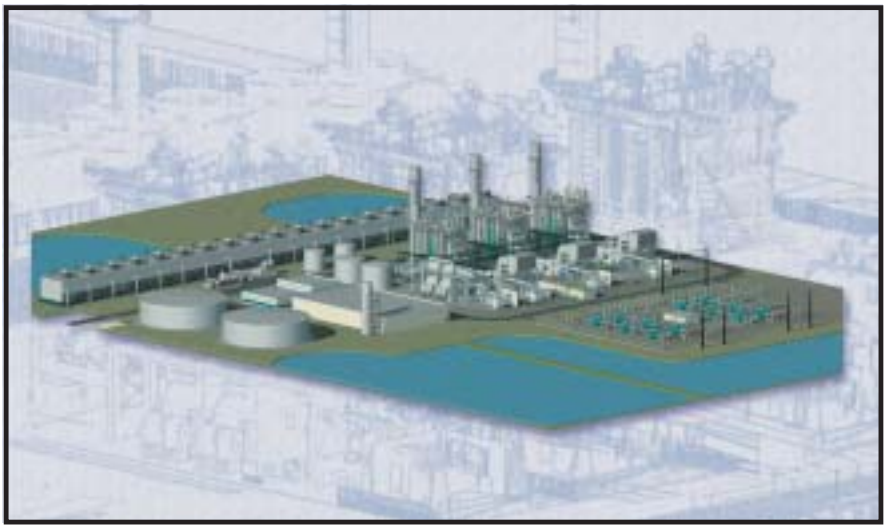
CALIFORNIA
ENERGY
COMMISSION

EAST ALTAMONT ENERGY CENTER

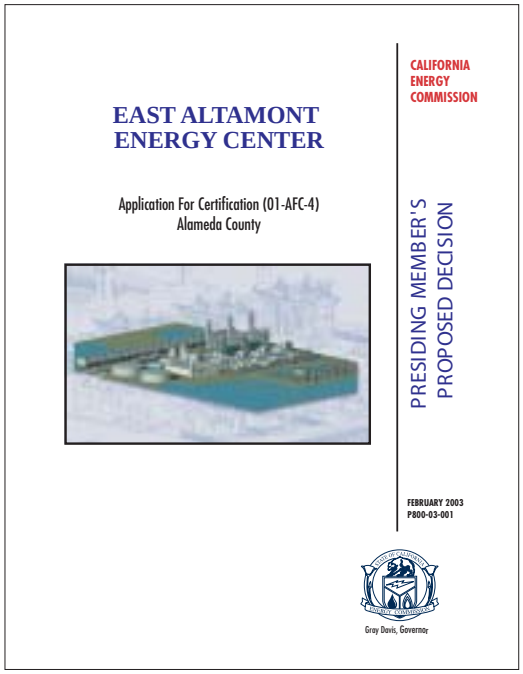
Application For Certification (01-AFC-4)
Alameda County



PRESIDING MEMBER'S PROPOSED DECISION

JANUARY 2003
P800-03-001

Gray Davis, Governor



CALIFORNIA
ENERGY
COMMISSION

1516 9th Street
Sacramento, CA 95814
www.energy ca.gov/sitingcases/east altamont

WILLIAM J. KEESE
Chairman and Presiding Member

ROBERT PERNELL
Commissioner and Associate Member

MAJOR WILLIAMS
Hearing Officer

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

The Committee hereby submits its Presiding Member's Proposed Decision for the East Altamont Energy Center (Docket Number 01-AFC-4). We have prepared this document pursuant to the requirements set forth in the Commission's regulations. (20 Cal. Code of Regs., §§ 1749-1752. 5).

We recommend the Application for Certification for the East Altamont 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.

Dated: _____

ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION

_____
WILLIAM J. KEESE
Chairman
Presiding Committee Member

_____
ROBERT PERNELL
Commissioner
Associate Committee Member

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

Application for Certification for the EAST ALTAMONT ENERGY CENTER	**Docket No. 01-AFC-4**

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

I. NOTICE OF AVAILABILITY

The Committee assigned to the above-captioned proceeding has released the Presiding Member's Proposed Decision (PMPD) for the East Altamont Energy Center on January 29, 2003. 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. P800-03-001. The PMPD may also be viewed on the Commission Internet Web Site at: **[www.energy.ca.gov/sitingcases/eastaltamont]**.

Members of the public and interested governmental agencies may submit written comments on the PMPD. The public comment period ends on February 27, 2003. All comments must be received ***no later than 3:00 p.m. on***, by the Commission's Docket Unit, 1516 9th Street, Sacramento, CA 95814. Identify all comments with "Docket No. 01-AFC-4."

II. NOTICE OF CONFERENCE

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

Monday, February 24, 2003
Beginning at 10:00 a.m.
Tracy Elks Lodge #2031
6400 East 11th Street
Tracy, California 95304

[Wheelchair Accessible]
[Map Attached]

Applicant, Staff, and all other formal parties wishing to participate at this Conference must file written comments on the PMPD. These comments shall be served and filed ***no later than 3:00 p.m. on Thursday, February 20, 2003***. Members of the general public wishing to participate at this Conference are encouraged, but not required, to submit their written comments by the same date.

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

Media inquiries should be directed to Claudia Chandler at (916) 654-4989. If you require special accommodations, contact Lourdes Quiroz at (916) 654-5146 at least five days prior to the Conference.

Technical questions should be directed to the Commission's Project Manager, Cheri Davis, at (916) 657-4394.

Questions of a legal or procedural nature should be addressed to Major Williams, the Hearing Officer, at (916) 654-3893, or email: **[mwilliam@energy.state.ca.us]**.

Dated in Sacramento, California on January 28, 2003.

WILLIAM J. KEESE
Chairman and Presiding Member
East Altamont Committee

ROBERT PERNELL
Commissioner and Associate Member
East Altamont Committee

Mailed to Lists 7058, 7059, 7060

TABLE OF CONTENTS

PAGE

INTRODUCTION 1
- A. SUMMARY OF THE PROPOSED DECISION 1
- B. PUBLIC COMMENT 11
- C. SITE CERTIFICATION PROCESS 18
- D. PROCEDURAL HISTORY 21

I. PROJECT PURPOSE AND DESCRIPTION 24
- FINDINGS AND CONCLUSIONS 28

II. PROJECT ALTERNATIVES 29
- SUMMARY AND DISCUSSION OF THE EVIDENCE 30
- FINDINGS AND CONCLUSIONS 41

III. COMPLIANCE AND CLOSURE 42
- SUMMARY AND DISCUSSION OF THE EVIDENCE 42
- GENERAL CONDITIONS 44

IV. ENGINEERING ASSESSMENT 64
- A. FACILITY DESIGN 64
  - SUMMARY AND DISCUSSION OF THE EVIDENCE 64
  - FINDINGS AND CONCLUSIONS 64
  - CONDITIONS OF CERTIFICATION 65
- B. POWER PLANT EFFICIENCY 85
  - SUMMARY AND DISCUSSION OF THE EVIDENCE 85
  - FINDINGS AND CONCLUSIONS 86
- C. POWER PLANT RELIABILITY 87
  - SUMMARY AND DISCUSSION OF THE EVIDENCE 87
  - FINDINGS AND CONCLUSIONS 87
- D. TRANSMISSION SYSTEM ENGINEERING 89
  - SUMMARY AND DISCUSSION OF THE EVIDENCE 89
  - FINDINGS AND CONCLUSIONS 91
  - CONDITIONS OF CERTIFICATION 92
- E. TRANSMISSION LINE SAFETY AND NUISANCE 95
  - SUMMARY AND DISCUSSION OF THE EVIDENCE 95
  - FINDINGS AND CONCLUSIONS 97
  - CONDITIONS OF CERTIFICATION 98

TABLE OF CONTENTS, (Cont.)

PAGE

V. PUBLIC HEALTH AND SAFETY ASSESSMENT 100

A. AIR QUALITY 100

SUMMARY OF THE EVIDENCE 103

FINDINGS AND CONCLUSIONS 146

CONDITIONS OF CERTIFICATION 150

B. PUBLIC HEALTH 178

SUMMARY AND DISCUSSION OF THE EVIDENCE 178

FINDINGS AND CONCLUSIONS 186

C. WORKER SAFETY/FIRE PROTECTION 188

SUMMARY AND DISCUSSION OF THE EVIDENCE 188

FINDINGS AND CONCLUSIONS 194

CONDITIONS OF CERTIFICATION 196

D. HAZARDOUS MATERIALS MANAGEMENT 198

SUMMARY AND DISCUSSION OF THE EVIDENCE 198

FINDINGS AND CONCLUSIONS 209

CONDITIONS OF CERTIFICATION 211

E. WASTE MANAGEMENT 214

SUMMARY AND DISCUSSION OF THE EVIDENCE 214

FINDINGS AND CONCLUSIONS 216

CONDITIONS OF CERTIFICATION 217

VI. ENVIRONMENTAL ASSESSMENT 219

A. BIOLOGICAL RESOURCES 219

SUMMARY AND DISCUSSION OF THE EVIDENCE 220

FINDINGS AND CONCLUSIONS 239

CONDITIONS OF CERTIFICATION 241

B. SOIL AND WATER RESOURCES 254

SUMMARY AND DISCUSSION OF THE EVIDENCE 254

FINDINGS AND CONCLUSIONS 328

CONDITIONS OF CERTIFICATION 332

C. CULTURAL RESOURCES 338

SUMMARY AND DISCUSSION OF THE EVIDENCE 338

FINDINGS AND CONCLUSIONS 339

CONDITIONS OF CERTIFICATION 340

TABLE OF CONTENTS, (Cont.)

PAGE

D. GEOLOGICAL AND PALEONTOLOGICAL RESOURCES 351
SUMMARY AND DISCUSSION OF THE EVIDENCE 351
FINDINGS AND CONCLUSIONS 353
CONDITIONS OF CERTIFICATION 354

VII. LOCAL IMPACT ASSESSMENT 361
A. LAND USE 361
SUMMARY AND DISCUSSION OF THE EVIDENCE 361
FINDINGS AND CONCLUSIONS 376
CONDITIONS OF CERTIFICATION 377

B. TRAFFIC AND TRANSPORTATION 380
SUMMARY AND DISCUSSION OF THE EVIDENCE 380
FINDINGS AND CONCLUSIONS 383
CONDITIONS OF CERTIFICATION 384

C. NOISE 388
SUMMARY OF THE EVIDENCE 388
FINDINGS AND CONCLUSIONS 389
CONDITIONS OF CERTIFICATION 390

D. SOCIOECONOMICS 396
SUMMARY AND DISCUSSION OF THE EVIDENCE 396
FINDINGS AND CONCLUSIONS 399
CONDITIONS OF CERTIFICATION 399

E. VISUAL RESOURCES AND PLUMES 401
SUMMARY AND DISCUSSION OF THE EVIDENCE 401
FINDINGS AND CONCLUSIONS 422
CONDITIONS OF CERTIFICATION 423

APPENDIX A: LAWS, ORDINANCES, REGULATIONS, AND STANDARDS
APPENDIX B: PROOF OF SERVICE LIST
APPENDIX C: EXHIBIT LIST
APPENDIX D: GLOSSARY OF TERMS AND ACRONYMS

INTRODUCTION

A, SUMMARY

This document is the California Energy Commission's (CEC's) Presiding Member's Proposed Decision (PMPD).[1] The CEC has exclusive jurisdiction in California over the licensing of power plants that are 50 megawatts (MW) or more. The CEC appointed a Committee of two Commissioners to review the proposed power plant project. This PMPD contains the Committee's determinations regarding Calpine C* Corporation's (Calpine or Applicant) Application for Certification (AFC) for the East Altamont Energy Center, LLC (EAEC), a nominal 1,100-megawatt (MW) natural gas-fired power plant in Alameda County.

The PMPD includes the findings and conclusions required by law, and it is based exclusively on the evidentiary record established at the hearings on the application. The document contains the Committee's reasons supporting its PMPD and references to portions of the record, which support the Committee's findings and conclusions.[2]

The project is also under the jurisdiction of the Western Area Power Authority (WAPA), the lead federal agency for the proposed project, which will interconnect with WAPA's transmission system. WAPA is a federal power-marketing agency under the U.S. Department of Energy. WAPA operates and maintains about 800

---

[1] The requirements for the Presiding Member's Proposed Decision are set forth in the Commission's regulations, Title 20, California Code of Regulations, sections 1749 through 1754. Requirements for the Revised PMPD are found in Title 20, California Code of Regulations, §1753. The Final Decision is described in section 1755.

[2] References to the evidentiary record, which appear in parentheses following the referenced material, may include an exhibit number and/or a reference to the date, page and line number(s) of the reporter's transcript e.g., (Ex. 2, p. 55; 10/15 RT 123:8-124:3.) The Committee conducted Evidentiary Hearings in the City of Tracy on October 15, 16, 21 & 22; 2002. Because all Evidentiary Hearings were conducted in 2002, we have omitted references to the year.

miles of high-voltage transmission lines and associated facilities in Northern California, including the Tracy Substation. WAPA's mission is to market power from federal hydroelectric plants such as those at Shasta and Folsom dams. Federal law requires WAPA to provide entities, such as merchant power plants, open access to transmission services so that they can move power to load areas. WAPA provides these services through an interconnection if there is available capacity on the transmission line.

Accordingly, to streamline the licensing process and eliminate overlap and duplication between the state and federal processes, staff from the CEC and WAPA worked together admirably to produce joint environmental analyses of the proposed project that includes both its construction and operation.[3]

EAEC's siting is proposed for the northeastern edge of Alameda County, approximately:[4]

- Eight miles northwest of the community of Tracy;
- Five mile south of the community of Byron
- 12 miles east of Livermore; and
- less than one-mile northwest of the new town of Mountain House.[5]

---

[3] Joint CEC Preliminary/Final Staff Analysis (PSA/FSA), and WAPA Preliminary/Final Environmental Assessment (PEA/FEA). The analyses therein were prepared in accordance with state law--Public Resources Code (PRC) sections 25500 et seq.; the California Code of Regulations (CCR) Title 20, sections 12001 et seq.; the California Environmental Quality Act (PRC §§21000 et seq.) and its guidelines (CCR title 14 §§15000 et seq.), and with federal law--the National Environmental Policy Act (NEPA) (42 U.S.C. 4371 et seq.) and its implementing regulations (40 C.F.R. §§1500 et seq.); and the Department of Energy NEPA Implementing Procedures and Guidelines (10 C.F.R. 1021).

[4] The proposed site lies near the center of a 174-acre parcel of land approximately one-mile west of the San Joaquin County line, and 1.0-mile southeast of the Contra Costa County line. The site is bordered by Byron Bethany Road to the north, Kelso Road to the south, and Mountain House Road to the west. The plant's footprint would occupy up to 55 acres; the remainder of the parcel would be available for lease as agricultural land. See our section on Project Description for a map of the local area and access to the site.

[5] Currently in Phase I (of 12 Phases) construction, Mountain House is projected to be fully developed or built out in the year 2020. At full development, the Mountain House community will

Other major landmarks are Clifton Court Forebay, approximately 2 miles to the north; Bethany Reservoir, approximately five miles to the southwest. Although the project site is located in Alameda County, gas and waterlines would cross portions of Contra Costa and San Joaquin counties as well as Alameda County. In addition, EAEC's air quality impacts would directly affect San Joaquin County.[6]

EAEC's site is zoned for agricultural uses, but Alameda County has taken the position that Applicant's use is permittable under the Alameda County Zoning Code and the East County Area Plan (ECAP). Hence rezoning is not required to permit the project.[7]

Land use near the EAEC is primarily agricultural and situated around water supply, natural gas and power generation and transmission facilities of statewide importance. These facilities include:

- the WAPA's Tracy Substation;
- intake structures and pumping stations for the Central Valley Project's (CVP's) Delta-Mendota Canal and the State Water Project's (SWP's) California Aqueduct;
- PG&E's gas compressor station;
- numerous windfarms; and
- four 500-kV and nine 230-kV transmission lines.

EAEC as proposed will be comprised of three combustion turbines, three large duct burners, one steam turbine, and supporting equipment. Emissions are estimated in maximum tons per year (tpy) of 263.8 nitrogen oxides (NO_x), 73.7 of volatile or precursor organic compounds (V/POCs), and 148 of particulate matter less than 10 microns in diameter (PM_{10}), at full capacity. (AFC, Table 8.1-21)

---

encompass 4,784 acres (7.5 square miles), contain 44,000 people (16,000 dwelling units), and provide for 21,000 jobs (12.5 million square feet of industrial, office, and retail space).

[6] See our section on Air Quality, *infra.*

[7] See our section on Land Use, *infra.*

On July 24, 2002, the Bay Area Air Quality Management District's (BAAQMD) issued its Final Determination of Compliance (FDOC).[8] The FDOC confirms that the EAEC project complies with BAAQMD's Best Available Control Technology (BACT) for criteria air pollutants. The Final Staff Assessment (FSA) concurred on this conclusion. (Exs. 1, p. 5.1-26; 2 Y 1, pp. 8-17).

However, in view of evidence that EAEC's air quality impacts will impact San Joaquin County, Applicant and the SJVUAPCD reached an Air Quality Mitigation Agreement (AQMA).[9] The AQMA provides that Applicant will provide $1,002,480 to the SJVUAPCD "to ensure localized benefits in the Northern Region, particularly within or near the City of Tracy." (10/21 RT 142:22-143:22; Exs. 4 G, p. 8; 4 G 2, p. 1 & 4 G 3, p. 2.)

Natural gas for the facility will be delivered via approximately 1.8 miles of new 20-inch pipeline that follows the existing preferred route (Alternative 2a in the AFC) from the project site, heading south parallel to Mountain House Road (approximately 0.5 miles). At Kelso Road the route turns west, crossing under Mountain House Road and proceeds west on the north side of Kelso Road for approximately 0.4 miles. At the Delta Mendota Aqueduct, the new gas line route turns southwest under Kelso Road (avoiding the canal located adjacent to the Aqueduct) and along the eastern side of the Delta Mendota Aqueduct and

---

[8] Although the EAEC is located physically in the San Joaquin Valley Air Shed, because the project site is located in Alameda County, it is subject to the jurisdiction of the BAAQMD rather than the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD). SJVUAPCD's jurisdiction begins at the San Joaquin County line, a mile east of the project site. (Ex. 1, p. 5.1-4/34; Applicant's Reply Brief, p. 35.)

[9] In analyzing air quality cumulative impacts, staff generally includes projects located within a six-mile radius of the proposed project. If significant projects lie just outside this radius, staff generally includes those as well. Mountain House clearly lies well within this radius, at about a mile southeast of the EAEC. The Tesla Power Project lies approximately four miles from the EAEC. The Tracy Peaker Project (Tracy) lies just outside this radius, a little over six miles from the EAEC project. As a CEC approved 169-MW facility with potential air quality implications, Tracy appropriately was included to afford a full disclosure of potential cumulative impacts.

proceeds for another 0.9 miles until it reaches the PG&E main pipeline. (Ex. 2 C, p. 2.)[10]

A gas metering station utilizing an area of approximately 150 feet by 150 feet is required at the interconnection point with PG&E's transmission pipeline. The last 0.5 mile of this new gas line route and the metering station are the same as for Alternative Route 2e described in the AFC. The new gas line will be approximately 1.8 miles in length (the identical length as the preferred gas line route identified in the AFC. The new gas line would be constructed using a standard trenching technique. Trenching, horizontal directional drilling (HDD) or the jack-and-bore construction method will be used at the roadway crossings. (Ex. 2 C, p. 2 & Figure 1.)

