set 4B), dated September 15, 2000. Sponsored by Applicant; admitted into evidence on March 13, 2001.

EXHIBIT 59: Response to CVRP Data Request 17 (Set 5), dated September 27, 2000. Sponsored by Applicant; admitted into evidence on March 13, 2001.

EXHIBIT 60: Response to Rancho Santa Teresa Swim & Racquet Club Data Request 4 (Set 1), dated July 14, 2000. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 61: Memorandum from Applicant to Lorraine White re water supply issues, dated April 19, 2000. Sponsored by Applicant; admitted into evidence on January 18, 2001.

EXHIBIT 62: Duplicate of material in Exhibit 34; see transcript of January 19, 2001.

EXHIBIT 63: Letter from Ken Abreu to Paul Richins re wastewater discharge terms and conditions, dated September 15, 2000. Sponsored by Applicant; admitted into evidence on January 18, 2001.

EXHIBIT 64: Letter from Ken Abreu to Paul Richins re industrial wastewater discharge, dated September 26, 2000. Sponsored by Applicant; admitted into evidence on January 18, 2001.

EXHIBIT 65: Memorandum from Randolph Shipes to Richard Buikema re water supply, dated November 7, 2000. Sponsored by Applicant; admitted into evidence on January 18, 2001.

EXHIBIT 66: Applicant s PSA comments on the Western Access Road (Set 8), dated July 14, 2000. Sponsored by Applicant; admitted into evidence on February 15, 2001.

EXHIBIT 67: Responses to CVRP Data Requests 8A to 8BB, 10A-10C (Set 3). Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 68: Group 2B FSA changes re Socioeconomics, dated January 12, 2001. Sponsored by Staff; admitted into evidence on January 30, 2001.

EXHIBIT 69: Group II B Testimony on Property Value (Tim Ryan), dated January 12, 2001. Sponsored by Intervenor STCAG; admitted into evidence on January 30, 2001.

EXHIBIT 70: Group II B Testimony on Property Value (Laurie Hansen), dated January 12, 2001. Sponsored by Intervenor STCAG; admitted into evidence on January 30, 2001.

EXHIBIT 71: Group II B Testimony on Environmental Justice (Jay Mendoza), dated January 12, 2001. Sponsored by Intervenor STCAG; admitted into evidence on January 30, 2001.

EXHIBIT 72: Group II B Testimony on Community Petitions (Elizabeth Cord), dated January 12, 2001. Sponsored by Intervenor STCAG; admitted into evidence on January 30, 2001.

EXHIBIT 73: Testimony on Socioeconomics (Watkins), dated January 12, 2001. Sponsored by Intervenor RSTS & RC; admitted into evidence on January 30, 2001.

EXHIBIT 74: Group 2B FSA changes re Land Use, dated January 12, 2001. Sponsored by Staff; admitted into evidence on January 31, 2001.

EXHIBIT 75: Comments/Testimony of Mayor Ron Gonzalez re Land Use, dated January 12, 2001. Sponsored by City of San Jose; substance orally delivered at March 23, 2001 public comment hearing.

EXHIBIT 76: Testimony of Kent Edens re Land Use, dated January 12, 2001. Sponsored by City of San Jose; admitted into evidence on January 31, 2001.

EXHIBIT 77: Applicant s rebuttal to the City of San Jose Testimony re Land Use (Edens), dated January 22, 2001. Sponsored by Applicant; admitted into evidence on January 31, 2001.

EXHIBIT 78: Response to CEC Data Request 70 (Set 1N), dated November 27, 2000. Sponsored by Applicant; admitted into evidence on January 30, 2001.

EXHIBIT 79: Responses to CEC Data Requests 185 and 186 (Set 2D), dated November 24, 1999. Sponsored by Applicant; admitted into evidence on January 30, 2001.

EXHIBIT 80: Responses to Jeff Wade Data Requests 14 and 15(Set 1B), dated November 3, 1999. Sponsored by Applicant; admitted into evidence on February 15, 2001.