Transmission will be provided for by a new 230-kilovolt (kV) switchyard and approximately 0.5 miles of new 230-kV transmission lines. The switchyard, which will be owned by WAPA, would function as an extension of WAPA's Tracy Substation, which is located across Mountain House Road immediately west of the project site.[11]

---

[10] EAEC's general location and pipeline routes are provided below in Figure 1.

[11] The EAEC's proposed interconnection with WAPA's substation triggers the need for compliance with federal law under the National Environmental Policy Act (NEPA). As the federal lead agency under NEPA, WAPA cooperated with staff from the CEC, the lead state agency, to jointly evaluate EAEC's environmental impacts. (42 U.S.C. §§4321-4327.)

Figure 1: EAEC's LOCATION AND PIPELINE ROUTES

Source: (Ex. 2, Vol. 3, Figure 8.4-4.)

WAPA has requested that an approximately 8-inch fiber optic cable conduit be installed from the project switchyard across Mountain House Road to the Tracy Substation. The purpose of the cable is to provide a second communications path between the switchyard and the substation. The fiber optic cable route will exit the project site at the switchyard and head west, crossing Mountain House Road. The route will then follow an existing dirt access road on the substation property and enter the substation on its north side. The fiber optic cable will be constructed using a standard trenching technique. For construction within Mountain House Road, one lane of traffic will always remain open. In addition, construction hours will be scheduled to avoid peak commute periods. The specific traffic control measures will be detailed in the Construction Traffic Control and Transportation Demand P, required pursuant to Condition of Certification **TRANS-1**. (Ex. 2 C, p. 2 & Figure 2.)

As proposed, EAEC's total annual water demands are projected to be 4,616 acre-feet/year (afy) on an average annual basis (4.0 million gallons a day [mgd] average daily flow), and up to 7,000 afy on a peak annual basis (9.1 mgd peak daily flow).[12] More than 95 percent of the water demand for the project is consumed by evaporation of water from a mechanical draft-cooling tower used to cool water that is circulated through the surface condenser of the steam turbine. The remainder is consumed in boiler makeup, combustion turbine air fogging, steam injected into the combustion turbines for power augmentation and potable and service water needs.

The water supplier, the Byron Bethany Irrigation District (BBID), will provide for the EAEC's water supply for cooling tower and process makeup water. A public agency operating under the California Water Code, BBID is a multi-county

[12] Average daily water requirements of 4.0 mgd are based on the plant operating at 820 MW at an ambient temperature of 61°F without duct firing or steam injection. Peak daily water requirements of 9.1 mgd are based on the plant operating at 1,065 MW at an ambient temperature of 98°F with maximum duct firing and steam injection.

special district encompassing approximately 19,000 acres, with lands in Alameda, Contra Costa and San Joaquin Counties. (9/16/02 RT 28:1-8; Ex. 8O.) EAEC is proposed to be located on Mountain House Road between Kelso Road and Byron Highway, within the Alameda County portion of BBID's service area.

Water use for the proposed EAEC is divided into four main levels based on the quality required:

(1) water for the circulating or cooling water system;[13]

(2) service water for the plant, which includes all other miscellaneous uses;

(3) demineralized water for makeup to the Heat Recovery Steam Generators (HRSG's) and auxiliary boilers; and

(4) potable water for drinking and lavatory use.

Service water for the plant, including fire water, will be obtained from the cooling tower blow down stream after filtration and water softening. A dedicated fire water supply will be contained in the reverse osmosis feed water storage tank sufficient for a 2-hour worse case fire.

Demineralized water for makeup to the HRSG's and auxiliary boilers will be obtained from treatment of the cooling tower blow down reject stream, utilizing distillate from the brine concentrator with additional polishing from the mixed bed demineralizer.

Fresh (raw) water for cooling and process water for the proposed facility would be conveyed by an approximately 2.1 mile long, 24-inch, underground pipeline along an existing dirt road from BBID operated Canal 45 to the EEAC. Figure 2.1-1 in the AFC, indicated that the raw water pipeline will be directionally drilled under the Delta Mendota Canal, traveling down the west side of Mountain House

Road, then crossing Mountain House Road to the project site. Subsequently, EAEC has refined the route by extending the horizontal directional drill so that the pipe will "daylight" on the Applicant's 174-acre parcel, which is on the east side of Mountain House Road. This will eliminate the trenching of Mountain House road for this project feature. (Exs. 2, pp. 1-1/2 & Figure 7.1-1; 2 C; p. 3.)

Recycled water facilities will be developed in conjunction with the Mountain House Community Services District (MHCSD) and, possibly other recycled water providers. At Mountain House's full development and beyond, projected recycled water availability is in excess of 5,000 afy, which exceeds EAEC's projected water demands on an average annual basis of 4,616 afy.

BBID would supply the EAEC with recycled water via an approximately 4.6 mile supply pipeline from MHCSD's treatment facility. The recycled water pipeline from the MHCSD's treatment facility to the EAEC shall be constructed prior to the start of plant operation. The project will incorporate onsite storage. (Ex. 2, pp. 1-2; 710/12; *see* **SOIL & WATER Conditions 6; 7 & 12**.)

Applicant has refined the route of the recycled water line by determining that it will be placed on the south side of Byron Bethany Road to avoid biological and cultural resources, which exist on the north side of Byron Bethany Road. In addition, the line will now enter the 174-acre parcel at the northeast corner, rather than the northwest corner. (Exs. 2; 2 C, p. 3.)

Domestic potable water will be generated on-site from raw water delivered by BBID using a package treatment plant unit (US Filter Water Boy pre-engineered package plant with microfiltration and UV disinfection or equivalent). (Ex. 1, p. 5.14-3.)

---

[13] Ninety-nine percent of the project's overall water demand during normal operations) is cooling water, which will be raw (fresh) water or recycled water (tertiary treated), as-is, without further treatment.

The EAEC project is a proposed merchant power plant estimated to have a capital cost of between $400 and $500 million and an operating life of 30-50 years. Over a two-year construction period, the project would provide for a peak of approximately 400 construction jobs. Approximately 40 skilled positions will be employed on the payroll throughout the expected 30-50-year life of the project.

Several Intervenors actively participated in the CEC's evidentiary hearings on the EAEC project, as follows:[14]

- San Joaquin Valley Unified Air Pollution Control District;
- Californians for Reliable Energy (CURE);
- Californians for Renewable Energy (CARE), Michael E. Boyd, President, and
- Mr. Robert Sarvey, a local resident.

In addition, the Committee found, over the objection of CARE and Intervenor Sarvey, that BBID was a necessary party to the proceedings in the area of water resources. Therefore, notwithstanding its election not to enter a formal petition to intervene, the Committee granted BBID de facto party status at the evidentiary hearing on the topic of water resources. (9/16/02 RT 6:4-10:10.)

[14] California Unions for Reliable Energy (CURE) was granted status as Intervenor but did not participate in the evidentiary proceedings.

B. PUBLIC COMMENT

Public comment was offered in several of the topic areas both in favor and opposed to the EAEC.[15]

1. Project Proponents

Sharon Marsh, President of the Byron Municipal Advisory Committee, wrote a letter in support of the proposed project. The organization views the power plant as an important extension of the supporting infrastructure in the area. Its view is that the new power plant will use forty percent less natural gas, reduce emissions, and allow older, less efficient plants to be retired. The group views the EAEC as an important economic addition to the Byron-area economy by providing local area jobs and increased revenue for the BBID to keep agricultural water rates stable. (10/16 RT 391:23-393-17.)

Mr. Barry Luboviski, Secretary-Treasurer for the Building and Construction Trades Council of Alameda County spoke in favor of the EAEC. The Council represents 24 local unions (approximately 40,000 union members and their families) that do work in and around Alameda County. Mr. Luboviski spoke in favor of the skilled construction and operation jobs that the EAEC would provide. He stated that the EAEC would provide clean and efficient energy that responds to the state's need and that the State Building Trades Council had reviewed and supported the project. (10/16 RT 384:2-387-8.)

Mr. Dave Mann, a Business Representative for the Plumbers and Steamfitters Local 342 (3,500 members) and a resident of Livermore spoke in favor of the project. Mr. Mann has worked on other Calpine projects in Contra Costa County.

---

[15] Ms. Roberta Mendonca, the CEC's Public Adviser, summarized the comments of many persons and groups who left messages about their concerns, in either support or opposition of the EAEC project. (10/16 RT 388:20-394:5.)

He stated that the EAEC would deliver much needed energy resources to the area. (10/16 RT 387:9-388-18.)

Ms. Kathy Leighton, who is a long-term resident of Byron and very active in civic affairs in the Byron area, stated her support for the EAEC project. She feels as though Calpine has kept the community informed about the project over the term of the licensing application. Because of the length of her family's stay in the area she feels that her family has a stake in the outcome and urged the Committee to "push this forward and to pass it." (10/21 RT 77:10-78-6.)

Gene Leschinsky, a local resident, stated his support for the proposed project as something that is needed to combat California's energy crisis. Mr. Leschinsky resides on the Delta and he is in favor of the project's proposal to use recycled water. He does not believe that the EAEC will create air pollution or noise problems in the area, particularly in view of his favorable past dealings with Calpine in Plumas County. (10/21 RT 78:11-80:16.)

Mr. Nick Papadakos, a Byron resident and native, is very active in the community's civic affairs. He voiced his support for the EAEC project and recommended that the CEC approve it in view of Calpine's experience in the field. (10/21 RT 80:21-82:2.)

Mr. Temple Campbell, an electrician and Tracy resident for about 11 years, commented favorably on the proposed project and its impact on visual aspects. He stated that rather than the EAEC, the new neighborhoods being developed in the area would obscure undeveloped views of the area's hills and peaks such as Mount Diablo. He stated his opinion that the community should support the energy aspects of the proposed project and not adopt a more provincial not in my backyard approach. (10/21 RT 82:6-87:17.)

Mr. Ron Robinson, an area resident for 22 years, stated his support of the EAEC from the standpoint of its proposed use of Mountain House recycled water. As an owner of a local marina, he is opposed to Mountain House having the authority to dump recycled water into Old River. He noted that the EAEC would apply the latest technology to generate electricity efficiently and to reduce harmful air emissions that will hasten the demise of older dirtier facilities. Mr. Robinson noted Calpine's agreement with the SJVUAPCD to fund "a lot of local emission reduction programs." Mr. Robinson stated his opinion that the mitigation agreement will benefit local emission policies in the San Joaquin Valley. Calpine's interest in making California energy generation sufficient and not held hostage to out-of-state concerns is, in his view, an idea the community should support. In reaching his decision, Mr. Robinson considered the economic benefits to the community. He also considered the EAEC project's proposed location near the Tracy substation and gas pipelines. In its proposed location, he did not feel that the project would hinder important viewpoints. (10/21 RT 83:21-85:25.)

Mr. Wayne Livingston, a Manteca resident and a professional electrician commented favorably in terms of EAEC's provision of power uses to the local area. As a member of the Electricians Union, and having been employed as an electrician for 39 years, Mr. Livingston views the proposed EAEC project as a net benefit for both the residents and the local infrastructure. (10/22 RT 266:4-267:16.)

Gail Mercer, with the Northern California Electrical Construction Industry, views the proposed EAEC facility as providing a benefit for the area.[16] She commented that many of the union's members live in the area proposed for the EAEC facility. The Union supports the EAEC's potential provision of power for

[16] Ms Mercer commented that the Electrical Union represents over 140 electrical contractors and thousands of electricians in 11 counties in northern California, including Alameda, Contra Costa and San Joaquin. (10/21 RT 447:7-13.)

the accompanying local growth in industry, housing and commerce. She is in favor of EAEC's proposed location in rural Alameda County where it will provide modern and efficient generation, and be located near needed infrastructure such as gas, water, and power distribution facilities. In addition, she believes the facility would provide a water resource's benefit by its use of recycled water that would prevent the MHCSD from having to potentially degrade water quality in Old River by dumping it there. (10/21 RT 138:8-139:24; 447:6-449:1.)

2. Project Opponents

San Joaquin County's Board of Supervisors (SJCBOS) is on record as opposed to the EAEC. Significantly, the SJCBOS serves as the Board of Directors for the MHCSD, which must contract with BBID for the provision of Mountain House recycled water to EAEC. (Exs. 8, p. 9; *cf.* 8 M, pp. 2-3 & 8N; 10/16 RT 33:10-18.) The SJCBOS will serve as the governing board of the MHCSD until at least 1,000 voting residents of Mountain House petition for a new board comprised of community members. The first residents of Mountain House are expected to arrive in March 2003. (10/16 RT 358:8-10.)

Staff notes San Joaquin County Board of Supervisors Resolution 406, which states the County's opposition to several proposed consequences of the EAEC including the loss of water to farming and other users because of the EAEC's demand. Staff's findings coincide with those of the County and we have adopted **Conditions of Certification**, which mitigate those impacts. (Ex. 1, p. 5.14-40; see our **Soil and Water** section, *infra*.)

The Tracy Fire Department (TFD), represented by Battalion Chief Larry Fragoso, expressed frustration over a lack of mitigation to be provided to the TFD. TFD is expected to respond to emergencies at the power projects near the City of Tracy in both San Joaquin and Alameda County. In addition, for emergencies near Tracy in Alameda County, TFD has provided automatic aid over the past 24

years. According to Chief Fragoso, Alameda County Fire Department's (ACFD) failure to discuss appropriate mitigation for TFD has resulted in termination of all automatic aid into the area of Alameda County closest to the City of Tracy (Altamont/Midway Road areas). The TFD is the nearest emergency services resource (within three miles) for residences in the area. In addition, Chief Fragoso commented that the deteriorating relationship between the departments over appropriate mitigation for TFD threatens the counties past agreements for mutual aid. (10/15 RT 163:9-168:12; Exs 1 G; 6 A 1& 6 A 2.)

Intervenor Sarvey made public comment to the effect that the CEC's position in not recommending Worker Safety and Fire Protection mitigation to San Joaquin County or the Tracy Fire Department is erroneous under California's Environmental Quality Act (CEQA). Intervenor Sarvey commented that the development of power plants in the region has driven a wedge between the ACFD and the TFD because the latter is not receiving its fair share of resources for increased services. (Pub. Res. Code, § 21000 et seq.; 10/15 RT 172:22-177:17.)

The Sierra Club, San Francisco Bay Chapter, by Resolution dated October 14, 2002, voted to oppose the EAEC project. Mr. Dick Schneider, the Sierra Club's Bay Chapter Conservation Chair testified that he presented the Resolution to the Executive Committee, and was present at the time that it was adopted.
(10/16/ RT 199:21-200-13; 10/21 RT 24:12-207-3; Ex. 6 C.)

Sharon Votaw and the Pellegris offered public comment that BBID's commitment of water to the EAEC will negatively impact farmers with riparian rights to water as well as the Whitehall (now Union Mutual) and Fremont Irrigation Districts. Anecdotally, Ms. Votay commented that currently "our pumps" are sometimes out of water. She added that the South Delta Improvement Program plan would take 10,300 cfs more water out of the same area by the year 2007, further adversely affecting water rights in the South Delta area. (10/16 RT 389:5-17.)

Paula Buenavista, a Tracy resident and a representative for a local community group called CACKLE, provided comment in the areas of Air Quality, Water Resources, and Public Health. Ms. Buenavista expressed the view that the proposed EAEC facility will further degrade the area's air quality and she expressed no confidence in the AQMA providing adequate mitigation. She questioned the availability of recycled water in view of other potential uses in the Mountain House community and the lack of home sales. She attributes the homes sales problems to homebuyers electing to avoid living next door to a power plant such as the EAEC. She also voiced concerns about water supplies, priority and notice for local farmers in case of a drought versus supply to the EAEC. (10/16 RT 389:22-390-16; 10/21 RT 135:12-138:3; 324:14-326:21.)

Monica Lowney raised concerns regarding the availability of recycled water and the possibility of it having an odor as well as airborne health effects. She questioned whether area farmers or residents would be adversely affected by Calpine's need for fresh (raw) water. Ms. Lowney expressed concern about EAEC's proximity to a local school and homes. She questioned how public safety might be adversely affected due to the Alameda County Fire Department's (ACFD) long distance away from the proposed project. She noted that the San Joaquin Board of Supervisors was formally opposed to the EAEC project and could deny it use of Mountain House's recycled water. (10/16 RT 390:17-391-22.)

Susan Sarvey, a local resident in Tracy and a CACKLE representative, provided public comment in the areas of Air Quality, Fire Protection, Land Use, Water Resources, Public Health, and Visual Resources. Mrs. Sarvey commented that the proposed EAEC facility would sacrifice clean air, public health, water, land values and visual aesthetics to the detriment of local residents. She believes the project would cause or contribute to direct negative health conditions such as asthma. Mrs. Sarvey does not view the proposed EAEC as appropriate infrastructure because of its negative cumulative air impacts, and she expressed

concern over Applicant's AQMA with the SJVUAPCD, and Applicant's choice of anhydrous ammonia over aqueous ammonia. Mrs. Sarvey also expressed security concerns with respect to the influx of new power generators in the area. (10/21 RT 132:8-135:8; 417:25-427:4; 446:21-447:4; 10/22 RT 188:9-190:6.)

C. SITE CERTIFICATION PROCESS

The EAEC and its related and ancillary facilities fall within the CEC's licensing jurisdiction. (Pub. Res. Code, §§ 25500 et seq.). During its licensing proceedings, the CEC acts as lead state agency under CEQA. (Pub. Res. Code, §§ 25519 (c), 21000 et seq.) The CEC's process and associated documents are functionally equivalent to the preparation of the traditional Environmental Impact Report. (Pub. Res. Code, § 21080.5.)

The CEC's process is designed to allow the review of a project to be completed within a limited period; a license issued by the CEC is in lieu of other state and local permits. The CEC's certification process provides a thorough and timely review and analysis of all aspects of this proposed project. During the process, we conduct a comprehensive examination of a project's potential economic, public health and safety, reliability, engineering, and environmental ramifications.

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

The process begins when an Applicant submits the Application for Certification (AFC). CEC staff reviews the data submitted as part of this AFC, and recommends to the CEC whether or not it contains adequate information to permit review to commence. Once the CEC determines that an AFC contains sufficient analytic information, it appoints a Committee of two Commissioners to conduct the licensing process. The CEC also appoints a hearing officer to provide legal assistance to the Committee in each case. This process includes holding public conferences and evidentiary hearings, as well as providing a

recommendation to the full CEC concerning a project's ultimate acceptability. The Committee and ultimately the CEC serve as fact-finder and decision-maker.

The CEC has a Public Advisor. The role of the CEC's Public Advisor is to assist members of the public and intervenors with their understanding of and participation in the CEC's siting process.

All parties, including the applicant, CEC staff, and any intervenors, are subject to the *ex parte* rule, which prohibits them from communicating on substantive matters with Committee members, their staffs, and the hearing officer, except for communications, which are on the public record.

The initial portion of the certification process is weighted heavily toward assuring public awareness of the proposed project and obtaining such further technical information as is necessary. During this time, the CEC staff sponsors numerous public workshops at which intervenors, agency representatives, members of the public, Staff, and Applicant meet to evaluate and resolve pertinent issues. Staff then publicizes its initial technical evaluation of the project in the document called the Preliminary Staff Assessment (PSA).