EXHIBIT 81: Endorsement of the MEC project by the NAACP, dated January 11, 2001 (cover letter dated January 26, 2001). Sponsored by Applicant; admitted into evidence on January 30, 2001.

EXHIBIT 82: "The Property Value Effect ", etc., dated November 1999 (Troy Report). Sponsored by Intervenor RSTS&RC; admitted into evidence on January 30, 2001.

EXHIBIT 83: Blomquist Report , dated 1974. Sponsored by Applicant; admitted into evidence on January 30, 2001.

EXHIBIT 84: Applicant s PSA comments (Set 4), dated June 13, 2000. Sponsored by Applicant; admitted into evidence on March 13, 2001.

EXHIBIT 85: Response to CEC Data Request No. 50 (Set 1G), dated February 29, 2000. Sponsored by Applicant; admitted into evidence on March 13, 2001.

EXHIBIT 86: Response to CEC Data Request No. 50 (Set 1I), dated July 31, 2000. Sponsored by Applicant; admitted into evidence on January 31, 2001.

EXHIBIT 87: Response to CEC Data Request No. 50 (Set 1M), dated September 8, 2000. Sponsored by Applicant; admitted into evidence on January 31, 2001.

EXHIBIT 88: Responses to CVRP Data Request, Part C, No. 14 (Set 4), dated August 30, 2000. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 89: Response to informal Data Request re Land Use, dated September 1, 2000. Sponsored by Applicant; admitted into evidence on January 31, 2001.

EXHIBIT 90: Excerpt from San Jose International Airport Master Plan Update, dated October 1996. Sponsored by Applicant; admitted into evidence on January 31, 2001.

EXHIBIT 91: Excerpt from Harry Road DEIR, with attached letters and City of San Jose Memorandum, dated December 7, 1999. Sponsored by Applicant; admitted into evidence on January 31, 2001.

EXHIBIT 92: Corrections to Applicant s Land Use Testimony, dated January 31, 2001. Sponsored by Applicant; admitted into evidence on January 31, 2001.

EXHIBIT 93: Memorandum to City of San Jose City Council from Mayor Ron Gonzales, dated November 20, 2000. Sponsored by Applicant; admitted into evidence on March 13, 2001.

EXHIBIT 94: Memorandum to the Mayor and City Council of San Jose from Linda LeZotte, dated November 28, 2000. Sponsored by Applicant; admitted into evidence on March 13, 2001.

EXHIBIT 95: Applicant s Group 3A Testimony re Biological Resources and Visual Resources, dated January 24, 2001. Sponsored by Applicant; admitted into evidence on February 15, 2001.

EXHIBIT 96: Group 2B Final Staff Assessment Changes re plume analysis, dated February 2, 2001. Sponsored by Staff; admitted into evidence on February 15, 2001.

EXHIBIT 97: Applicant s additional visible water plume analysis, dated February 13, 2001. Sponsored by Applicant; admitted into evidence on February 15, 2001.

EXHIBIT 98: Applicant s responses to CEC Data Requests Nos. 26R, 32R, 238, 3-214 (Set 1G), dated February 29, 2000. Sponsored by Applicant; admitted into evidence on February 15, 2001.

EXHIBIT 99: Applicant's Responses to CEC Informal Data Request Regarding Cumulative Nitrogen Deposition Impact Analysis, dated May 19, 2000. Sponsored by Applicant; admitted into evidence on February 15, 2001.

EXHIBIT 100: Biological Assessment for the Metcalf Energy Center Project. Sponsored by Applicant; admitted into evidence on February 15, 2001.

EXHIBIT 101: Preliminary Draft Biological Resources Mitigation Implementation and Monitoring Plan for the Metcalf Energy Center Project. Sponsored by Applicant; admitted into evidence on February 15, 2001.