Following this, the Committee conducts a Prehearing Conference to assess the adequacy of the available information, identify issues, and determine the positions of the various participants. Information obtained from this event form the basis for a Hearing Order organizing and scheduling formal evidentiary hearings. These hearings are conducted after Staff has finalized its analytical technical evaluation of the project in the document that is called the FSA.

At the evidentiary hearings following the FSA's release, all participants that have become 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 the proposed project at these

hearings. Evidence and public comment adduced during these hearings provides the basis for the decision-makers' analysis.

This analysis appears in a Committee recommendation to the full CEC in the form of a Presiding Member's Proposed Decision, which is available for a public review period of at least 30 days. Depending upon the extent of revision necessary in reaction to comments received during this period, the Committee may then elect to publish a Revised Version of the PMPD. If so, this latter document triggers an additional 15-day public comment period. Finally, the full CEC decides whether to accept, reject, or modify the Committee's recommendations at a public hearing.

D. PROCEDURAL HISTORY

The Public Resources Code and the CEC's regulations mandate a public process and specify the occurrence of certain necessary events. (Pub. Res. Code, §§ 25500 et seq.; Cal. Code of Regs., tit. 20, §§ 1701, et seq.) The essential procedural elements occurring during the present case are summarized below.

On March 29, 2001, Applicant filed its Application for Certification (AFC) with the CEC. Shortly thereafter, Staff sent a "request for agency participation" to those governmental agencies likely to have an interest in the project. On June 27, 2001, the full CEC determined that Applicant had made its AFC sufficiently informative and complete to commence the review process.

The Committee scheduled its initial event, an "Informational Hearing and Site Visit", by notice dated July 10, 2001. This notice was sent to all known to be interested in the proposed project, including owners of land adjacent to, or in the near vicinity of, the East Altamont Energy Center project; it was also published in local and general circulation newspapers.

On August 9, 2001, the Committee conducted the Informational Hearing in the City of Tracy. There, the Committee, Applicant, Staff, and other participants discussed the proposed project, described the CEC's review process, and identified opportunities for public participation. In addition, Applicant hosted a visit to the proposed power plant site.

On August 24, 2001, the Committee issued its required Scheduling Order. Staff and WAPA released their joint PSA/ and on December 6, 2001, and conducted various workshops to receive comments on the PSA. However, the PSA was incomplete due to several data issues that could not be analyzed or reconciled

absent further information from Applicant or outside agencies. (*See* Ex. 1, pp. 1-4/1-9.)

For example, for the PSA Staff did not have the benefit of BAAQMD's Preliminary Determination of Compliance (PDOC). BAAQMD released the PDOC on April 12, 2002, some four months after Staff's release of its PSA. BAAQMD issued the FDOC on July 24, 2002, after which Staff commenced its final air quality analysis for inclusion in its final environmental document, the FSA.

In the interim, the Committee conducted Scheduling Conferences on January 3, May 20 and August 7, 2002.[17] On August 21, 2002, the Committee issued its Notice of Prehearing Conference and Committee Scheduling Order, which called for Staff's FSA (and WAPA's EA) no later than September 19, 2002.

On September 19, 2002, Staff and WAPA filed a joint FSA/FEA. On October 3, 2002, the Committee scheduled Evidentiary Hearings by publishing a Notice of Evidentiary Hearings. On October 7, 2002, the Committee conducted the Prehearing Conference in these proceedings in Sacramento, California, at which time the Committee addressed issues related to conduct of the evidentiary hearings and of special concern to the parties. The Committee also discussed special concerns of the parties regarding scheduling.

Finally, on October 15, 16, 21 and 22, 2002, the Committee conducted evidentiary hearings in the City of Tracy, California, San Joaquin County. Thereafter, on January 29, 2003, the Committee after reviewing and compiling the evidentiary record published this Presiding Member's Proposed Decision (PMPD). The Committee has selected February 24, 2003, as the date for the Committee Conference on the PMPD.

---

[17] Prior to release of the PSA/PEA, the Committee also conducted a Scheduling Conference on November 13, 2001.

Based upon the Committee Conference, and any other comments received, the Committee may issue revisions to the PMPD. If substantial revisions are contemplated to the PMPD, the Committee may elect to issue a Revised PMPD. If this occurs, the parties will have an additional 15-day comment period in which to address any concerns. Thereafter, the CEC will issue its Decision on the East Altamont Energy Center.

I. PROJECT PURPOSE AND DESCRIPTION

On March 29, 2002, Applicant filed an Application for Certification (AFC) seeking CEC approval to construct and operate an 1,100-megawatt (MW) natural gas-fired combined cycle electrical generating facility in the unincorporated portion of Alameda County, California. On June 27, 2001, the CEC found the AFC to be data adequate, which finding began Staff's analysis of the East Altamont Energy Center (EAEC) project.

Project Location

Applicant proposes to construct and operate the EAEC, an energy generating facility known in the unincorporated area of Alameda County. The power plant footprint will consist of 43.5 acres and will accommodate:

- generation facilities,
- control and administration buildings,
- emission control equipment,
- storage tanks,
- parking areas, and
- storm water detention basins. (Exs. 1, pp. 3.1/4; 2 & Supps., § 2.)

The proposed facilities will be located in the eastern corner of Alameda County, approximately 1 mile west of the San Joaquin County line and 1 mile southeast of the Contra Costa County line. *(Ibid.)*

Power Plant

The proposed EAEC will include:

- three "F-class" combustion turbine generators (CTGs) equipped with dry, low oxides of nitrogen (NO_X) combustors,

- steam injection capability for power augmentation;
- three heat recovery steam generators (HRSG);
- a single condensing steam turbine-generator (STG);
- a deaerating surface condenser;
- a mechanical draft cooling tower; and
- support equipment. (Exs. 1, pp. 3.1/4; 2 & Supps., § 2.)

Each HRSG unit will have a 175-foot exhaust stack and will be equipped with duct burners for additional steam production when increased electric power generation is necessary. *(Ibid.)*

To control emissions of air pollutants, EAEC will have gas turbines with dry, low nitrogen oxide (NO_X) combustors. The units will use the best available control technology (BACT) including selective catalytic reduction (SCR) for control of NO_x. The SCR system consists of a reduction catalyst and an anhydrous ammonia injection system. In addition, the EAEC is required by the Bay Area Air Quality Management District to provide emission reduction credits for oxides of nitrogen (NO_X), particulate matter 10 microns or less in aerodynamic size (PM_{10}), and precursor organic compounds (POC). *(Ibid.)*

Natural Gas Facilities and Transmission Line

Natural gas will be supplied from a 1.8-mile pipeline that will be constructed to deliver fuel from a Pacific Gas and Electric (PG&E) pipeline located southwest of the project site. The pressure of natural gas delivered to the site is expected to be approximately 800 pounds per square inch gauge. (Exs. 1, pp. 3.1/4; 2 & Supps., § 2.)

EAEC will interconnect with the electrical grid from a switchyard built on the plant site, which connects to WAPA's Tracy Substation located immediately to the west of the project site through the existing Mid/TID 230 kV line. The proposed

transmission lines are two parallel 0.5-mile 230-kilovolt (kV) double-circuit overhead lines. (Exs. 1, pp. 3.1/4; 2 & Supps., § 2.)

Water Supply and Waste Water Treatment

Applicant plans to supply the plant's cooling and process water requirements (roughly 4,600 acre-feet per year in a typical year, up to 7,000 AFY in a peak demand year) with raw (i.e. untreated) water from the Byron Bethany Irrigation District (BBID), via a 2.1-mile pipeline. Applicant will supplant raw water with recycled water as the community of Mountain House is developed and recycled water becomes available. BBID intends to serve the facility with recycled water obtained from the Mountain House Community Service District (MHCSD) wastewater treatment plant (WWTP), offsetting raw water use. EAEC has been designed to use recycled water of the quality expected from the MHCSD WWTP. (Exs. 1, pp. 3.1/4; 2 & Supps., § 2.)

For BBID's raw water conveyance, Applicant's preferred route would require a pump station at Canal 45, Bruns Road, and 2.1 miles of pipeline. The pipeline would cross one high-pressure oil pipeline and Canal 45 along the gravel road, and it would require routing under the Delta-Mendota Canal. *(Ibid.)*

The preferred route for the recycled water line would entail the construction of approximately 4.6 miles of pipeline from the MHCSD WWTP to the project site. In Supplement C to the AFC, Applicant reported a refinement to the preferred route for the recycled water line. The refinement was to clarify that the pipeline would run along the south side of Byron Bethany Road rather than the north side, thus avoiding biological and cultural resources that are found along the north side of Byron Bethany Road. In addition, the preferred route was changed so that the pipeline would enter the site from the northeast corner of the 174-acre parcel rather than the northwest corner. *(Ibid.)*

Applicant proposes to use BBID water for potable/domestic water purposes, which would necessitate the installation of a water treatment system to treat the water to drinking water standards. *(Ibid.)*

EAEC, as proposed, includes a zero-liquid discharge system designed to eliminate off-site disposal of wastewater. Process wastewater would be reclaimed and reused, to the extent possible. Cooling water would be cycled three to eight times (depending on water quality) in the cooling tower; wastewater would then be directed to a zero liquid discharge treatment system, where the majority of the water would be reclaimed, leaving a relatively dry salt cake suitable for landfill disposal. Sanitary wastewater from sinks and toilets would be discharged to an onsite septic tank and leach field. *(Ibid.)*

Fiber Optic Cable

Applicant has planned a fiber optic cable conduit to be installed from the project switchyard across Mountain House Road to the Tracy Substation. The purpose of the cable would be to provide a second communication link for relay protection and control system. (Exs. 1, pp. 3.1/4; 2 & Supps., § 2.)

Operation and Closure

Applicant proposes to operate the EAEC as a merchant power facility, selling its energy under contracts or in the spot market. The EAEC would be expected to have an annual availability in the general range of 92 to 98 percent. The exact operational profile of the plant, however, would vary according to demand in the deregulated California energy market. *(Ibid.)*

The planned life of the EAEC facility is 30 years or longer. Whenever the facility is closed, either temporally or permanently, the closure procedures will follow the described plan provided in the EAEC AFC, LORS, and in the Staff Assessment discussions on facility closure and Conditions of Certification. *(Ibid.)*

FINDINGS AND CONCLUSIONS

Based upon the evidence of record, the Committee finds as follows:

1. The project involves the construction and operation of an 1,100-megawatt (MW) nominal natural gas-fired combined cycle electrical generating facility in the unincorporated portion of Alameda County, California.

2. The project will also include a 1.8-mile natural gas pipeline, two 0.5-mile 230kV double-circuit transmission lines, an underground fiber optic cable, a 2.1- mile raw water pipeline and a 4.6-mile recycled water pipeline.

3. The project is adequately described in the AFC and FSA.

We therefore conclude that the EAEC project is described at a level of detail sufficient to allow review in compliance with the provisions of both the Warren-Alquist Act and the California Environmental Quality Act (CEQA).

II. PROJECT ALTERNATIVES

The Commission is required during the AFC process to examine the feasibility of site and facility alternatives that may avoid or lessen the potential significant environmental impacts of a proposed project. The National Environmental Policy Act (NEPA) requires that the decision-makers and the public be fully informed of the impacts associated with the proposed project. The intent is to make good decisions based on understanding environmental consequences, and to take actions to protect, restore, and enhance the environment. The Western Area Power Authority's (WAPA)'s Environmental Assessment (EA) is intended to provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement. (Pub. Res. Code, § 21080.5(b)(3)(A); Cal. Code of Regs., tit. 20, § 1765; 42 U.S.C. 4371 et seq.; 40 C.F.R. §§ 1500 et seq.; 10 C.F.R. 1021.)[18]

We note that Applicant provided an Alternatives analysis as part of the AFC. (Ex. 2, § 9.5.2).)[19] According to the AFC, Applicant chose the proposed site for the following reasons:

- The site is close to an existing transmission substation with access to PG&E, Western, Modesto Irrigation District (MID), Turlock Irrigation District (TID), and through PG&E, the Independent System Operator (ISO) electrical markets;
- Sufficient land is available for the 40-acre site plus a construction laydown area;
- The site is served by a water purveyor with adequate water supply sources to support the project;
- The site is close to a PG&E natural gas pipeline;
- The site is located in a rural area with few residences nearby;

---

[18] *See* our Introduction and Staff's Alternatives analysis, which explains more fully WAPA's requirements and role in the EAEC project. (Ex. 1, pp. 7-4/6/27.)

[19] Although Applicant's AFC was not required to contain a discussion of site alternatives, the Commission's CEQA duty remained unchanged. (*See* Pub. Resources Code, § 25540.6 (b).)

- The project would be consistent with other neighboring utility uses, such as the transmission substation; and
- Even though the parcel is zoned agricultural, a generating facility could be allowed through under Alameda County's East County Area Plan. (Ex. 1, p. 7.3.)

Staff also conducted an Alternatives analysis as part of its Staff Analysis of the EAEC project. Therefore, this Decision complies with the "CEQA guidelines", which require:

> an evaluation of the comparative merits of "a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project…", as well as an evaluation of the "no project" alternative. (14 CCR, § 15126 (d).)

The range of alternatives that we are required to consider is governed by a "rule of reason". This means that our consideration of alternatives may be limited only to those:

> that would avoid or substantially lessen any of the significant effects… while continuing to attain most of the basic objectives of the project, and need not include those alternatives whose effects cannot be reasonably ascertained and whose implementation is remote and speculative. (14 CCR, § 15126 (d) (5); Ex. 1, p. 7.2.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

Staff and Applicant

The evidence of record addresses alternatives to the EAEC project's major components. This includes generation technology, site selection, and linear facility routing. The methodology used to prepare the alternatives analysis includes:

- Identifying the basic objectives of the project;
- Providing an overview of the project's potentially significant adverse impacts (including appurtenant facilities);

- Identifying and evaluating alternatives to the project;
- Identifying and evaluating alternative locations for sites; and
- Evaluating the impacts of not constructing the project. (Exs. 1, p. 7.3; 3 B.)

1. Project Objectives

Staff summarized Applicant's objectives for constructing the EAEC project as follows:

- Construction and operation of a merchant power plant with access to multiple markets;
- To be located near a substation and key infrastructure for natural gas, water supply and transmission lines;
- Generation of approximately 1,100 MW of electricity; and;
- To be online by 2005. (Ex. 1, p. 7-4.)

2. Potentially Significant Adverse Impacts

The environmental impacts of the project are discussed in detail in the individual subject areas of this Decision. However, in its Alternatives analysis Staff identified potentially significant, unmitigated, adverse environmental impacts in the subject area of Visual Resources.[20] Our findings with respect to Staff's conclusions and Applicant's ability to mitigate impacts to levels of insignificance are discussed under the respective topics. (Ex. 1, p. 7-6.)

3. Technological Alternatives

Applicant and Staff reviewed various alternative technologies that can be grouped according to the fuel used, which include:

- conventional boiler and steam turbine;
- simple cycle combustion turbine;

[20] In total, Staff identified the potential for significant environmental effects in the technical areas of air quality, biology, land use, visual resources, hazardous materials, and soil and water

- conventional combined cycle;
- Kalina combined cycle;
- advanced combustion turbines;
- natural gas;
- coal;
- oil;
- solar;
- wind;
- hydroelectric;
- biomass; and
- geothermal technologies. (Exs. 1, p. 7-6; 2, § 9.5.2; 3 B, p. 4. 0-3.)

Biomass generation uses a waste vegetation fuel source such as wood chips (the preferred source) or agricultural waste. The fuel is burned to generate steam. However, Staff found that biomass facilities generate substantially greater quantities of air pollutant emissions than natural gas burning facilities. In addition, biomass plants are typically sized to generate less than 20 MW, which is substantially less than the capacity of the proposed 1,100 MW EAEC project. (Ex. 1, p. 7-29.)

Geothermal technologies use steam or high-temperature water (HTW) obtained from naturally occurring geothermal reservoirs to drive steam turbine/generators. There are vapor-dominated resources (dry, super-heated steam) and liquid-dominated resources where various techniques are utilized to extract energy from the HTW. Staff concluded that this technology is:

- limited to areas that have geologic conditions resulting in high subsurface temperatures, and
- There are no geothermal resources in the project vicinity, making this technology an infeasible alternative. (Ex. 1, p. 7-29.)

---

resources. Staff found that with mitigation, impacts in all of these issue areas, except visual resources, have been found less than significant. (Ex. 1, p. 7-6.)

While hydropower does not require burning fossil fuels and may be available, this power source can cause significant environmental impacts primarily due to the inundation of many acres of potentially valuable habitat and the interference with fish movements during their life cycles. Because of these impacts, it is extremely unlikely that new hydropower facilities could be developed and permitted in California within the next several years. (Ex. 1, p. 7-30.)

Wind carries kinetic energy that can be utilized to spin the blades of a wind turbine rotor and an electrical generator, which then feeds alternating current (AC) into the utility grid. Most state-of-the-art wind turbines operating today convert 35 to 40 percent of the wind's kinetic energy into electricity. Modern wind turbines represent viable alternatives to large bulk power fossil power plants as well as small-scale distributed systems. The range of capacity for an individual wind turbine today ranges from 400 watts up to 3.6 MW. (Ex. 1, p. 7-30.)

California's 1,700 MW of wind power represents 1.5 percent of the state's electrical capacity. Although air emissions are significantly reduced or eliminated for wind facilities, they can have significant visual effects. In addition, wind turbines can cause bird mortality (especially for raptors) resulting from collision with rotating blades. Wind resources would require large land areas in order to generate 1,100 MW of electricity. Depending on the size of the wind turbines, wind generation "farms" generally require between five and 17 acres to generate one megawatt (resulting in the need for between 5,500 and 18,700 acres to generate 1,100 MW). Although 7,000 MW of new wind capacity power could cost-effectively be added to California's power supply, the lack of available transmission access is an important barrier to wind power development. *(Ibid.)*

California has a diversity of existing and potential wind resource regions that are near load centers such as San Francisco, Los Angeles, San Diego and Sacramento. However, wind energy technologies cannot provide full-time availability due to the natural intermittent availability of wind resources.

Therefore, wind generation technology would not meet the project's goal, which is to provide immediate power to meet peaks in demand. *(Ibid.)*

Solar generation available currently is of two types: solar thermal power and photovoltaic (PV) power generation. Solar thermal power generation uses high temperature solar collectors to convert the sun's radiation into heat energy, which is then used to run steam power systems. Solar thermal is suitable for distributed or centralized generation, but requires far more land than conventional natural gas power plants. Solar parabolic trough systems, for instance, use approximately five acres to generate one megawatt. (Ex. 1, p. 7-28.)

Photovoltaic (PV) power generation uses special semiconductor panels to convert sunlight into electricity. Arrays built from the panels can be mounted on the ground or on buildings, where they can also serve as roofing material. Unless PV systems are constructed as integral parts of buildings, the most efficient PV systems require about four acres of ground area per megawatt of generation. *(Ibid.)*

Solar resources would require large land areas in order to meet the project objective to generate 1,100 MW of electricity. For example, assuming that a parabolic trough system was located in a maximum solar exposure area, such as in a desert region, generation of 1,100 MW would require 5,500 acres. For a PV plant, generation of 1,100 MW would require 4,400 acres. *(Ibid.)*

While solar generation facilities do not generate problematic air emissions and have relatively low water requirements, there are other potential impacts associated with their use. Construction of solar thermal plants can lead to habitat destruction and visual impacts. PV systems can also have negative visual impacts, especially if ground-mounted. Furthermore, PV installations are capital intensive and manufacturing of the panels generates some hazardous wastes.