EXHIBIT 102: Response to CEC Informal Data Request Regarding Nitrogen Deposition Isopleths. Sponsored by Applicant; admitted into evidence on February 15, 2001.

EXHIBIT 103A: MEC Biological Assessment, Supplement 1, dated June 20, 2000. Sponsored by Applicant; admitted into evidence on February 15, 2001.

EXHIBIT 103B: Applicant's responses to CEC Data Requests Nos. 89, 90, 95-99, 102-105 (Set 1C), dated September 3, 1999. Sponsored by Applicant; admitted into evidence on February 15, 2001.

EXHIBIT 104: Applicant's responses to CEC Data Requests Nos. 83, 91-93 (Set 1D). Sponsored by Applicant; admitted into evidence on February 15, 2001.

EXHIBIT 105: Applicant's Comments on the PSA Set 4, dated June 13, 2000. Sponsored by Applicant; admitted into evidence on February 15, 2001. **(Duplicate of Exhibit 84.)**

EXHIBIT 106: Applicant s Rebuttal Testimony on Visual Plume, dated February 9, 2001. Sponsored by Applicant; admitted into evidence on February 15, 2001.

EXHIBIT 107: Staff s Rebuttal Testimony of Joe Donaldson on Visual Resources, dated February 9, 2001. Sponsored by Staff; admitted into evidence on February 15, 2001.

EXHIBIT 108: Blanchard Road: Existing Visual Conditions; selected photos from PSA Comments, Sets 7 and 9 (5 pages). Sponsored by Applicant; admitted into evidence on February 15, 2001.

EXHIBIT 109: Various architectural designs, artist's rendering, and color photographs of various power plant designs, by the Hillier Firm. Sponsored by Applicant; admitted into evidence on February 15, 2001.

EXHIBIT 110: Supplement C to the AFC Errata Sheet, dated March 3, 2000. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 111: Response to CEC Informal Data Request AQ-1, dated April 28, 2000. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 112: Responses to CEC Data Requests AQ-2 through AQ-7, dated May 26, 2000. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 113: Responses to CVRP Data Requests Nos. 1, 2, 3, 4 (Set 7), dated December 8, 2000. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 114: Responses to CVRP Data Requests Part A, No. 1; Part B Nos. 1, 2 (Set 8), dated January 2, 2001. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 115: Letter dated May 14, 1999 from MEC to Lorraine White, transmitting a copy of the May 5, 1999 letter from MEC to BAAQMD, including attached air quality permit application. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 116: Letter dated May 7, 1999, from Sierra Research to BAAQMD transmitting signed original certification statement. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 117: Letter dated June 14, 1999 from Sierra Research to BAAQMD responding to BAAQMD questions. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 118: Letter dated November 2, 1999 from Sierra Research to Mike Ringer, providing requested information and corrections to previously submitted information. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 119: Letter dated February 15, 2000 from MEC to the CEC transmitting 5 CDs of the revised air dispersion modeling for Supplement C. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 120: Letter dated March 6, 2000 from Sierra Research to Paul Richins, transmitting corrected electronic modeling files for the Supplement C submittal. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 121: Letter dated April 7, 2000 from MEC to Paul Richins and Roger Johnson transmitting a letter dated March 9, 2000 from Sierra Research to BAAQMD responding to various information requests (filed as part of an Informal CEC Data Response). Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 122: Letter dated April 7, 2000 from Sierra Research to Magdy Badr, responding to questions. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 123: Letter dated April 12, 2000 from Sierra Research to Intervenor Jeff Wade regarding a comparison between dispersion modeling results and measured air quality impacts. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 124: Letter dated June 14, 2000 from MEC to Paul Richins transmitting a letter dated May 30, 2000 from Sierra Research to BAAQMD submitting comments on the Preliminary Determination of Compliance. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 125: Letter dated July 12, 2000 from MEC to Paul Richins regarding proposed reduction in PM10 emissions including attached source test report. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 126: Letter dated August 9, 2000 from MEC to Paul Richins transmitting letter dated August 3, 2000 (corrected version) from Sierra Research to BAAQMD regarding emissions of formaldehyde, acetaldehyde, and acrolein including attached source test report presenting base load test results. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 127: Applicant's response to CEC Informal Data Request for Air Quality No. 8, dated August 9, 2000. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 128: Letter dated August 9, 2000 transmitting letter dated August 3, 2000 from Sierra Research to BAAQMD regarding supplemental analysis of Top Down Best Available Control Technology analysis. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 129: Letter dated August 30, 2000 from MEC to Paul Richins transmitting a letter dated August 21, 2000, from Sierra Research to BAAQMD regarding emissions including attached source test report presenting partial load test results. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 130: Letter dated August 22, 2000 from MEC to Paul Richins transmitting letter, dated August 21, 2000, from Sierra Research to BAAQMD presenting revised PM10 mitigation plan. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 131: Electronic mail dated August 8, 2000 from Sierra Research to Mike Ringer regarding diesel fire pump emissions. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 132: Letter dated September 14, 2000 from MEC to Paul Richins transmitting a letter dated September 7, 2000 from Sierra Research to BAAQMD presenting errata comments on the Final Determination of Compliance. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 133: Letter dated November 17, 2000 from Sierra Research to BAAQMD regarding source testing of formaldehyde, acetaldehyde, and acrolein during low load turbine operation, including source data. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 134: Applicant s Group 3B Testimony for Air Quality and Public Health, dated January 26, 2001. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 135: Applicant s responses to CVRP Data Requests Part A Nos. 1.D and 4.A (Set 3B), dated January 11, 2001. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 136: Applicant s responses to CEC Informal Data Request Nos. PH-1 to PH-3, dated April 7, 2001. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 137: Responses to Rancho Santa Teresa Swim and Racquet Club Data Requests Nos. 1 to 4 (Set 2), dated August 25, 2000. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 138: Applicant s Group 3B Rebuttal Testimony for Air Quality and Public Health, dated February 21, 2001. Sponsored by Applicant; admitted into evidence on March 1, 2001.