Both solar thermal and PV facilities generate power during peak usage periods since they collect the sun's radiation during daylight hours. Although the use of solar technology may be appropriate for some peaker plants, solar energy technologies cannot provide full-time availability due to the natural intermittent availability of solar resources. Therefore, solar generation technology would not meet the project's goal, which is to provide immediate power to meet peaks in demand. (Ex. 1, p. 7-30.)

Staff concluded that the renewable technologies discussed above:

- have the advantage of not requiring the burning of fossil fuels and avoiding the environmental and resource impacts associated with natural gas-fired power;
- have the potential to cause significant land use, biological, cultural resource, and visual impacts of their own; and
- have substantial cost and regulatory hurdles to overcome before they can provide substantial amounts of power
- should be eliminated as alternatives because (a) they cannot feasibly meet project objectives, and (b) they have the potential to create potentially significant environmental effects of their own; and
- are not consistent with Western's purposes and need to provide non-discriminatory open transmission access. (Ex. 1, p. 7-31.)

Staff also reviewed measures such as conservation and demand-side management, which were deemed inadequate to provide power for the objectives that could be attributed to the EAEC. (Ex. 1, p. 7-27/28.)

4. Alternative Locations

Our record indicates too that Applicant and Staff, together, evaluated eight alternate site locations, four[21] of which did not satisfy Staff's screening criteria for

[21] These four sites are discussed briefly in Staff's FSA. (Ex. 1, p. 7-24/26.)

inclusion in a detailed analysis.[22] Staff identified two additional potential alternative sites, (the I-580 Alternative and the Lodi Site), during the initial screening. The I-580 Alternative Site was eliminated, but the Lodi Alternative Site was retained for detailed analysis, as were the three remaining sites, which Applicant had reviewed in the AFC. (Ex. 1, p. 7-11-24.)

Staff applied evaluation criteria for each of the remaining four sites, which satisfied the screening criteria, using the standards of whether the alternative site would:

- avoid or substantially lessen one or more of the potential significant effects of the EAEC project?
- Satisfy the following criteria:
  - Location. In order to meet reliability objectives, the site should be located near major Central Valley transmission lines.
  - Site suitability. Sufficient land (25 acres) as the minimum lot size needed to accommodate the facility.
  - Availability of infrastructure. The site should be within a reasonable distance of natural gas and water supply.
- Not create significant impacts of its own.
- Be available for purchase.
- Be sufficiently far from moderate or high-density residential areas or to sensitive receptors (such as schools and hospitals) or to recreation areas Be available for purchase.
- Allow the project to be on-line on or before 2005? (Ex. 1, p. 7-12.)

Following the stated objectives for EAEC as set forth above, each site was found deficient in some important locational or environmental aspect and all

[22] Eight alternative sites were identified during Staff's initial screening of site alternatives. Applicant presented six of these as part of its alternatives analysis. Three of Applicant's sites were eliminated from further analysis during the initial screening phase. Another, the Tesla site, was eliminated because CEC review is currently underway of the Tesla Power Plant Project, a similar project at that location; siting an alternative at that location would not maintain a reasonable range of alternatives. (Ex. 1, p. 7-11.)

alternatives were eliminated when compared to the proposed site. (Ex. 1, pp. 7-11-24; 25/26; 31/32; Staff Opening Reply Brief on Phase 1 Topics, p. 23.)

5. No Project

CEQA Guidelines, CEC regulations and NEPA's "no action" alternative require us to consider the "No Project" Alternative, which assume that the project is not constructed. Under this alternative, we compare the "No Project" alternative to the scenario that is presented by the EAEC project. (Cal. Code Regs., tit. §15126.6 (i); Ex. 1, p. 7-24.)

While the impacts of the EAEC project would not occur with the no project alternative, Staff concluded that the benefits of the project would also be eliminated. According to Staff, these benefits include:

- contribute to California's generating resources by adding an important 1,100 MW electrical generation facility for California's electricity supply;
- help form a more reliable electric system that meets the goals of the deregulated energy market.
- meet California's increasing demands for power without the resultant consequence of similar power plant construction at another location;
- increase competition and help form a more reliable electric system that meets the goals of the deregulated energy market;
- the potential due to market forces for retiring older, less efficient power plants; and,
- Applicant's contractual requirements with the Department of Water Resources to provide electricity to the State of California.[23] (Ex. 1, p. 7-24; 27; 32.)

On the other hand, if the EAEC facility were not constructed, the proposed site would remain in agricultural production, the area would remain farmland and the fresh surface water would be available for potable water uses. In addition, the

[23] The Committee also finds as a benefit that treated wastewater would not be discharged into Old River as described in our section on Soils and Water Resources, *infra*.

rural character and setting would be preserved, and additional power to meet both the applicant's objectives and the State's needs would not be available. (Ex. 1, p. 7-24.)

Intervenors Sarvey and CARE

The Intervenors argue that Applicant's power contract with the state through the DWR taints the CEC's licensing process with bias and renders our result in favor of licensing as preordained. Both Intervenors Sarvey and CARE argue that DWR's contract with Applicant is tantamount to a license and evinces the state's "precommitment to project approval." (Intervenor Sarvey Reply Brief, pp. 24-28 & Opening Brief on Phase 1 Topic Areas, pp. 26-33; Intervenor CARE's Addendum Brief.)[24]

In addition, Intervenor Sarvey argues that the EAEC proposed project demonstrates the state's:

- over-development of green-field sites to the detriment of previously developed sites; and,
- over-reliance on natural gas to the detriment of greater fuel diversity, system reliability, and electricity costs. (Intervenor Sarvey Opening Brief on Phase 1 Topic Areas, pp. 30-33.)

COMMISSION DISCUSSION

We believe that the Intervenors misinterpret Staff's discussion of the DWR contract as a mechanism for approval of the EAEC AFC, rather than as simple recognition that the proposed project represents a stated objective of the EAEC project:

> Staff believes both the contract and the projected online date are key elements that support the needed development of California's electricity supply. (Ex. 1, Executive Summary, pp. 11-12.)

[24] CARE's Addendum to 10-29-02 Post Hearing Brief, which was docketed on October 30, 2002.

The FSA's Executive Summary language quoted by the Intervenors in their papers contains the identical passage, which we above quote. We believe that Staff's reliance on the DWR contract should be read as simply reinforcing the obvious: that is, the proposed EAEC is an important facility for California's future electricity supply needs.

We might view the situation otherwise if Staff relied on any particular provision of the DWR contract to enhance the EAEC's potential importance, or to circumvent the quality of its environmental review. However, our record here reveals the contrary. For example, we can find no over reliance the contract, indeed Staff never offered the contract into evidence and we can find no reliance by Staff on any particular provision.[25] Similarly, evidence of record demonstrates that Staff has conducted what we view as a very circumspect and comprehensive review of the EAEC project. We are therefore persuaded that the DWR contract in this proceeding represents no more than a forthright recognition that the proposed EAEC project will help form a more reliable electric system that meets the goals of the deregulated energy market. (Ex. 1, p. 7-24.)

Insofar as this Committee's position and the CEC's role in the regulatory process, we believe that Applicant correctly summarizes the law, as follows:

> [T]he Energy Commission is not committed to approve this Application. The mere fact that the applicant may be a State agency or that a State may subsequently acquire a facility, does not mean that the Commission is "committed" to give the facility a license. The Commission has previously reviewed AFCs where a State agency is the Applicant (DWR South Geysers). The Commission has also reviewed AFCs where the Applicant may have a contract to sell power to a State agency. These AFCs receive the same scrutiny as any other applicant. The California Energy Commission is an independent regulatory body, with

[25] Intervenor Sarvey introduced the DWR contract into the record and the Committee accepted it as his exhibit 6 G. In their post hearing briefs to the Committee, neither Intervenor has attempted to contravene the contract's terms as described by Ms. Torre, EAEC's project development manager, at the October 16, 2002, evidentiary hearing.

> Commissioners who are appointed for specific terms and who may only be removed by the Legislature, by concurrent resolution adopted by a majority vote of all members elected to each house, for extraordinary cause. (Applicant's Closing Brief, pp. 32, citing Pub. Resources Code § 25206, 25215.)

Moreover, Applicant's testimony at the evidentiary hearing established that the DWR contract does not even require that the EAEC facility to be constructed.

> MS. TORRE: This contract provides for a systems sale by Calpine to be delivered to points on north 11 path 15, which means in northern California, from generating assets in the western system coordinating council, which I believe has been 14 renamed, and I'm not familiar with the new name. It does not provide for any unit-specific sales. And certainly none from East Altamont Energy Center. In northern California alone, Calpine has three gas fired facilities in operation, and a number of geothermal facilities, which together provide more than enough generation to fulfill this contract. So the contract is not with East Altamont Energy Center. It is not a unit-specific sale. It is a systems sale. And although the contract provides for certain consequences if Calpine does not meet specific milestones in the development of the East Altamont Energy Center, Calpine's obligations to develop -- to deliver electricity and the state's obligations to pay for those deliveries would not be affected, since the contract provides for a systems sale. (10/16 RT 474:21-476:8.)

On cross-examination from CARE, Ms. Torre, who is the EAEC's project development manager, provided that a systems sale means that a company such as Calpine:

- is making a commitment to provide a certain amount of energy at the delivery point from whatever resource is available to it;
- a system sale is not unit-specific, even to the assets it owns in that region;
- there are no commitments under the DWR contract de to deliver electricity from any specific generating unit within the western system coordination council region owned or controlled by Calpine. (10/16 RT 478:24-496:6.)

Finally, with respect to Intervenors Sarvey's arguments concerning diversification of electrical supply facilities to avoid over reliance on natural gas and new greenbelts, we think that those goals are very laudable. We encourage

developers to present those to us. Notwithstanding our prompting, we are duty-bound to evaluate the project before us rather than those, which may come later. Because Staff has found no significant impacts to natural gas supplies due to the proposed EAEC project, and our findings that its environmental impacts may be substantially mitigated, we are persuaded that the Alternatives analysis presented in the joint FSA/EA satisfies the requirements of the governing authorities.

FINDINGS AND CONCLUSIONS

Based upon the totality of the evidence of record, including that relating to each subject area contained in other portions of this Decision, we find and conclude as follows:

1. The evidence of record contains an acceptable analysis of a reasonable range of alternatives to the project as proposed.

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

3. No alternative to the EAEC project considered by the Commission, including but not limited to the 'no project' alternative would avoid or lessen any direct, indirect, or cumulative significant adverse environmental impact.

4. No alternative to the project considered by the Commission, including but not limited to the 'no project' alternative is feasible, because none are capable of meeting the project objectives as specified in the Staff Analysis.

We therefore conclude that the evidence of record contains an analysis of possible alternatives to the EAEC project, including its appurtenant facilities, which satisfy the requirements of both the Warren-Alquist Act and CEQA and its implementing regulations.

III. COMPLIANCE AND CLOSURE

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

Summary of the Evidence

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

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

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

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

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

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

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

FINDINGS AND CONCLUSIONS

The evidence of record establishes that the:

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

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

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

COMPLIANCE PLAN

GENERAL CONDITIONS OF CERTIFICATION

COMPLIANCE PROJECT MANAGER (CPM) RESPONSIBILITIES

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

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

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

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

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

Pre-Construction and Pre-Operation Compliance Meeting

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

Energy Commission Record

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

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

PROJECT OWNER RESPONSIBILITIES

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

Western's Responsibilities

Western's responsibilities will include establishing conditions and ensuring compliance with those conditions for the electric transmission portions of the project that are under federal ownership and operation.

By voluntarily agreeing to a joint analysis process with the Energy Commission and to any Conditions of Certification imposed by the Energy Commission for approval of the project, Western is not ceding any jurisdictional authority over federal facilities to the State of California.

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

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

Compliance Record, COM-2

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

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

Reporting of Unplanned Outages, COM-3

Throughout the life of the project, the project owner shall immediately report all unplanned outages, via e-mail to the Compliance Program Manager and to the CPM. The expected duration and reason for the outage shall be included in the report. Telephone communication is also encouraged. Contact shall be made as follows:

- Compliance Program Manager
  E-mail: cnajaria@energy.state.ca.us telephone: (916) 654-4079
- Compliance Project Manager
  E-mail: ilewis@energy.state.ca.us telephone: (916) 654-4678

Compliance Verification Submittals, COM-4

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

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

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

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

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

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

All submittals shall be addressed as follows:

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

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

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

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

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

timely manner. This will ensure that project construction may proceed according to schedule.

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

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

COMPLIANCE REPORTING

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

COMPLIANCE MATRIX, COM-6

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

1. the technical area;
2. the condition number;
3. a brief description of the verification action or submittal required by the condition;
4. the date the submittal is required (e.g., 60 days prior to construction, after final inspection, etc.);
5. the expected or actual submittal date;
6. the date a submittal or action was approved by the Chief Building Official (CBO), CPM, or delegate agency, if applicable;

7. the compliance status of each condition (e.g., “not started,” “in progress” or “completed” (include the date); and
8. the project’s pre-construction and construction milestones, including dates and status.

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

MONTHLY COMPLIANCE REPORT, COM-7

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

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

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

8. a projection of project compliance activities scheduled during the next two months. The project owner shall notify the CPM as soon as any changes are made to the project construction schedule that would affect compliance with conditions of certification or milestones;
9. a listing of the month's additions to the on-site compliance file; and
10. any requests to dispose of items that are required to be maintained in the project owner's compliance file.

ANNUAL COMPLIANCE REPORT, COM-8

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

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

11. a listing of all outages planned for the coming year and a listing of all outages that occurred during the previous year, including the anticipated duration and the reason for each outage occurrence.

CONSTRUCTION AND OPERATION SECURITY PLAN, COM-9[26]

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

Construction Security Plan

The Construction Security Plan must address:

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

Operation Security Plan

The Operations Security Plan must address:

1. permanent site fencing and security gate;
2. use of security guards;
3. security alarm for critical structures;
4. protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency;
5. evacuation procedures;

---

[26] The Committee has accepted Staff's recommended Condition **COM-9**. (Ex. 1 A; Jt. Ex. 5 B; 10/16 RT 511:23-518:5; 10/21 RT 22:6-24-11; 10/22 RT 280:20-281-16; *Cf.* Staff's Closing Brief, pp. 41-44; Applicant Opening Brief on Phase 3 issues, pp. 27-29 & Att. A.)

6. perimeter breach detectors and on-site motion detectors;
7. video or still camera monitoring system; and
8. fire alarm monitoring system.
9. site personnel background checks.
10. Site access for vendors and requirements for Hazardous Materials vendors to conduct personnel background security checks.
11. In addition, the project owner shall prepare a Vulnerability Assessment and implement site security measures addressing hazardous materials storage and transportation consistent with USEPA and US Department of Justice guidelines.

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

CONFIDENTIAL INFORMATION, COM-10

Any information that the project owner deems confidential shall be submitted to the Energy Commission's Docket with an application for confidentiality pursuant to Title 20, California Code of Regulations, section 2505(a). Any information, 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, COM-11

Pursuant to the provisions of Fish and Game Code Section 711.4, the project owner shall pay a filing fee in the amount of $850. The payment instrument shall be provided to the Energy Commission's Project Manager (PM), not the CPM, at the time of project certification and shall be made payable to the California Department of Fish and Game. The PM will submit the payment to the Office of Planning and Research at the time of filing of the notice of decision pursuant to Public Resources Code Section 21080.5.

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

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

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

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

FACILITY CLOSURE

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

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

CLOSURE DEFINITIONS

Planned Closure

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

Unplanned Temporary Closure

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

Unplanned Permanent Closure

An unplanned permanent closure occurs if the project owner closes the facility suddenly and/or unexpectedly, on a permanent basis. This includes unplanned closure where the owner remains accountable for implementing the on-site

contingency plan. It can also include unplanned closure where the project owner is unable to implement the contingency plan, and the project is essentially abandoned.

GENERAL CONDITIONS FOR FACILITY CLOSURE

Planned Closure, COM-13

In order to ensure that a planned facility closure does not create adverse impacts, a closure process that provides for careful consideration of available options and applicable laws, ordinances, regulations, standards, and local/regional plans in existence at the time of closure, will be undertaken. To ensure adequate review of a planned project closure, the project owner shall submit a proposed facility closure plan to the Energy Commission for review and approval at least twelve months prior to commencement of closure activities (or other period of time agreed to by the CPM). The project owner shall consult with Western on the closure plan. The plan shall address impacts to Western's facilities and operations. 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.
5. In the event that there are significant issues associated with the proposed facility closure plan's approval, or the desires of local officials or interested parties are inconsistent with the plan, the CPM shall hold one or more workshops and/or the Energy Commission may hold public hearings as part of its approval procedure.
6. In addition, prior to submittal of the proposed facility closure plan, a meeting shall be held between the project owner and the Energy Commission CPM for the purpose of discussing the specific contents of the plan.
7. As necessary, prior to or during the closure plan process, the project owner shall take appropriate steps to eliminate any immediate threats to public health and safety and the environment, but shall not commence any other closure activities, until Energy Commission approval of the facility closure plan is obtained.

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

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

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

11. 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.

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

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

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

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

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

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

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

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

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

CBO DELEGATION AND AGENCY COOPERATION

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

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

ENFORCEMENT

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

Moreover, to ensure compliance with the terms and conditions of certification and applicable LORS, delegate agencies are authorized to take any action allowed by

law in accordance with their statutory authority, regulations, and administrative procedures.

NONCOMPLIANCE COMPLAINT PROCEDURES

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

Informal Dispute Resolution Procedure

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

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

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

Request for Informal Investigation

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

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

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

Request for Informal Meeting

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

1. immediately schedule a meeting with the requesting party and the project owner, to be held at a mutually convenient time and place;
2. secure the attendance of appropriate Energy Commission staff and staff of any other agencies with expertise in the subject area of concern, as necessary;
3. conduct such meeting in an informal and objective manner so as to encourage the voluntary settlement of the dispute in a fair and equitable manner; and

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

Formal Dispute Resolution Procedure-Complaints and Investigations

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

The Chairman, upon receipt of a written request stating the basis of the dispute, may grant a hearing on the matter, consistent with the requirements of noticing provisions. The Energy Commission shall have the authority to consider all relevant

facts involved and make any appropriate orders consistent with its jurisdiction (Cal. Code Regs., tit. 20, §§ 1232-1236).