EXHIBIT 139: Revised Testimony in Opposition to MEC Group 3B Air Quality and Public Health, dated February 27, 2001. Sponsored by Intervenor City of Morgan Hill; admitted into evidence on March 1, 2001.

EXHIBIT 140: Rebuttal Testimony of Mike Ringer, dated February 21, 2001. Sponsored by Staff; admitted into evidence on March 2, 2001.

EXHIBIT 141: Final Determination of Compliance, dated August 25, 2000. Sponsored by Staff; admitted into evidence on March 2, 2001.

EXHIBIT 142: Testimony of Glenn Long of BAAQMD, dated February 20, 2001. Sponsored by Staff; admitted into evidence on March 2, 2001.

EXHIBIT 143: Testimony of Kenneth Lim, dated February 27, 2001. Sponsored by Staff; admitted into evidence on March 2, 2001.

EXHIBIT 144: Errata to the Final Determination of Compliance, dated February 8, 2001. Sponsored by Staff; admitted into evidence on March 2, 2001.

EXHIBIT 145: CVRP Group 3 Testimony of Steven Radis, with attachments, dated February 13, 2001. Sponsored by Intervenor CVRP; admitted into evidence on March 2, 2001.

EXHIBIT 146: CVRP Group 3 Testimony of Radis, Errata, dated February 21, 2001. Sponsored by Intervenor CVRP; admitted into evidence on March 2, 2001.

EXHIBIT 147: August 29, 2000 letter from Gruenich Resource Advocates transmitting two letters, dated August 15, and 23, 2000, to Dennis Jang, regarding the BAAQMD Application. Sponsored by Intervenor CVRP; admitted into evidence on March 2, 2001.

EXHIBIT 148: CVRP Comments regarding the Preliminary Staff Assessment, with attachments, dated June 30, 2000. Sponsored by Intervenor CVRP; admitted into evidence on March 2, 2001.