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

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

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

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

AMENDMENT

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

INSIGNIFICANT PROJECT CHANGE

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

VERIFICATION CHANGE

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

KEY EVENTS LIST, COM-7

PROJECT: **East Altamont Energy Center Project**

DOCKET: #: 01-AFC4

COMPLIANCE PROJECT MANAGER: Ila Lewis

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

TABLE 1
COMPLIANCE SECTION
SUMMARY of GENERAL CONDITIONS OF CERTIFICATION

Condition Number	Page Number	Subject	Description
COM-1	4	Access	The project owner shall grant Energy Commission staff and delegate agencies or consultants unrestricted access to the power plant site.
COM-2	4	Compliance Record	The project owner shall maintain project files on-site. Energy Commission staff and delegate agencies shall be given unrestricted access to the files.
COM-3	4	Reporting of Unplanned Outages	Throughout the life of the project, the project owner shall immediately report all unplanned outages.
COM-4	4	Compliance Verification Submittals	The project owner is responsible for the delivery and content of all verification submittals to the CPM, whether such condition was satisfied by work performed or the project owner or his agent.
COM-5	5	Pre-construction Matrix and Tasks Prior to Start of Construction	Construction shall not commence until the all of the following activities/submittals have been completed: Property owners living within one mile of the project have been notified of a telephone number to contact for questions, complaints or concerns, a pre-construction matrix has been submitted identifying only those conditions that must be fulfilled before the start of construction, all pre-construction conditions have been complied with, the CPM has issued a letter to the project owner authorizing construction.
COM-6	6	Compliance Matrix	The project owner shall submit a compliance matrix (in a spreadsheet format) with each monthly and annual compliance report which includes the status of all compliance conditions of certification.
COM-7	7	Monthly Compliance Report including a Key Events List	During construction, the project owner shall submit Monthly Compliance Reports (MCRs) which include specific information. The first MCR is due the month following the Commission business meeting date on which the project was approved and shall include an initial list of dates for each of the events identified on the Key Events List.
COM-8	7	Annual Compliance Reports	After construction ends and throughout the life of the project, the project owner shall submit Annual Compliance Reports (ACRs) which include specific information. The first ACR is due after the air district has issued a Permit to Operate.
COM-9	8	Security Plans	Prior to commencing construction, the project owner shall submit a Construction Security Plan. Prior to commencing operation, the project owner shall submit an Operation Security Plan.

Condition Number	Page Number	Subject	Description
COM-10	9	Confidential Information	Any information the project owner deems confidential shall be submitted to the Commission's Dockets Unit.
COM-11	9	Dept of Fish and Game Filing Fee	The project owner shall pay a filing fee of $850 at the time of project certification.
COM-12	9	Reporting of Complaints, Notices and Citations	Within 10 days of receipt, the project owner shall report to the CPM, all notices, complaints, and citations.
COM-13	11	Planned Facility Closure	The project owner shall submit a closure plan to the CPM at least twelve months prior to commencement of a planned closure.
COM-14	12	Unplanned Temporary Facility Closure	To ensure that public health and safety and the environment are protected in the event of an unplanned temporary closure, the project owner shall submit an on-site contingency plan no less than 60 days prior to commencement of commercial operation.
COM-15	13	Unplanned Permanent Facility Closure	To ensure that public health and safety and the environment are protected in the event of an unplanned permanent closure, the project owner shall submit an on-site contingency plan no less than 60 days prior to commencement of commercial operation.
COM-16	15	Post-certification changes to the Decision	The project owner must petition the Energy Commission to delete or change a condition of certification, modify the project design or operational requirements and/or transfer ownership of operational control of the facility.

ATTACHMENT A

COMPLAINT REPORT/RESOLUTION FORM

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

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

IV. ENGINEERING ASSESSMENT

A. FACILITY DESIGN

Facility Design encompasses the civil, structural, mechanical, and electrical engineering design of the project. The purpose of the Facility Design analysis is to verify that the laws, ordinances, regulations and standards (LORS) applicable to the design and construction of the project have been identified; verify that the project and ancillary facilities have been described in sufficient detail, determine whether special design features should be considered during final design to deal with conditions unique to the site describe the design review and construction inspection process and establish Conditions of Certification that will be used to monitor and ensure compliance with the intent of the LORS and any special design requirements.

Summary of the Evidence

Applicant's witness sponsored testimony on Facility Design, Power Plant Reliability, and Power Plant Efficiency. He reviewed the FSA and agreed with Staff's proposed conditions of certification. (Exs. 1; 3D, pp. 3.1-1 and 3.1-2.)]

After reviewing Applicant's design proposals for the project's structural features, site preparation, major structures and equipment, mechanical systems electrical designs and ancillary facilities, the Staff concluded that as conditioned the project design would:

- meet all LORS; and
- impose no significant impacts on the environment. (Ex. 1, pp. 6.1-5 to 6.1-6.)

FINDINGS AND CONCLUSIONS

Based upon the uncontroverted evidence of record, the Committee finds as follows:

1. The laws, ordinances, regulations, and standards (LORS) identified in the AFC and supporting documents are those applicable to the project.

2. The design, construction, and eventual closure of the project will comply with applicable engineering LORS.

3. The Conditions of Certification proposed will ensure that the proposed facilities are designed, constructed, operated, and eventually closed in accordance with applicable LORS.

4. The Facility Design aspects of the proposed project do not create significant potential cumulative impacts.

5. The Conditions of Certification below and the provisions of the Compliance Plan contained in this Decision set forth requirements to be followed in the event of the planned, or the unexpected temporary, or the unexpected permanent closure of the facility.

We therefore conclude that with the implementation of the Conditions of Certification listed below, the EAEC project will be designed and constructed in conformity with applicable laws pertinent to its geologic, and its 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 engineering LORS in effect at the time initial design plans are submitted to the CBO for review and approval. (The CBC in effect is that edition that has been adopted by the California Building Standards Commission and published at least 180 days previously.) All transmission facilities (lines, switchyards, switching stations, and substations) are handled in Conditions of Certification in the Transmission System Engineering section of this document.

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

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

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

TABLE 1
Major Structures and Equipment List

Equipment/System	Quantity (Plant)
Combustion Turbine (CT) Foundation and Connections	3
CT Mechanical Accessories (e.g. lube oil cooler, static motor starter, No_x control system, compressor wash system, fire detections system, fuel heating system, etc.) Foundation(s) and Connections	3
CT Structure Shell and Façade Foundation and Connections	3
Table 1: Continued	
CT Inlet Air Plenum and Filter Structure, Foundation and Connections	3
CT Inlet Air Evaporative Cooler Foundation and Connections	3
Combustion Turbine Generator (CTG) Foundation and Connections	3

Heat Recovery Steam Generator (HRSG) Structure, Foundation and Connections	3
HRSG Exhaust Stack, Foundation and Connections	3
HRSG Transition Duct Burner and Forced Draft Structure, Foundations and Connections	3
Selective Catalytic Reduction Unit Foundation and Connections	3
Steam Turbine (ST) Foundation and Connections	1
ST Structure Shell and Façade Foundation and Connections	1
Steam Turbine Generator (STG) Foundation and Connections	1
STG Lube Oil Skid Foundation and Connections	1
STG Hydraulic Control System Foundation and Connections	1
Mechanical Draft Evaporative Cooling Tower, Support Structures, Foundations and Connections	1 Lot
Pipe and Cable Way Structures, Foundations and Connections	1 Lot
Electrical MCC, Building Structure, Foundation and Connections	1
18KV Auxiliary Step-Down Transformer Foundation and Connections	2
230KV Step-Up Transformer, Fire Protection System Foundation and Connections	4
Load Center Transformers (4,160 to 480 Volt) Foundation(s) and Connections	1 Lot
125 VDC Power Supply System	1 Lot
Electrical Control Centers, Switchgear and Switchyard Equipment Foundations and Connections	1 Lot
Power Distribution Center Foundation and Connections	1 Lot
Generator – Natural Gas Fired 1,000 KW Emergency, Foundation and Connections	1

Table 1: Continued

Natural Gas Filter/Scrubber/Separator Foundation and Connections	1 Lot
Natural Gas Separator/Heater Foundation and Connections	1 Lot
Natural Gas Metering and Regulating Station Foundations and Connections	1 Lot

All Building Structures, Foundations and Connections (e.g. Control Room, Administration Building, Warehouse, Bulk Storage Building, Equipment Shelter, De-Mineralized Water Treatment Building, Mechanical Shop, Fire Pump Building, Fuel Gas Compressor Building, Compressor Building, Switchyard Control Building, Boiler Feed Pump Building, etc.)	1 Lot
Skid – Amonia Blower Injection Foundation and Connections	1 Lot
Tank – Ammonia Storage, Foundation and Connections	1
Tank – Raw/Fire Water, 5,000,000 Gallon, Foundation and Connections	2
Tank – Oily Water Separator, Foundation and Connections	1 Lot
Tank – Combustion Turbine Water, Foundation and Connections	1
Tank – Demineralized Water, 500,000 Gallon, Foundation and Connections	2
Tank – Boiler Blowdown, Foundation and Connections	1 Lot
Tanks – Water Treatment Facilities (e.g. Sulfuric Acid, Scale Inhibitor, Sodium Hypochlorite, Bromine, Non-Oxidizing Biocide, Oxygen Scavenger, Amine, Phosphate, etc.) Foundation and Connections (as required by CBC)	1 Lot
Pump – Fire Water Pump Skid (electric jockey pump, electric main pump, and diesel back-up pump) Foundation and Connections	1 Lot
Pump – HSRG Feedwater Foundation and Connections	6
Pump – Boiler Water Feed Pump Foundation and Connections	1 Lot
Pump – Demineralized Water Transfer Pump Foundation and Connections	1 Lot
Pump – Condensate Pump Foundation and Connections	3
Pump – Circulating Water Foundation and Connections	2

Table 1: Continued

Pumps – Water Treatment and Cooling Systems (e.g. Auxiliary Cooling Water, Aqueous Ammonia Transfer, Aqueous Ammonia Unloading, Closed Loop Cooling Water, Oily Water Sump, Raw Water, Sulfuric Acid, Scale Inhibitor, Sodium Hypochlorite, Bromine, Non-Oxidizing Biocide, Oxygen Scavenger, Amine, Phosphate, etc.) Foundation and Connections (as required by CBC)	1 Lot
Cooling Tower/Air Cooled Condenser Structure, Foundation and Connections	1 Lot
Boiler – Auxiliary, Stack, Foundation and Connections	1
Auxiliary Boiler SCR System Foundation and Connections	1 Lot
Ammonia Injection Skid Foundation and Connections	1 Lot
Compressors – Air Foundation(s) and Connections	1 Lot
Compressors – Fuel Gas Foundation(s) and Connections	1 Lot
Pipeline – Water Supply	1
Pipeline – Recycled Water Supply	1
Pipeline – Natural Gas	1
Potable Water Systems	1 Lot
Chemical Containment Systems	1 Lot
Fire Suppression Systems	1 Lot
Drainage Systems (including sanitary, storm drain, and waste)	1 Lot
Waste Water Evaporation Ponds (5 Acres Each)	2
Building Energy Conservation Systems	1 Lot
Temperature Control and Ventilation Systems (including water and sewer connections)	1 Lot
High Pressure Piping	1 Lot
HVAC and Refrigeration Systems	1 Lot

GEN-3 The project owner shall make payments to the CBO for design review, plan check and construction inspection based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. These fees may be consistent with the fees listed in the 1998 CBC [Chapter 1, Section 107 and Table 1-A, Building Permit Fees;

Appendix Chapter 33, Section 3310 and Table A-33-A, Grading Plan Review Fees; and Table A-33-B, Grading Permit Fees], adjusted for inflation and other appropriate adjustments; may be based on the value of the facilities reviewed; may be based on hourly rates; or may be as otherwise agreed by the project owner and the CBO.

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

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

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

Protocol: The RE shall:

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

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

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

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

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

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

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

GEN-5 Prior to the start of construction, 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 in the Transmission System Engineering section of this document.

The tasks performed by the civil, mechanical, electrical or design engineers may be divided between two or more engineers, as long as each engineer is responsible for a particular segment of the project (e.g., proposed earthwork, civil structures, power plant structures,

equipment support). No segment of the project shall have more than one responsible engineer. The transmission line may be the responsibility of a separate California registered electrical engineer.

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

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

The civil engineer shall:

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

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].

The design engineer shall:

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

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.

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 project owner and CBO approved alternative timeframe) prior to the start of rough grading, the project owner shall submit to the CBO for review and approval, the resumes and registration numbers of all the responsible engineers assigned to the project. The project owner shall notify the CPM of the CBO's approvals of the engineers within five days of the approval.

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

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

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 [1998 CBC, Chapter 17, Section 1701.3, Duties and Responsibilities of the Special Inspector]; and
4. Submit a final signed report to the RE, CBO, and CPM, stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans and specifications and the applicable provisions of the applicable edition of the CBC.
5. 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 (or project owner and CBO approved alternative timeframe) prior to the start of an activity requiring special inspection, the project owner shall submit to the CBO for review and approval, with a copy to the CPM, the name(s) and qualifications of the certified weld inspector(s), or other certified special inspector(s) assigned to the project to perform one or more of the duties set forth above. The project owner shall also submit to the CPM a copy of the CBO's approval of the qualifications of all special inspectors in the next Monthly Compliance Report.

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

notify the CPM of the CBO's approval of the newly assigned inspector within five days of the approval.

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

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

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

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

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

- Design of the proposed drainage structures and the grading plan;
- An erosion and sedimentation control plan;
- Related calculations and specifications, signed and stamped by the responsible civil engineer; and
- 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 (or project owner and CBO approved alternative timeframe) prior to the start of site grading, the project owner shall submit the documents described above to the CBO for design review and approval. In the next Monthly Compliance Report following the CBO's approval, the project owner shall submit a written statement certifying that the documents have been approved by the CBO.

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

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

Protocol: If, in the course of inspection, it is discovered that the work is not being performed in accordance with the approved plans, the discrepancies shall be reported immediately to the resident engineer, the CBO, and the CPM [1998 CBC, Appendix Chapter 33, Section 3317.7, Notification of Noncompliance]. The project owner shall prepare a written report detailing all discrepancies and non-compliance items, and the proposed corrective action, and send copies to the CBO and the CPM.

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

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

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

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

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

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

If the CBO discovers non-conformance with the stated requirements, the project owner shall resubmit the corrected plans to the CBO within 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 engineering LORS.

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

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

2. Concrete pour sign-off sheets;

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

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

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

Verification: If a discrepancy is discovered in any of the above data, the project owner shall, within five (5) days, prepare and submit an NCR describing the nature of the discrepancies to the CBO, with a copy of the transmittal letter to the CPM [1998 CBC, Chapter 17, Section 1701.3, Duties and Responsibilities of the Special Inspector]. The NCR shall reference the Condition(s) of Certification and the applicable CBC chapter and section. Within 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 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 project owner and CBO approved alternate timeframe) prior to the start of installation of the tanks or vessels containing the above specified quantities of toxic or hazardous materials, the project owner shall submit to the CBO for design review and approval final design plans, specifications, and calculations, including a copy of the signed and stamped engineer's certification.

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

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

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

- American National Standards Institute (ANSI) B31.1 (Power Piping Code);
- ANSI B31.2 (Fuel Gas Piping Code);
- ANSI B31.3 (Chemical Plant and Petroleum Refinery Piping Code);
- ANSI B31.8 (Gas Transmission and Distribution Piping Code);
- Title 24, California Code of Regulations, Part 5 (California Plumbing Code);

- Title 24, California Code of Regulations, Part 6 (California Energy Code, for building energy conservation systems and temperature control and ventilation systems);
- Title 24, California Code of Regulations, Part 2 (California Building Code); and
- Specific City/County code.

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

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

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

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

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

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

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

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

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

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

LORS [1998 CBC, Section 108.4, Approval Required, and Section 108.3, Inspection Requests]. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in Conditions of Certification in the Transmission System Engineering section of this document.

Protocols: Final plant design plans to include:

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

Final plant calculations to establish:

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

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

- receipt or delay of major electrical equipment;
- testing or energization of major electrical equipment; and a signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications conform to requirements set forth in the Energy Commission Decision.
- a signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications conform to requirements set forth in the Energy Commission Decision.

Verification: At least thirty (30) days (or project owner and CBO approved alternative timeframe) prior to the start of each increment of electrical

construction, the project owner shall submit to the CBO for design review and approval the above listed documents. The project owner shall include in this submittal a copy of the signed and stamped statement from the responsible electrical engineer attesting compliance with the applicable LORS, and shall send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

E.. POWER PLANT EFFICIENCY

The Energy Commission makes findings as to whether energy use by the EAEC will result in significant adverse impacts on the environment, as defined in the California Environmental Quality Act (CEQA). If the Energy Commission finds that the EAEC consumption of energy creates a significant adverse impact, it must determine whether there is any feasible mitigation measures that could eliminate or minimize the impacts. In this analysis, we address the issue of inefficient and unnecessary consumption of energy.

Summary of Evidence

Applicant's witness sponsored testimony on Power Plant Reliability. Applicant addressed the efficiency of alternative generating technologies such as conventional boiler and steam turbine, simple cycle combustion turbine, conventional combined cycle, Kalina combined cycle, advanced combustion turbines, natural gas, coal, oil, solar, wind, hydroelectric, biomass, and geothermal technologies are all considered. One of the project's stated objectives is to generate efficient energy near the center of demand. (Exs. 2, pp. 9-2 to 9-3; 3 D.)

Staff testified that under expected project conditions, electricity will be generated at a full load efficiency of approximately 56 percent LHV, compared to the average fuel efficiency of a typical utility company baseload power plant at approximately 35 percent LHV. Given the project objectives, location, and air pollution control requirements, Staff agrees with the Applicant that only natural gas-burning technologies are feasible. Further, Staff found that no cumulative impacts on energy resources are likely and that closure of the facility will not present significant impacts on electric system efficiency. (Ex. 1, p. 6.3-3/7-9.)

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, the Committee finds as follows:

1. The EAEC project will not create significant adverse effects on energy supplies or resources in California.

2. The EAEC project will not consume energy in a wasteful or inefficient manner.

3. The EAEC project will have no significant adverse impacts on energy resources.

4. Given the EAEC project objectives, location and air pollution control requirements, Staff agrees with the Applicant that only natural gas-burning technologies are feasible.

5. The EAEC project will consist of three "f"-class combustion turbine generators with inlet air fogging systems and power augmentation via steam injection generating approximately 180 MW each at base load under average ambient conditions, three multi-pressure heat recovery steam generators (HRSGs) with duct burners, and one 3-pressure, reheat, condensing steam turbine generator generating approximately 550 MW under average ambient conditions with maximum HRSG duct firing, arranged in a three-on-one combined cycle configuration, totaling approximately 820 MW at base load, with up to an additional 269 MW of peaking capacity provided by HRSG duct burners and combustion turbine power augmentation via steam injection. The gas turbines will be equipped with dry low-NO_x combustors and the HRSGs will be equipped with selective catalytic reduction to control air emissions.

We therefore conclude that the EAEC project will not cause any significant adverse impacts to energy supplies or energy resources. The project will conform will all applicable laws, ordinances, regulations, and standards (LORS) related to Power Plant Efficiency. No Conditions of Certification are proposed concerning the topic of Power Plant Efficiency.

E.. POWER PLANT RELIABILITY

In this analysis, the Energy Commission addresses the reliability issues of the project to determine if the power plant is likely to be built in accordance with typical industry norms for reliability of power generation. This level of reliability is useful as a benchmark because the resulting project would likely not degrade the overall reliability of the electric system it serves.

Summary of Evidence

Applicant's witness provided testimony on Power Plant Efficiency. Staff found that the EAEC project will be built and operated in a manner consistent with industry norms for reliable operation, and that Applicant's predicted equivalent availability factor in the 92 to 98 percent range is achievable in light of the industry norm of 91.5 percent for this type of plant. (Exs. 1, p. 6.4-7; 2; 3 D.)

FINDINGS AND CONCLUSIONS

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

1. The EAEC project will ensure equipment availability by implementing quality assurance/quality control programs during design, procurement, construction, and operation of the plant and by providing for adequate maintenance and repair of the equipment and systems.

2. There is adequate fuel and water availability and capacity for project operations.

3. In light of the historical performance of California power plants and the electrical system in seismic events, there is no special concern with power plant functional reliability affecting the electric system's reliability due to seismic events.

4. The project's estimated 92-98 percent availability factor is consistent with, or exceeds industry norms for power plant reliability.

We therefore conclude that the project will not have an adverse effect on system reliability. No Conditions of Certification are required for this topic.

E.. TRANSMISSION SYSTEM ENGINEERING

The Warren-Alquist Act requires the Energy Commission to "prepare a written decision that includes:

- Specific provisions relating to the manner in which the proposed facility is to be designed, sited, and operated in order to protect environmental quality and assure public health and safety, and
- Findings regarding the conformity of the proposed site and related facilities…with public safety standards…and with other relevant local, regional, state and federal standards, ordinances, or laws…(Pub. Resources Code, § 25523 (a) & (d) 1.)

Summary of the Evidence

The new EAEC 230 kV switchyard would be configured with a 3,000-ampere main and a 3,000-ampere transfer bus. The switchyard would have four or five switch bays, each with a breaker and a half arrangement, for a total of up to fifteen air-insulated 230 kV circuit breakers. Each breaker would be designed for 63 kiloampere (kA) interrupting capacity. The EAEC switchyard would be connected to the existing Western grid by looping the existing Tracy-Westley double circuit lines (jointly owned by the MID and TID). It is currently operating as a single line, but would be split into two lines through the EAEC switchyard by terminating the lines on two 2,000-ampere separate breakers at the Tracy and Westley substation ends. In order to connect the EAEC switchyard to the existing Tracy-Westley 230 kV double circuit lines, about 0.5 mile of two new double circuit transmission lines on separate steel tubular pole structures will be built on the south side of the EAEC switchyard. As a result, there would be two Tracy-EAEC 230 kV lines and also two EAEC-Westley 230 kV lines. This configuration for the interconnection and switchyard is in accordance with good utility practices and is considered acceptable. The EAEC switchyard work will be done within the fenced yard of the EAEC plant. The preferred route for the new interconnection transmission lines will extend from the EAEC plant to Kelso Road. Western will design, own, and operate the switchyard, and Western or the

Applicant will build the switchyard and the new transmission lines (Ex. 1, p. 6.5-2).

The System Impact Study was performed by Western, (the transmission owner), and PG&E (Ex. 2) with a 2005 summer peak case, which included approved PG&E and SMUD major transmission expansion plans, modeled major transmission system path flows, major generation in the system, and all proposed generation projects queued to be on-line before the on-line date of the EAEC project. The EAEC net maximum generation output was modeled as 1,070 MW. The Western report included a Power Flow study with and without the EAEC project under normal and contingency conditions, Post-transient Voltage study, and the Short Circuit study for PG&E, Western, SMUD, MID and TID systems. The PG&E report included a Dynamic Stability Analysis and a Short Circuit study with addition of the EAEC project for the PG&E system. Western performed the SIS with a 2005 spring peak case, and did not find any adverse impacts in the system due to the addition of the EAEC. Applicant's witnesses testified that with the implementation of the proposed conditions, potential impacts on the transmission system and the environment, if any, would be mitigated to a level of insignificance. (Exs. 2, § 5; 3E.)

With implementation of the proposed conditions, the EAEC project will comply with the applicable federal, state, local laws, ordinances, regulations, and standards. The Detailed Facilities Interconnection Study (DFIS) prepared by Western and approved by CEC staff has identified no major transmission impacts resulting from the interconnection of EAEC to Western's transmission grid. Furthermore, Applicant has worked closely with Western, PG&E, SMUD, MID, and TID to ensure that potential impacts, if any, are mitigated to a level of less than significant.[27] (Ex. 2, p. 3.4-3.)

---

[27] We note the public comment of the Modesto Irrigation District (MID) about results of preliminary studies indicating significant impacts on some parts of MID's 230 kV and 69 kV systems. MID and Applicant have discussed the issue and our expectation is that it will be resolved in a

FINDINGS AND CONCLUSIONS

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

1. Western Area Power Administration and PG&E have performed System Impact/ Facilities Study to analyze any potential reliability and congestion impacts that could occur when EAEC interconnects to the grid.
2. With the implementation of the proposed conditions of Certification, the project will comply with the applicable federal, state, and local laws, ordinances, and standards.
3. The Detailed Facilities Interconnection Study prepared by Western and approved by CEC staff has identified no major transmission impacts resulting from the interconnection of EAEC to Western's transmission grid.
4. The analysis contained in the Staff testimony of record establishes that the proposed EAEC switchyard and interconnection facilities to the Western Area Power Administration will be adequate and reliable.

We therefore conclude that with the implementation of the various mitigation measures specified in this Decision, the proposed transmission interconnect for the project will not contribute to significant direct, indirect, or cumulative environmental impacts. The Conditions of Certification below ensure that the transmission related aspects of the EAEC will be designed, constructed, and operated in conformance with the applicable laws, ordinances, regulations, and standards identified in the appropriate portions of Appendix A of this Decision.

We further conclude that interconnection of the project at Western's Tracy Substation is acceptable, and that it will not result in the violation of any criteria pertinent to transmission engineering.

---

satisfactory manner without any need for us to consider imposing appropriate mitigation

CONDITIONS OF CERTIFICATION

TSE-1 The project owner shall ensure that the design, construction and operation of the proposed transmission facilities shall conform to all applicable LORS including the requirements 1a) through 1h) listed below. The substitution of Compliance project manager (CPM) approved "equivalent" equipment and an equivalent substation configuration is acceptable.

1. The project 230 kV switchyard shall have switch bays with a double bus, and a breaker and a half configuration.
2. The power plant switchyard and outlet lines shall meet or exceed the electrical, mechanical, civil and structural requirements of Western interconnection standards, Western' DFIS, CPUC General Orders 95 (GO-95) or National Electric Safety Code (NESC), Title 8 of the California Code and Regulations, Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders", National Electric Code (NEC) and related industry standards.
3. Breakers and buses in the power plant switchyard and other switchyards, where applicable, shall be sized to comply with a short-circuit analysis.
4. 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.
5. Termination facilities shall comply with applicable Western interconnection standards.
6. The project conductors shall be sized to accommodate the full output from the project.
7. The existing Tracy-Westley 230 kV double circuit line shall be split into two lines and terminated on two separate breakers at the Tracy and Westley substations with interconnection of the EAEC plant switchyard to the two lines. The existing Tracy 230 kV bays 1 to 12 shall be converted from main and transfer to a double bus-double breaker configuration.
8. The project owner shall provide:

i) Any modified Detailed Facility Interconnection Study (DFIS) including a description of facility upgrades, operational mitigation measures, and/or Remedial Action Scheme (RAS) or Special Protection System (SPS) sequencing and timing if applicable,

---

measures. (10/21 RT 74:12-76:22.)

ii) Executed Facility Interconnection Agreement with Western,

iii) A copy of the Notice to Cal-ISO prior to synchronization of the facility with the California transmission grid.

iv) A letter stating that the mitigation measures or projects for each criteria violation selected by Western, PG&E, SMUD and MID are acceptable.

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

Electrical one line diagrams signed and sealed by a registered professional electrical engineer in responsible charge (or other approval acceptable to the CPM), a route map, and an engineering description of equipment and the configurations covered by the requirements 1a) through 1h) above.

The Detailed Facilities Study (if modified) including a description of facility upgrades, operational mitigation measures and/or RAS or SPS, and the Interconnection Agreement (if either one are not otherwise provided to the Commission previously) and a signed letter from the project owner stating that the mitigation measures selected by Western, PG&E, SMUD and MID are acceptable. 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 that 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 or substation configurations shall not begin without prior written approval of the changes by the CPM.

Verification: At least sixty (60) days prior to the construction of the power plant switchyard and transmission facilities, the project owner shall inform the CPM of any impending changes that may not conform to requirements 1a) through 1h) 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 project construction, and any subsequent CPM approved changes thereto, to ensure conformance with CPUC GO-95 or NESC, Title 8 of the California Code of Regulations, Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders", Western's interconnection standards, NEC, related industry standards 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 to the grid, the project owner shall transmit to the CPM an engineering description(s) and one-line diagrams of the "as built" facilities signed and sealed by the registered electrical engineer in responsible charge (or other verification acceptable to the CPM, such as a letter stating that the attached diagrams have been verified by the engineer). A statement attesting to conformance with CPUC GO-95 or NESC, Title 8 of the California Code of Regulations, Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders", Western's interconnection standards, NEC, related industry standards and these conditions.

E.. TRANSMISSION LINE SAFETY AND NUISANCE

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

Summary of the Evidence

EAEC's electricity will be delivered to WAPA's power grid by connecting to the existing Westley-Tracy 230 kV line through two new 0.5-mile overhead 230 kV transmission lines extending from the project's on-site switchyard to the 230 kV lines just south of Kelso Road. The two connecting lines will be double-circuit 230 kV transmission lines to be designed and built according to standard practices reflecting compliance with applicable laws, ordinances, regulations and standards or LORS. (Ex. 2, p. 5-15/22.)

The site and the route of the project's transmission lines are in an unincorporated portion of Alameda County with relatively few residences within a one-mile radius of the project's property lines. The nearest residences is approximately 0.5 miles away, meaning that the residential power line field exposure at the root of the present health concern would be relatively insignificant for this project. The only exposure of potential concern would be to workers in the project area. However, the evidence of record found that there would be no significant impacts to public safety due to the project transmission line. (Exs. 1, § 5.10; 2, pp. 2-1, 5-1, 5-2, 8.4-1, & 8.9-2; & § 5.5.)

Aviation Hazard

The nearest airport to the project site is the Byron Airport approximately 2.8 miles to the northwest. Applicant has received a clearance letter from the Federal Aviation Administration on the Notice of Construction or Alteration application indicating that the project features would not cause any aviation obstructions. (Ex. 1, p. 5.5-1.)

Audible Noise and Radio Frequency Interference

The proposed transmission lines will be designed, built, and maintained to minimize the features responsible for line-related audible noise and interference with radio or television reception. The potential for such corona-related interference is usually of concern only for lines of 345 kV and above. The potential for such electric field-related impacts (and related complaints) is further minimized by the general lack of residences in the line's field impact area. There is no change to the existing lines' electric field or audible noise levels as there is no change to the voltages or line configurations. (Ex. 2, pp. 5.10-9, 5-17.)

Fire Hazard

Applicant intends to comply with the CPUC's GO-95 requirements, which will ensure that the proposed lines are adequately located away from trees and other combustible objets to prevent contact-related fires or minimize such fires when they occur. The potential for such fires is further minimized by the general absence of trees, brush or other large combustible objects within the lines route, which consists of agricultural uses (Ex. 2, pp. 5-11/18.)

Shock Hazards

Applicant intends to comply with the requirements of applicable regulations and standards intended to prevent hazardous or nuisance shocks to workers or the public. (Ex. 2, pp. 5-17/18.)

Electric and Magnetic Exposure

Applicant has presented the details of their field reducing design and operational plan for staff-required compliance with CPUC requirements. This plan includes specific measures to (a) decrease the spacing between conductors thereby ensuring maximum field cancellation, (b) measures to minimize line current thereby reducing field strength and (c) measure to utilize current flow patterns for maximum field cancellation. (Ex. 2, p. 5-15/18.)

To verify the effectiveness of these field-reducing measures, Applicant presented exposure estimates that reflect the contribution of the project's lines to the area's operational phase field exposures. These estimates were provided for the lines magnetic fields since magnetic fields are at the root of the present health concern over EMF exposure. Staff established from such estimates that the additional power from the proposed project would increase magnetic field levels (in the middle of the right-of-way) to 136.5 mG. The increase at the edge of the right-of-way would be a maximum of 30 mG. These field strength estimates are much lower than established by the few states with specific regulatory limits and reflect the effectiveness of the Applicant's intended measures. (Ex. 2, p. 5-16 & § 5 & App. 5.)

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, the Committee finds as follows:

1. The project transmission lines, which will connect through the existing 230 kV Westley-Tracy line to Western's transmission system, is an overhead 230 kV line that traverse an agricultural area.
2. EAEC's transmission lines will be designed in accordance with the electric and magnetic field reducing guidelines applicable to Western's transmission service area.
3. The site and the route of the project's transmission lines are located in the unincorporated portion of Alameda County with relatively few residences within one-mile radius of the project's property lines.
4. The estimated EMF exposures from the transmission lines are significantly below field levels established by states with regulatory limits for such fields.

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

We therefore conclude that with implementation of the Conditions of Certification, the project will conform with all LORS applicable to Transmission Line Safety and Nuisance as identified in the pertinent portions of Appendix A of this Decision.

CONDITIONS OF CERTIFICATION

TLSN-1 The project owner shall construct the proposed transmission line according to the requirements of CPUC's GO-95, GO-52, Title 8, Section 2700 et seq. of the California Code of Regulations and Western's EMF-reduction guidelines.

Verification: Thirty (30) days before starting construction of the transmission line or related structures and facilities, 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 overhead section will be constructed according to the requirements of GO-95, GO-52, Title 8, Section 2700 et seq. of the California Code of Regulations, and Western's EMF-reduction guidelines.

TLSN-2 The project owner shall ensure that all metallic objects along the route of the overhead section are grounded according to industry standards.

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

TLSN-3 The project owner shall take reasonable steps to resolve any complaints of interference with radio or television signals from operation of the proposed lines. Should Western become owner of the transmission lines, Western will share information and reports with the CPM.

Verification: Any reports of the line-related complaints shall be summarized along with related mitigation measures for the first five (5) years, and provided in an annual report to the CPM.

TLSN-4 The project owner shall engage a qualified consultant to measure the strengths of the line electric and magnetic fields from the proposed lines before and after they are energized. Measurements shall be made at representative points (on-site and along the line route) as necessary to identify the maximum field exposures possible during EAEC operations. All measurements, reports and mitigation shall be completed prior to turn over of equipment to Western and shall be completed with Westerns approval.

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. Staff will assess the need for further mitigation from the results of such measurements.

V. PUBLIC HEALTH AND SAFETY ASSESSMENT

EAEC's operation 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 (federal) ambient air quality standards (AAQS) have been established for six air contaminants identified as "criteria air pollutants." These include: (1) sulfur dioxide (SO_2), (2) carbon monoxide (CO), (3) ozone (O_3); (4) nitrogen dioxide (NO_2), (5) lead (Pb); and (6) particulate matter less than 10 microns in diameter (PM_{10}). (Ex. 1, p. 5.1-1 & Attachment A, pp. 11-15.)

Also included in this review are the precursor pollutants for ozone, which are nitrogen oxides (NO_x) and volatile organic compounds (VOC) and the precursors for PM_{10}, which are NO_x, VOC, and sulfates (SO_x).[28] (Ex. 1, p. 5.1-1.)

The federal Clean Air Act[29] 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

[28] Herein, the terms VOC and precursor organic compounds (POC) are used interchangeably.

[29] 42 U.S.C. § 7401 et seq.

quality better than the (AAQS) or non-attainment (worse than the AAQS) for criteria air pollutants. (Ex. 1, p. 5.1-1.)

There are two major components of air pollution law. A process referred to as New Source Review (NSR) evaluates pollutants that violate federal standards. Similarly, a process referred to as Prevention of Significant Deterioration (PSD) evaluates 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 above-listed six criteria pollutants. The California standards are typically more stringent (protective) than federal standards. Federal and state ambient air quality standards are shown below in **AIR QUALITY Table 1**.[30] (Ex. 1, p. 5.1-1/2-7.)

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 the Bay Area Air Quality Management District (BAAQMD) the authority to implement the federal PSD, nonattainment NSR, and Title V programs. BAAQMD adopted regulations, approved by USEPA, to implement these programs. Accordingly, the EAEC is subject to BAAQMD rules and regulations that define requirements for Best Available Control Technology (BACT), emission reduction credits (ERCs) offsets, and EAEC's PSD air quality impact modeling analysis. The requirements of the NSR and PSD programs apply to the EAEC facility as a whole. (Exs. 1, p. 5.1-2; 4 G, p. 2.1-6; 10/21 RT 354:10-355:15.)

---

[30] **AIR QUALITY Table 1** shows that the times over which the air quality standards are measured (averaging times), range from one-hour to an annual average. The standards are read as a concentration, in parts per million (ppm), or as a weighted mass of material per a volume of air, in milligrams or micrograms of pollutant in a cubic meter of air (mg/m^3 and $\mu g/m^3$). (Ex. 1, p. 5.1-5.)

AIR QUALITY Table 1
Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary	Secondary
Ozone(O_3)	1-hour	0.09 ppm (180 $\mu g/m^3$)	0.12 ppm (235 $\mu g/m^3$)	Same as primary
	8-hour		0.08 ppm (157 $\mu g/m^3$)	
Particulate Matter (PM_{10})	Annual Geometric Mean	30 $\mu g/m^3$	---	Same as primary
	24-hour	50 $\mu g/m^3$	150 $\mu g/m^3$	
	Annual Arithmetic Mean	---	50 $\mu g/m^3$	
Fine Particulate Matter ($PM_{2.5}$)	24-hour	No separate standard	65 $\mu g/m^3$	Same as primary
	Annual Arithmetic Mean		15 $\mu g/m^3$	Same as primary
Carbon Monoxide (CO)	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	None
	8-hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	
Nitrogen Dioxide (NO_2)	1-hour	0.25 ppm (470 $\mu g/m^3$)	---	Same as primary
	Annual Arithmetic Mean	---	0.053 ppm (100 $\mu g/m^3$)	
Lead(Pb)	30-day	1.5 $\mu g/m^3$	---	Same as primary
	Cal. Quarter	---	1.5 $\mu g/m^3$	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	---	0.03 ppm (80 $\mu g/m^3$)	---
	24-hour	0.04 ppm (105 $\mu g/m^3$)	0.147 ppm (365 $\mu g/m^3$)	---
	3-hour	---	---	0.5 ppm (1300 $\mu g/m^3$)
	1-hour	0.25 ppm (655 $\mu g/m^3$)	---	---
Sulfates	24-hour	25 $\mu g/m^3$	No federal standard	
H_2S	1-hour	0.03 ppm (42 $\mu g/m^3$)	No federal standard	

Source: (Ex. 1, p. 5.1-6.)

Summary and Discussion of the Evidence

EAEC is located in the northeastern corner of Alameda County, all of which is within BAAQMD's jurisdiction. In addition, EAEC's project site is located physically within the San Joaquin Valley Air Basin, which is primarily within the jurisdiction of the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) to the east of Alameda County.[31] (Ex. 1, p. 5.1-7.)

The SJVUAPCD collects meteorological data at the project site. The data collected include wind directions, wind speed, temperature, and atmospheric stability class. BAAQMD has determined that the collected meteorological data are representative of the area's meteorology, and that it is appropriate to use for air quality dispersion modeling analysis for the EAEC project. (Ex. 1, p. 5.1-5.)

In view of evidence that the brunt of EAEC's air quality impacts will occur in San Joaquin County, Applicant and the SJVUAPCD reached an Air Quality Mitigation Agreement (AQMA).[32] The AQMA provides that Applicant will provide an Air Quality Mitigation Fee of $1,002,480 (AQMF) to the SJVUAPCD "to ensure localized benefits in the Northern Region, particularly within or near the City of Tracy." (10/21 RT 142:22-143:22; Exs. 4 G 2, p. 1 & 4 G 3, p. 2.)