EXHIBIT 149: May 31, 2000 CVRP Comments on Preliminary Determination of Compliance. Sponsored by Intervenor CVRP; admitted into evidence on March 2, 2001.

EXHIBIT 150: CVRP Petition to Compel Production of Documents, with attachments, dated October 9, 2000. Sponsored by Intervenor CVRP; admitted into evidence on March 2, 2001.

EXHIBIT 151: CVRP Prehearing Conference Statement, dated November 30, 2000. Sponsored by Intervenor CVRP; admitted into evidence on March 2, 2001.

EXHIBIT 152: Testimony of Dr. Suzanne Wong, dated February 13, 2001. Sponsored by Intervenor Santa Teresa Citizens Action Group; admitted into evidence on March 2, 2001.

EXHIBIT 153: Applicant's Group 3C Testimony for TSE/LSE and Alternatives, dated February 2, 2001. Sponsored by Applicant; admitted into evidence on March 13, 2001.

EXHIBIT 154: Applicant's Group 3C Testimony for TSE/LSE, Errata Sheet, dated February 23, 2001. Sponsored by Applicant; admitted into evidence on March 13, 2001.

EXHIBIT 155: Applicant's Group 3C Rebuttal Testimony on TSE/LSE, dated February 23, 2001. Sponsored by Applicant; admitted into evidence on March 13, 2001.

EXHIBIT 156: Testimony of Peter Mackin, Senior Grid Planning Engineer from Cal ISO, dated October 9, 2000. Sponsored by Staff; admitted into evidence on March 13, 2001.

EXHIBIT 157: Rebuttal Testimony of Al McCuen, CEC, and Cal ISO Staff to STCAG Testimony on MEC Local System Effects, dated February 23, 2001. Sponsored by Staff; admitted into evidence on March 13, 2001.

EXHIBIT 158: FSA Correction Page to LSE testimony, dated March 12, 2001. Sponsored by Staff; admitted into evidence on March 13, 2001.

EXHIBIT 159: Santa Teresa Citizens Action Group (STCAG): Testimony on MEC Local System Effects. Sponsored by Intervenor STCAG; admitted into evidence on March 13, 2001.

EXHIBIT 160: Applicant's responses to CEC Data Requests 13 to 16, 18, 24, and 25 (Set 1B), dated August 27, 1999. Sponsored by Applicant; admitted into evidence on March 13, 2001.

EXHIBIT 161: Applicant's responses to CEC Data Requests 3-207 to 3-209 (Set 3A), dated December 13, 1999. Sponsored by Applicant; admitted into evidence on March 13, 2001.

EXHIBIT 162: Applicant's responses to CEC Data Requests 3-207 to 3-209 (Set 3D), dated February 29, 2000. Sponsored by Applicant; admitted into evidence on March 13, 2001.

EXHIBIT 163: Applicant's response to CEC Data Request, Set 1J (Draft Stormwater Pollution Prevention Plan), dated June 15, 2000. Sponsored by Applicant; admitted into evidence on March 13, 2001.

EXHIBIT 164: Alternatives Appendix A to the Staff FSA, dated February 13, 2001. Sponsored by Staff; admitted into evidence on March 14, 2001.

EXHIBIT 165: Local System Effects/Alternatives Rebuttal Testimony from Staff, dated February 23, 2001. Sponsored by Staff; admitted into evidence on March 13, 2001.

EXHIBIT 166: Staff's Supplementary Testimony Regarding Alternatives, dated February 13, 2001. Sponsored by Staff; admitted into evidence on March 14, 2001.

In accordance with 20 Cal Code of Regs., section 1213, the Commission has taken Official Notice of:

- Commission Decision on the Application for Certification for the Crockett Cogeneration Project, Docket No. 92-AFC-1 (May 3, 1993; CEC Publication No. P800-93-004), regarding impact to property values. (January 30, 2001 Hearing.)

- Appendix G to the Guidelines implementing the California Environmental Quality Act, 14 Cal. Code of Regs., sections 15000, et. seq. (January 31, 2001 Hearing.)

- Final Environmental Impact Report for the Coyote Valley Research Park Project (CVRP), dated October 2000.

- Energy Commission Staff Report entitled "Potential Peaking Power Plant Sites in California 2001-2003" (February 2001).

- California Public Utilities Commission Office of Ratepayer Advocates, report entitled "Public Financing for Self Generation: Costs and Benefits of Onsite Photovoltaics, Fuel Cell, and Micro-Turbine Systems" (January 2001).

- California Public Utilities Commission Decision 99-10-065 (October 21, 1999).

- Energy Commission Staff Report entitled "Distributed Generation: CEQA Review and Permit Streamlining" (December 2000; Publication No. P700-00-019).

- Final USFWS Biological Opinion, dated March 7, 2001.

- Prevention of Significant Deterioration Permit, submitted by letter dated May 4, 2001 from the Bay Area Air Quality Management District.

Appendix D

Glossary of Terms and Acronyms

GLOSSARY OF TERMS AND ACRONYMS

	A
A	Ampere
AAL	all aluminum (electricity conductor)
AAQS	Ambient Air Quality Standards
ABAG	Association of Bay Area Governments
AC	alternating current
ACE	Argus Cogeneration Expansion Project Army Corps of Engineers
ACSR	aluminum covered steel reinforced (electricity conductor)
AFC	Application for Certification
AFY	acre-feet per year
AHM	Acutely Hazardous Materials
ANSI	American National Standards Institute
APCD	Air Pollution Control District
APCO	Air Pollution Control Officer
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
ARB	Air Resources Board
ARCO	Atlantic Richfield Company
ASAE	American Society of Architectural Engineers
ASHRAE	American Society of Heating Refrigeration & Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ATC	Authority to Construct
	B
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
BAF	Basic American Foods
BARCT	Best Available Retrofit Control Technology
bbl	barrel
BCDC	Bay Conservation and Development Commission
BCF	billion cubic feet
Bcfd	billion cubic feet per day
b/d	barrels per day
BLM	Bureau of Land Management
BPA	U.S. Bonneville Power Administration
BR	Biennial Report
Btu	British thermal unit
	C
CAA	U.S. Clean Air Act
CAAQS	California Ambient Air Quality Standards
CALEPA	California Environmental Protection Agency
CALTRANS	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CBC	California Building Code
CCAA	California Clean Air Act
CDF	California Department of Forestry
CDFG	California Department of Fish and Game
CEERT	Coalition for Energy Efficiency and Renewable Technologies
CEM	continuous emissions monitoring
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFB	circulating fluidized bed
CFCs	chloro-fluorocarbons
cfm	cubic feet per minute

CFR	Code of Federal Regulations
cfs	cubic feet per second
CLUP	Comprehensive Land Use Plan
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CO_2	carbon dioxide
COI	California Oregon Intertie
CPCN	Certificate of Public Convenience & Necessity
CPM	Compliance Project Manager
CPUC	California Public Utilities Commission
CT	combustion turbine current transformer
CTG	combustion turbine generator
CURE	California Unions for Reliable Energy
	D
dB	decibel
dB(A)	decibel on the A scale
DC	direct current
DCTL	Double Circuit Transmission Line
DEIR	Draft Environmental Impact Report
DEIS	Draft Environmental Impact Statement
DFG	California Department of Fish and Game
DHS	California Department of Health Services
DISCO	Distribution Company
DOC	Determination of Compliance
DOE	U.S. Department of Energy
DSM	demand side management
DTC	Desert Tortoise Council
DWR	California Department of Water Resources
	E
EDF	Environmental Defense Fund
Edison	Southern California Edison Company
EDR	Energy Development Report
EFS&EPD	Energy Facilities Siting and Environmental Protection Division
EIA	U.S. Energy Information Agency
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ELFIN	Electric Utility Financial and Production Simulation Model
EMF	electric and magnetic fields
EOR	East of River (Colorado River)
EPA	U.S. Environmental Protection Agency
EPRI	Electric Power Research Institute
ER	Electricity Report
ERC	emission reduction credit {offset}
ESA	Endangered Species Act (Federal) Environmental Site Assessment
ETSR	Energy Technologies Status Report
	F
FAA	Federal Aviation Administration
FBE	Functional Basis Earthquake
FCAA	Federal Clean Air Act
FCC	Federal Communications Commission
FEIR	Final Environmental Impact Report
FIP	Federal Implementation Plan
FONSI	Finding of No-Significant Impact
FERC	Federal Energy Regulatory Commission
FSA	Final Staff Assessment G