---

[31] SJVUAPCD's jurisdiction begins at the San Joaquin County line, a mile east of the project site. Applicant describes the project's geographical location within the San Joaquin Valley, but subject to the BAAQMD's jurisdiction as "unusual." (Ex. 1, p. 5.1-34; Applicant's Reply Brief, p. 35.)

[32] In performing a cumulative air quality impacts analysis (CAQA), Staff generally includes projects located within a six-mile radius of the proposed project. If significant projects lie just outside this radius, Staff generally includes those as well. Mountain House clearly lies well within this radius, at about a mile southeast of the EAEC. The Tesla Power Project (Tesla), currently in the CEC licensing process, lies approximately four miles south of the EAEC, also within the BAAQMD. The Tracy Peaker Project (TPP) lies just outside this radius, a little over six miles southeast of the EAEC, within the SJVUAPCD. As a CEC approved 169-MW facility with potential air quality implications, the TPP appropriately was included to afford a full disclosure of potential cumulative impacts.

In general, an area is designated as attainment for a specific pollutant if the concentrations of that air contaminant never exceed the AAQS. Likewise, an area is designated as non-attainment for an air contaminant if that standard is ever violated. An area can be classified attainment for one air contaminant and non-attainment for another, or attainment for the federal standard and non-attainment for the state standard for the same contaminant. The entire area within the boundaries of a district is usually evaluated to determine the district's attainment status. (Ex. 1, p. 5.1-7.)

Historical air quality data were measured either to the west in Livermore (in the BAAQMD) or to the east in Stockton and Fresno (in the SJVUAPCD) near the project location for the following criteria air pollutants:

- PM_{10},
- CO,
- SO_2,
- O_3, and
- NO_2. (Ex. 1, p. 5.1-7; *see* **AIR QUALITY Figure 1** below.)[33]

Based on the ambient concentration data collected, the area is consistently maintained below the most stringent ambient air quality standards for all criteria pollutants except for **ozone** and **PM_{10}**. (Ex. 1, p. 5.1-8/10-11.)

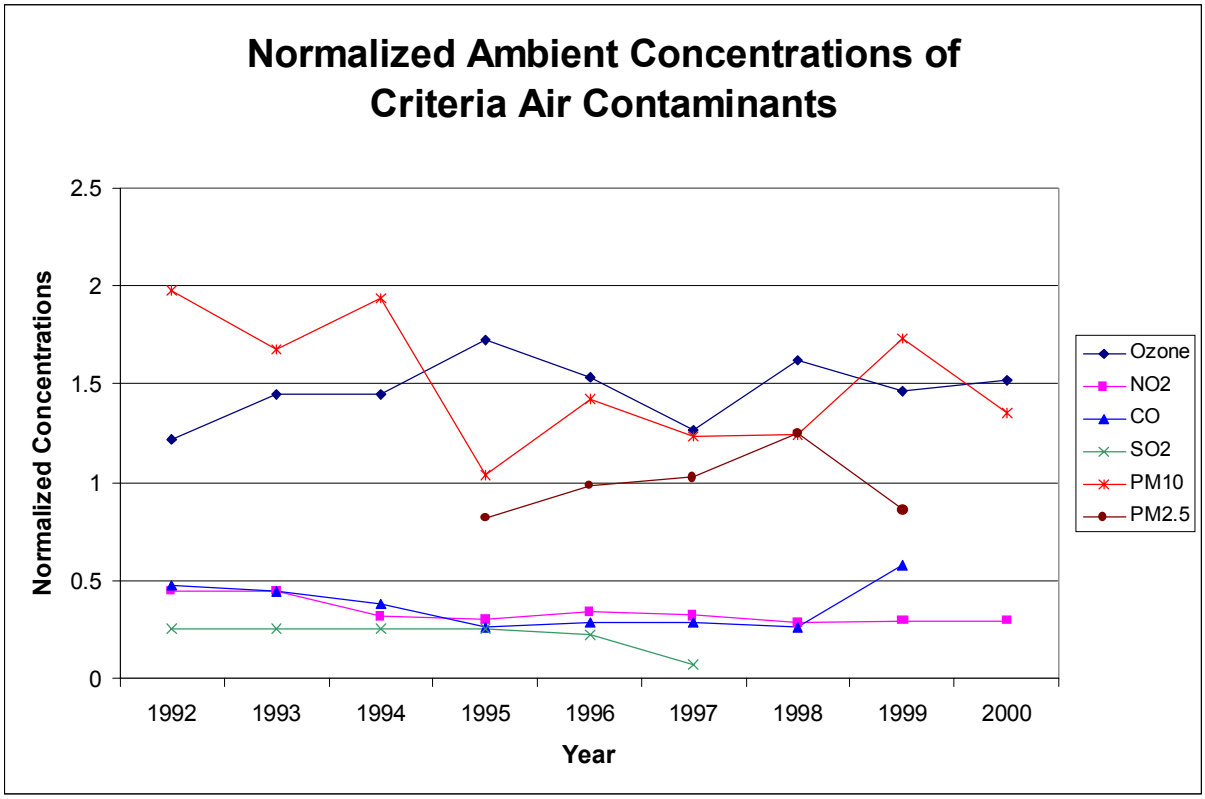
1. BAAQMD's Final Determination of Compliance

On July 24, 2002, BAAQMD issued its Final Determination of Compliance (FDOC). (Ex. 2Y.) The FDOC concludes that the EAEC will comply with all applicable air quality requirements and imposes certain conditions necessary to ensure compliance. Following Commission regulations, the conditions contained

[33] **Figure 1** summarizes normalized concentrations, which represent the ratio of the highest measured concentrations in a given year to the most stringent applicable national or state ambient air quality standard. Therefore, normalized concentrations lower than one indicates that

in the FDOC are incorporated into this Decision. BAAQMD's witness testified that the project would comply with BAAQMD's requirements and with state and federal regulations. (10/21 RT 354:10-356:12.)

AIR QUALITY Figure 1



Notes: CO, NO_2 and ozone data are from the Livermore monitoring station, $PM_{2.5}$ data are from Stockton, and SO_2 data are from the Fresno monitoring station.
Source: (Ex. 1, p. 5.1-7.)

BAAQMD will require the EAEC to provide offsets on an annual basis (tons per year (tpy)) for NO_x, VOC, and PM_{10}. Applicant has provided BAAQMD banked certificates: 305 tpy of NO_x, 87.5 tpy of VOC, and 2.2 tpy of PM_{10}. In addition, Applicant will provide 444 tons of SO_2 ERCs to mitigate the project's 148 tons per year of PM_{10} emissions. BAAQMD has not required Applicant to provide offsets

---

the measured concentrations were lower than the most stringent ambient air quality standard. (Ex. 1, p. 5.1-7/8.)

for the new SO_2 emission increases. (Ex. 1, p. 5.1-26; see below, **AIR QUALITY Table 2**.)

AIR QUALITY Table 2
Maximum Annual NO_2, VOC, and PM_{10} Emissions and District Offset requirements

Pollutant	New Emissions from EAEC (tpy)	Offset Ratio for BAAQMD[1]	Offsets Required by BAAQMD[1] (tpy)	Offsets proposed by Calpine (tpy)
NO_2	263	1.15:1	302	***305*** (Calpine)
VOC	74	1.15:1	85	***87.5*** (Calpine)
PM_{10}	148	3:1 SO_2:PM_{10}	444	***444*** (Calpine)
SO_2	24[2]	N/A	0	***0***

Notes: 1. Offset ratio as required by the BAAQMD. 2. Staff estimates project's SO_2 emissions using an annual average of 0.28 gr. of sulfur/100 scf natural gas.
Source: (Ex. 1, p. 5.1-26.)

2. CEQA Guidance

The Commission not only reviews compliance with BAAQMD rules, but also evaluates potential air quality impacts following CEQA Guidelines.[34] The Guidelines require analysis to determine whether a project will:

- conflict with or obstruct implementation of the applicable air quality plan;
- violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- result in a cumulatively considerable net increase of any criteria pollutant for which the region is nonattainment for state or federal standards;
- expose sensitive receptors to substantial pollutant concentrations; and
- create objectionable odors affecting a substantial number of people. (14 Cal. Code of Regs., § 15000 et seq., Appendix G.)

[34] 20 Cal. Code of Regs., §§ 1744.5, 1752.3.

3. Staff

Ambient Ozone

Ozone is not directly emitted from stationary or mobile sources, but is formed as the result of chemical reactions in the atmosphere between nitrogen oxides and VOC in the presence of sunlight. Ambient ozone concentrations recorded between 1992 and 2000 has ranged from 11 to 15 parts per hundred million (pphm). The area has experienced 5 to 22 days of violations of the state 1-hr ozone air quality standard every year since 1992. The available ambient ozone data show a slight increasing trend of ozone concentrations since 1992, so there is no clear indication that the ozone air quality is improving. (Ex. 1, p. 5.1-8; & Attachment A, pp. 5.7-11/15.)[35]

The 8-hour ambient ozone concentration recorded in the area was nine pphm in 1992 and increased steadily to 11 pphm in 2000. These data indicate that the area would have exceeded the new federal 8-hour ozone standard (8 pphm) every year since 1992. The EPA has established the 8-hour ozone standard, but it has not made a finding that the BAAQMD would be classified as non-attainment for such standard. (Ex. 1, p. 5.1-8.)

For the most recent (1999-2000) ozone ambient concentrations for consecutive ozone seasons (May-October), Staff plotted the ozone concentration data in graphical form for the communities of Pittsburg, Livermore, and Tracy. Staff observed that the recorded ozone concentrations in Pittsburg, Livermore, and Tracy behaved as if they are all located in the same air basin, i.e., the ozone concentrations peaked and ebbed in a highly correlated relationship almost 95%

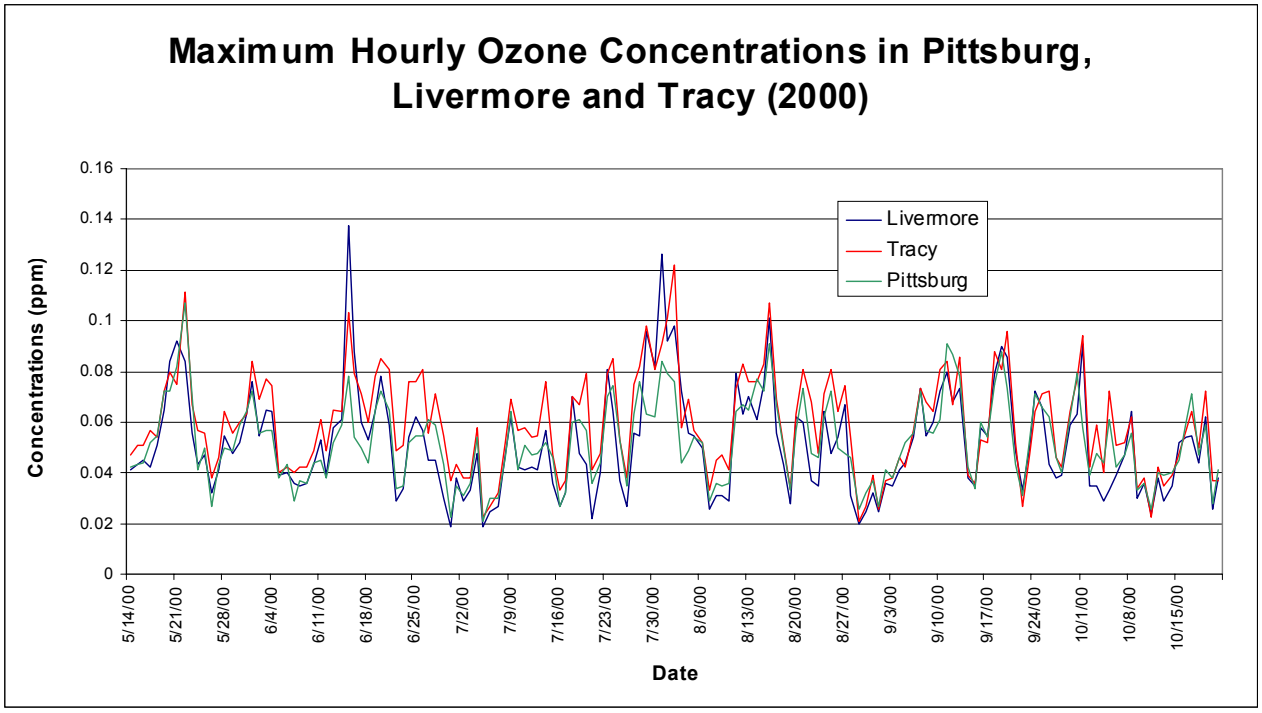
[35] Applicant suggests that Staff's ozone data is derived from the Livermore monitoring station within the BAAQMD; and suggests that data from Livermore and the Tracy monitoring station (in the SJVUAPC show that violations of the federal standard have decreased. Thus, Applicant would disagree with any characterization of the area as having a severe ozone problem. Figures 2-3 below, however, reveal to us a more extensive data collection set than what Applicant suggests. (Ex. 4 G, p. 2.1-11/12.)

of the time during the ozone season. (Ex. 1, p. 5.1-10; *see* below **AIR QUALITY Figures 2 and 3.)**

Staff also observed that the average ozone concentration in Tracy is 15 percent higher than that in Livermore, and is 30 percent higher than that in Pittsburg. Staff concluded that the air mass experiences a net increase in emissions as it moves from Pittsburg to Tracy. In other words, the emissions generated between Pittsburg and Tracy contributes approximately 30 percent to the area's ozone levels, and the emissions from the Pittsburg/Antioch area contribute approximately 70 percent of the area's ozone levels. (Ex. 1, p. 5.1-10.)

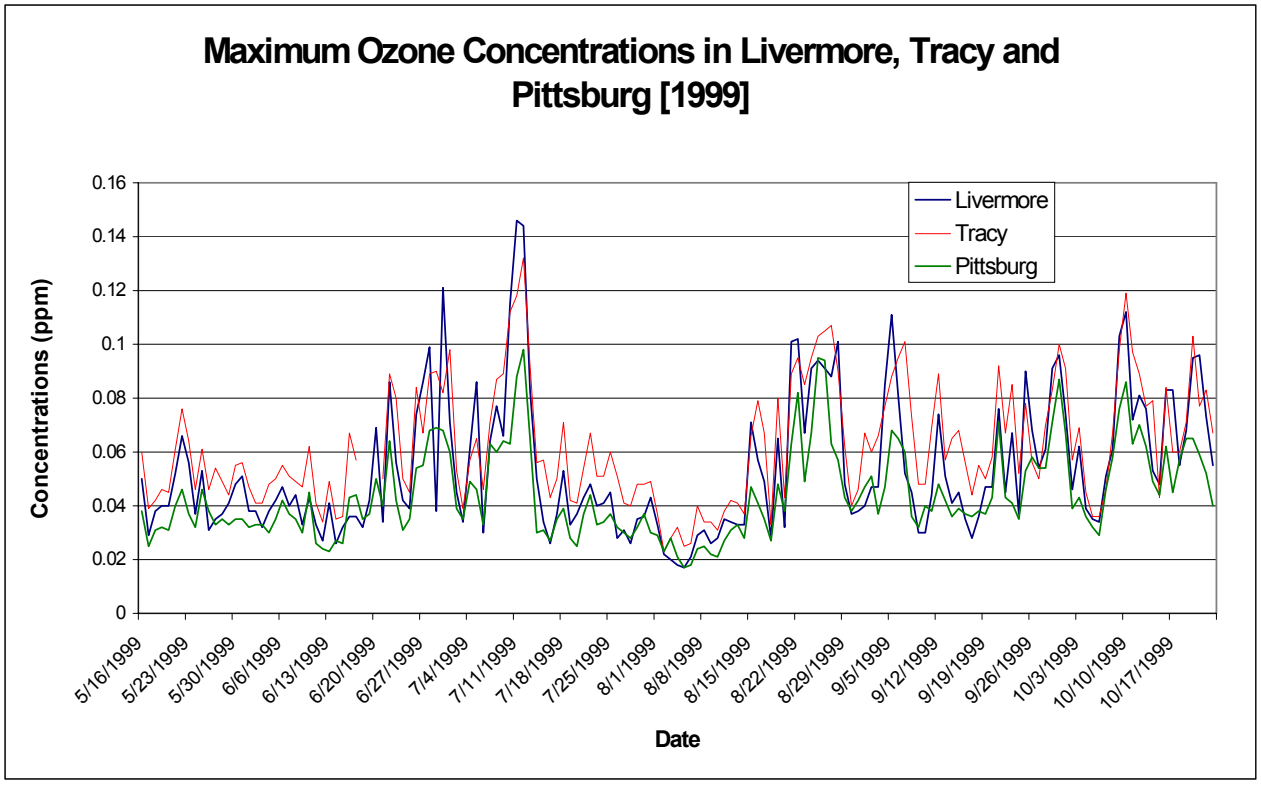
Therefore, Staff found that ERCs generated in the Pittsburg/Antioch area would be 70 percent effective in mitigating impacts in the San Joaquin Valley. The remaining 30 percent of the emission reduction credits would offer no appreciative value in mitigating the project's ozone impacts in the San Joaquin Valley. (Ex. 1, p. 5.1-10.)

AIR QUALITY Figure 2



Source for Figures 2 & 3: (Ex. 1, p. 5.1-9.)

AIR QUALITY Figure 3



Staff then analyzed the proposed ERCs located in the Oakland, Redwood City, San Leandro, and San Jose areas. Staff reviewed a CARB report that had studied and performed modeling exercises to establish the impacts of Bay Area and Sacramento Valley pollutants transported to the San Joaquin Valley. CARB's modeling exercises showed that the Bay Area emissions contributed approximately 27 percent to the peak ozone levels in the San Joaquin Valley. (Ex. 1, p. 5.1-10.)

Staff relied on CARB'S analysis to conclude that 27 percent of Applicant's proposed ozone precursor ERCs from the Oakland area would mitigate EAEC Northern San Joaquin Valley Air Basin impacts during the ozone season (between June to September).[36] The remaining 73 percent of BAAQMD's ERCs offered no appreciable value as a mitigation measure for the proposed project's ozone impacts in the San Joaquin Valley. (Ex. 1, p. 5.1-10.)

Ambient PM_{10}

Primary contributors of PM_{10} are from wood smoke, combustion of fossil fuels, and entrained dust particles during wintertime high PM_{10} episodes. PM_{10} concentrations measured near the project site show that the area has experienced violations of the state 24-hour PM_{10} standard every year between 1992 and 2000. During this period, the North Joaquin Air Basin experienced between 6 and 30 calculated violation days a year of the state 24-hour PM_{10} air quality standard. The highest PM_{10} concentrations are normally measured between the months of October through February, especially during evening and night hours. (Ex. 1, p. 5.1-11; *see* & **AIR QUALITY Figure 1**, *supra*.)

Similar to the reasons discussed in the ozone air quality setting, Staff does not believe that Applicant's proposed PM_{10} ERCs fully mitigate EAEC's PM_{10} impact

---

[36] SJVUAPCD, in the Tesla Air Quality Mitigation Agreement, also estimates the benefit of BAAQMD ERCs west of Altamont Pass on San Joaquin Valley to be 27 percent value. (10/21 RT 228:21-232:4; 294:4-11.)