GEP	good engineering practice
GIS	gas insulated switchgear geographic information system
gpd	gallons per day
gpm	gallons per minute
GW	gigawatt
GWh	gigawatt hour
	H
H_2S	hydrogen sulfide
HCP	habitat conservation plan
HHV	higher heating value
HRA	Health Risk Assessment
HRSG	heat recovery steam generator
HV	high voltage
HVAC	heating, ventilating and air conditioning
	I
IAR	Issues and Alternatives Report
IEA	International Energy Agency
IEEE	Institute of Electrical & Electronics Engineers
IID	Imperial Irrigation District
IIR	Issues Identification Report
IOU	Investor-Owned Utility
IS	Initial Study
ISO	Independent System Operator
	J
JES	Joint Environmental Statement
	K
KCAPCD	Kern County Air Pollution Control District
KCM	thousand circular mils (also KCmil) (electricity conductor)
KGRA	known geothermal resource area
km	kilometer
KOP	key observation point
KRCC	Kern River Cogeneration Company
kV	kilovolt
KVAR	kilovolt-ampere reactive
kW	kilowatt
kWe	kilowatt, electric
kWh	kilowatt hour
kWp	peak kilowatt
	L
LADWP	Los Angeles Department of Water and Power
LAER	Lowest Achievable Emission Rate
lbs	pounds
lbs/hr	pounds per hour
lbs/MMBtu	pounds per million British thermal units
LCAQMD	Lake County Air Quality Management District
LMUD	Lassen Municipal Utility District
LORS	laws, ordinances, regulations and standards
	M
m (M)	meter, million, mega, milli or thousand
MBUAPCD	Monterey Bay Unified Air Pollution Control District
MCE	maximum credible earthquake
MCF	thousand cubic feet
MCL	Maximum Containment Level
MCM	thousand circular mil (electricity conductor)
$\mu g/m^3$	micro grams (10^{-6} grams) per cubic meter

MEID	Merced Irrigation District
MG	milli gauss
mgd	million gallons per day
MID	Modesto Irrigation District
MOU	Memorandum of Understanding
MPE	maximum probable earthquake
m/s	meters per second
MS	Mail Station
MVAR	megavolt-ampere reactive
MW	megawatt (million watts)
MWA	Mojave Water Agency
MWD	Metropolitan Water District
MWh	megawatt hour
MWp	peak megawatt
	N
N-1	one transmission circuit out
N-2	two transmission circuits out
NAAQS	National Ambient Air Quality Standards
NCPA	Northern California Power Agency
NEPA	National Energy Policy Act National Environmental Policy Act
NERC	National Electric Reliability Council
NESHAPS	National Emission Standards for Hazardous Air Pollutants
NMHC	nonmethane hydrocarbons
NO	nitrogen oxide
NOI	Notice of Intention
NOL	North of Lugo
NO_x	nitrogen oxides
NO_2	nitrogen dioxide
NOP	Notice of Preparation (of EIR)
NOV	Notice of Violation
NRDC	Natural Resources Defense Council
NSCAPCD	Northern Sonoma County Air Pollution Control District
NSPS	New Source Performance Standards
NSR	New Source Review
	O
O_3	Ozone
OASIS	Open Access Same-Time Information System
OCB	oil circuit breaker
OCSG	Operating Capability Study Group
O&M	operation and maintenance
OSHA	Occupational Safety and Health Administration (or Act)
	P
PG&E	Pacific Gas & Electric Company
PDCI	Pacific DC Intertie
PHC(S)	Prehearing Conference (Statement)
PIFUA	Federal Powerplant & Industrial Fuel Use Act of 1978
PM	Project Manager particulate matter
PM_{10}	particulate matter 10 microns and smaller in diameter
$PM_{2.5}$	particulate matter 2.5 microns and smaller in diameter
ppb	parts per billion
ppm	parts per million
ppmvd	parts per million by volume, dry
ppt	parts per thousand
PRC	California Public Resources Code

PSD	Prevention of Significant Deterioration
PSRC	Plumas Sierra Rural Electric Cooperative
PT	potential transformer
PTO	Permit to Operate
PU	per unit
PURPA	Federal Public Utilities Regulatory Policy Act of 1978
PV	Palo Verde photovoltaic
PX	Power Exchange
	Q
QA/QC	Quality Assurance/Quality Control
QF	Qualifying Facility
	R
RACT	Reasonably Available Control Technology
RDF	refuse derived fuel
ROC	Report of Conversation reactive organic compounds
ROG	reactive organic gas
ROW	right of way
RWQCB	Regional Water Quality Control Board
	S
SACOG	Sacramento Area Council of Governments
SANBAG	San Bernardino Association of Governments
SANDAG	San Diego Association of Governments
SANDER	San Diego Energy Recovery Project
SB	Senate Bill
SCAB	South Coast Air Basin
SEGS	Solar Electric Generating Station
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison Company
SCFM	standard cubic feet per minute
SCH	State Clearing House
SCIT	Southern California Import Transmission
SCR	Selective Catalytic Reduction
SCTL	single circuit transmission line
SDCAPCD	San Diego County Air Pollution Control District
SDG&E	San Diego Gas & Electric Company
SEPCO	Sacramento Ethanol and Power Cogeneration Project
SIC	Standard industrial classification
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SJVAQMD	San Joaquin Valley Air Quality Management District
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utility District
SMUDGEO	SMUD Geothermal
SNCR	Selective Noncatalytic Reduction
SNG	Synthetic Natural Gas
SO_2	sulfur dioxide
SO_x	sulfur oxides
SO_4	sulfates
SoCAL	Southern California Gas Company
SONGS	San Onofre Nuclear Generating Station
SPP	Sierra Pacific Power
STIG	steam injected gas turbine

SWP	State Water Project
SWRCB	State Water Resources Control Board
	T
TAC	Toxic Air Contaminant
TBtu	trillion Btu
TCF	trillion cubic feet
TCM	transportation control measure
TDS	total dissolved solids
TE	transmission engineering
TEOR	Thermally Enhanced Oil Recovery
TID	Turlock Irrigation District
TL	transmission line or lines
T-Line	transmission line
TOG	total organic gases
TPD	tons per day
TPY	tons per year
TS&N	Transmission Safety and Nuisance
TSE	Transmission System Engineering
TSIN	Transmission Services Information Network
TSP	total suspended particulate matter
	U
UBC	Uniform Building Code
UDC	Utility Displacement Credits
UDF	Utility Displacement Factor
UEG	Utility Electric Generator
USC(A)	United States Code (Annotated)
USCOE	U.S. Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
	V
VCAPCD	Ventura County Air Pollution Control District
VOC	volatile organic compounds
	W
W	Watt
WAA	Warren-Alquist Act
WEPEX	Western Energy Power Exchange
WICF	Western Interconnection Forum
WIEB	Western Interstate Energy Board
WOR	West of River (Colorado River)
WRTA	Western Region Transmission Association
WSCC	Western System Coordination Council
WSPP	Western System Power Pool