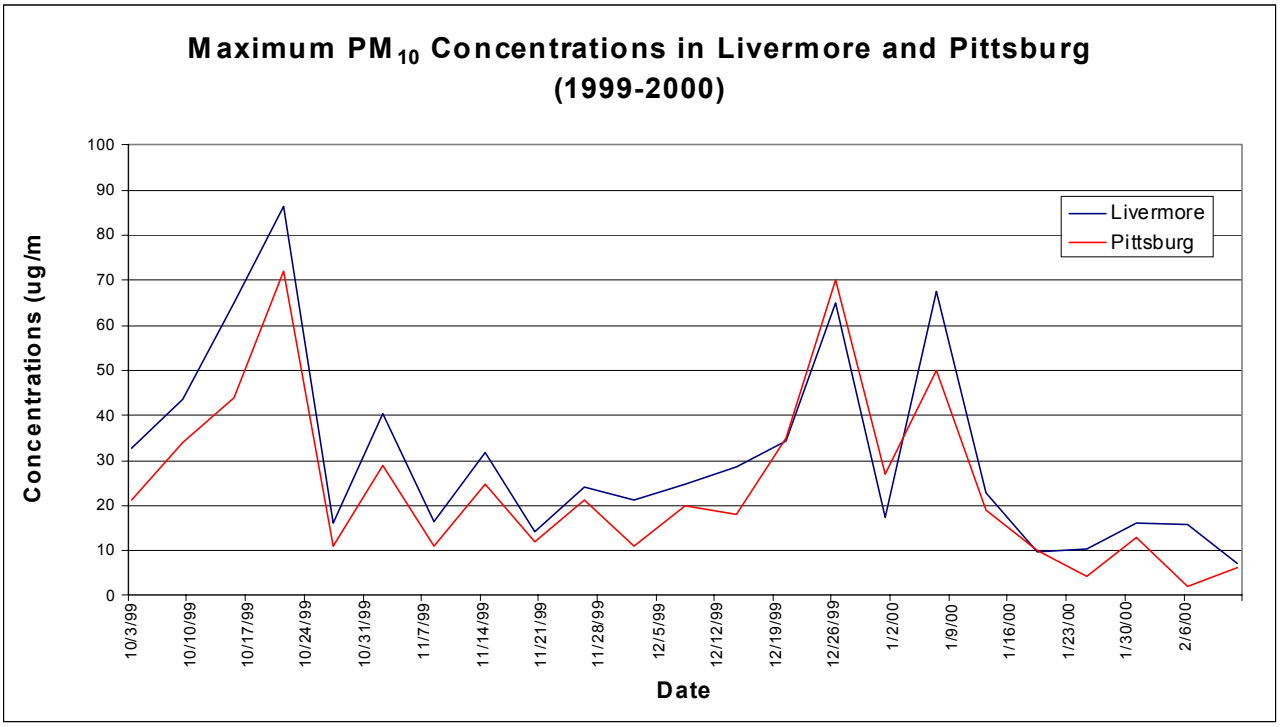
to the Northern San Joaquin Air Basin. To investigate the effectiveness of the proposed PM_{10} mitigation, Staff analyzed the PM_{10} ambient air quality between Pittsburg and Tracy.

Staff found that unfortunately, ambient PM_{10} concentration data for Tracy is not available. Therefore, Staff used the PM_{10} data for Pittsburg and Livermore, and the previously discussed ozone concentration data to assess the local PM_{10} contribution for the two PM_{10} seasons in 1999 and 2000. Staff extrapolated from the data that the emissions generated in the area between Pittsburg and Livermore contributes approximately 18.4 percent of the PM_{10} problem. (Ex. 1, p. 5.1-12; *see* below, **AIR QUALITY Figures 4 and 5**.)

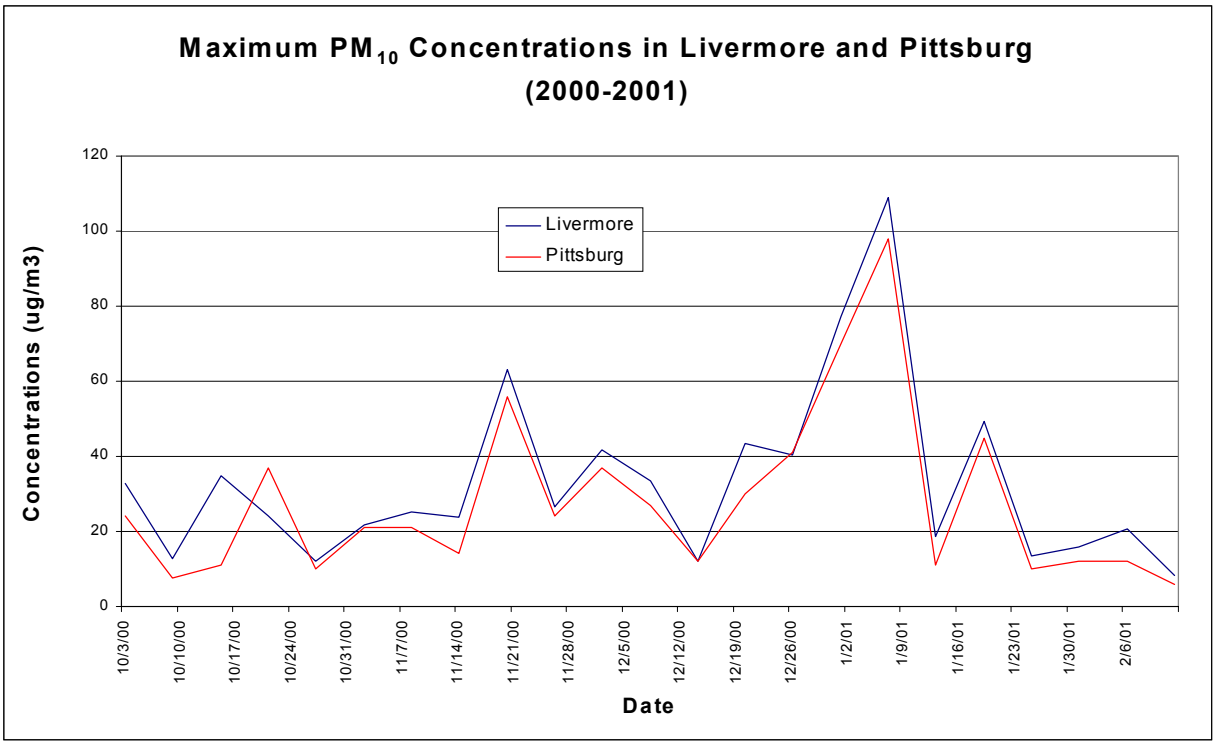
Unlike with ozone, due to the lack of PM_{10} concentration data in Tracy, Staff could not assess the percentage contribution of PM_{10} emissions in the area between Livermore and Tracy. Because of the similarity between the recorded PM_{10} concentration data and the ozone concentration data, Staff assumed that the PM_{10} emissions generated in the area between Livermore and Tracy would contribute the same percentage, as does the ozone contribution. Using this assumption, Staff concluded that the ERCs from the Pittsburg/Antioch area would be 70 percent effective in mitigating the PM_{10} problem downwind. According to Staff, the remaining 30 percent of the ERCs offer no appreciate appreciable value in mitigating the project's contribution to the area PM_{10} problem. (Ex. 1, p. 5.1-11.)

Similar to the ozone air quality setting, Staff found that 27 percent of the PM_{10} ERCs from the Oakland, San Leandro, San Jose, and Redwood City areas would mitigate project PM_{10} emission impacts to Northern San Joaquin Valley Air Basin. According to Staff, the remaining 73 percent of the ERCs offer no appreciable value as a mitigation measure for the proposed project's PM_{10} impacts in the Northern San Joaquin Valley Air Basin. (Ex. 1, p. 5.1-11.)

AIR QUALITY Figure 4



AIR QUALITY Figure 5

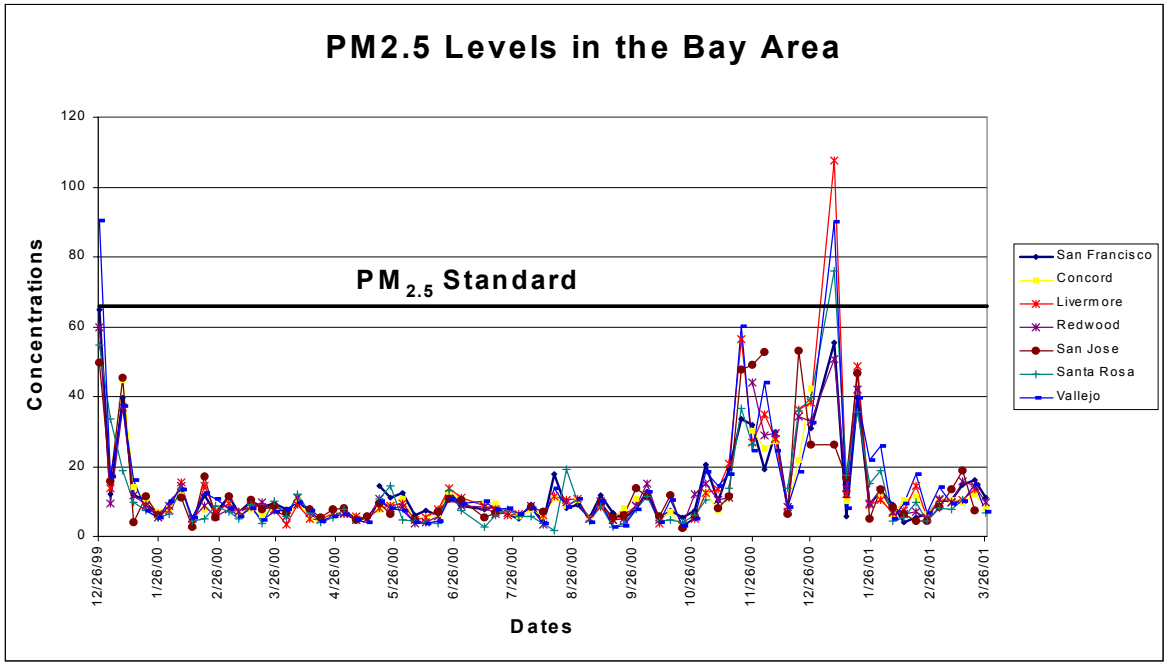


Source for Figures 4 & 5: (Ex. 1, p. 5.1-12.)

Fine Particulate Matter ($PM_{2.5}$)

Staff has charted the available $PM_{2.5}$ concentrations measured at various air quality monitoring stations in the Bay area during the period from December 1999 to March 2001. Because $PM_{2.5}$ ambient concentrations data are not available in the Tracy area, Applicant provided an analysis and used ambient air quality data recorded in the Livermore area as representative of the local area. (Ex. 1, p. 5.1-13; see below, **Air Quality Figure 6**.)

AIR QUALITY Figure 6



Source: (Ex. 1, p. 5.1-13.)

In 2001, according to Staff, **Figure 5** above shows that $PM_{2.5}$ concentrations measured in Livermore were among the highest in all the counties of the Bay Area District Air Basin.[37] (Ex. 1, p. 5.1-13.)

---

[37] Applicant points out that this single high level is the lone recorded exceedence of the federal 24-hour standard; is not a violation of the standard because of necessary 3-year averaging; during 1999 and 2000, the inception years for $PM_{2.5}$ measurements at Livermore (BAAQMD), that station did not experience the highest $PM_{2.5}$ concentrations in the Bay Area; no violations of the federal 24-hour or annual standard has occurred over the past three years, and no violation of the recently adopted state annual average has occurred. (Ex. 4 G, p. 2.1-12.)

Staff drew the following conclusions drawn from ambient concentration data between 1999 and 2001 based upon scientific study by the Desert Research Institute for the California Regional $PM_{10}/PM_{2.5}$ Air Quality Study Technical Committee:

- the highest PM_{10} and $PM_{2.5}$ concentrations occur in wintertime (between mid-November to mid-February);
- secondary $PM_{2.5}$ derived from NO_x (ammonium nitrate) is the largest component, often constituting more than 50 percent of $PM_{2.5}$ in urban areas, and higher in non-urban areas;
- organic and elemental carbons are the next largest component, constituting between 25 to 50 percent of $PM_{2.5}$;
- secondary $PM_{2.5}$ derived from SO_x (ammonium sulfate) and fugitive dusts constitute the rest of the $PM_{2.5}$.[38] (Ex. 1, p. 5.1-13.)

Secondary Pollutant Impacts

Secondary air contaminants are those that are not directly formed in, or emitted from, the stacks of the EAEC's equipment such as the project's turbines, boiler or emergency engine. These air contaminants are formed outside of the stacks because of chemical reactions involving the directly emitted pollutants. For example, ozone can be formed by photochemical reactions between NO_x and VOCs in the presence of sunlight in the atmosphere. (Ex. 1, p. 5.1-21.)

Secondary Ozone Impacts

The proposed project's NO_x and VOC emissions can contribute to the formation of ozone. There are air models that can be used to quantify ozone impacts, but they are only appropriate for use in regional air quality planning efforts where numerous sources are input into the model to determine the regional ozone impacts. There are no

[38] Applicant's data demonstrates that at the Stockton monitoring station in the San Joaquin Valley where $PM_{2.5}$ is measured nearest to the EAEC site, there have been up to five days per year in which $PM_{2.5}$ has been measured at levels in excess of the federal 24-hour average standard; however, there has not been a recorded violation of that standard, which, is based on a 3-year average of the 98th percentile value measured. The Stockton three-year annual average $PM_{2.5}$ level has recently been recorded at slightly above the federal standard, 16.4 µg/m3/15 µg/m3. Applicant contends that, as with ozone, it is inappropriate to characterize the project area as having severe air quality problems related to $PM_{2.5}$. (Ex. 4 G, p. 2.1-12.)

regulatory agency models approved for assessing single source ozone impacts. However, because of the known relationship of NO_x and VOC emissions to ozone formation, Staff believes that the emissions of NO_x and VOC from the EAEC have the potential to contribute to higher ozone levels if not mitigated. (Ex. 1, p. 5.1-21.)

Secondary PM_{10} impacts

The project's NO_x, VOC, NH_3 and SO_x emissions can contribute to the formation of secondary PM_{10}, namely organics, nitrates, and sulfates. Not all hydrocarbons can form secondary PM_{10}. Hydrocarbons with six or less carbon atoms in the chain will not participate in the formation of the carbon based PM_{10}. The EAEC's VOC emissions will be in the form of unburned natural gas, which contains only one to two carbon atoms in the chain. Thus, the turbine exhaust is not expected to emit any significant amount of VOC that can participate in the formation of secondary PM_{10}. (Ex. 1, p. 5.1-21.)

Staff believes that the project's ammonia emissions could contribute to the formation of ammonium nitrate in the area, potentially worsening violations of the state 24-hour PM_{10} standard. Available research indicates that the conversion of NO_x to nitrate is approximately between 10 and 30 percent per hour in a polluted urban area where ozone and ammonia are present in sufficient amounts to participate in the reaction. Staff assumed a 30 percent NO_x to nitrate conversion rate (the upper end of the conversion rate based on the area's continuing ozone violations and worsening trend) as well as a linear extrapolation of the project's PM_{10} modeling results. Staff estimates the maximum NO_x to nitrate impact from the project to be 4 $\mu g/m^3$. Because the area is non-attainment for the state 24-hr PM_{10} and possibly the federal 24-hour $PM_{2.5}$ standards, the ammonium nitrate contribution, although small, would be significant. Staff believes that the ammonia slip from the turbine/HRSG exhausts should be reduced to 5 ppm (from the proposed 10 ppm) to lessen the contribution of ammonium nitrate to the local area. (Ex. 1, p. 5.1-22/23.)

Concerning sulfates as PM_{10}, Staff believes that the project's SO_2 emissions will contribute to sulfate levels in the area, although in a very small amount. Currently, there

are no agency (EPA or CARB) recommended models or procedures for estimating sulfate formation. Applicant has conducted an analysis to quantify the potential for SO_2 to convert to particulate matter. This analysis is based on the ambient air quality conditions and the emissions in the San Joaquin Valley, which Applicant believes represent the conditions at the project site. The results of this analysis indicate that up to 50 percent of the project's SO_2 emissions can potentially be converted to particulate matter [in the form of sulfates]. Similar analyses were performed in other siting cases in the Bay Area (Los Medanos, Delta Energy Centers) indicating that the potential conversion of SO_2 to particulate matter could be as high as 35 percent.

Using a conservative 35 percent conversion of SO_2 to particulate matter, the project's SO_2 emissions are expected to add an impact equivalent to as much as 30 tons of particulate matter per year. Because the area is non-attainment for the state 24-hour PM_{10}, and possible non-attainment for the federal 24-hr $PM_{2.5}$ AAQS, the EAEC's SO_2 emissions can potentially contribute to the existing violations of the standards. Therefore, its SO_2 emissions contribution is significant. Staff believes that local offsets, in the form of emission reductions, should be provided to lessen the project's particulate matter contribution to the ambient air to a level of insignificance. (Ex. 1, p. 5.1-22.)

Construction

EAEC's construction is expected to last approximately 24 months. Construction generally consists of two major activities: site preparation and installation of major equipment and structures. Staff reviewed and accepted as accurate estimated peak daily and annual construction equipment exhaust emissions that Applicant provided. In addition to emissions from construction equipment exhaust, such as vehicles and internal combustion engines, a small amount of hydrocarbon emissions may also occur because of the temporary storage of petroleum fuel at the site. (Ex. 1, p. 5.1-14; see below, **AIR QUALITY Table 3**.)

AIR QUALITY Table 3
Construction Emissions

Construction Emission Sources	NO_x	SO_2	VOC	CO	PM_{10}
Daily (lbs/day)	380	10	100	1100	70
Annual (tons/yr)	25	1	6	58	2
Fugitive Dust (tons/yr)					5

Source: (Ex. 1, p. 5.1-14.)

Construction impacts modeling analyses included both the fugitive dust and vehicle exhaust emissions, which include PM_{10}, NO_x and CO. (Ex. 1, p. 5.1-19; see below, **AIR QUALITY Table 3**.)[39]

AIR QUALITY Table 4
Facility Maximum Construction Impacts

Pollutant	Avg. Period	Project Impact ($\mu g/m^3$)	SECTION 1 BACKGROUND ($\mu g/m^3$)	Total Impact ($\mu g/m^3$)	State Standard ($\mu g/m^3$)	Percent of Standard
NO_2	1-hr.	285	149	434	470	90
CO	8-hr.	152	3236	3386	10,000	35
PM_{10}	24-hr.	30[1]	87	117	50	230

1. Staff estimated.
Source: (Ex. 1, p. 5.1-19.)

According to Staff, **Air Quality Table 3** demonstrates that EAEC's construction activities would further exacerbate existing violations of the state 24-hour PM_{10} standard, and thus constitute a significant air quality impact for PM_{10}.[40] EAEC's construction would result in unavoidable short-term PM_{10} impacts. Because the area is non-attainment for PM_{10}, additional impacts during construction of the project are viewed as significant. However, it is doubtful that the general public would be exposed to the construction impacts associated with the project. Staff's review of the modeling suggests that the likely PM_{10} construction impacts during the day would be in the range

[39] In **Table 3**, the first and second columns list the air contaminant, i.e., NO_2, PM_{10}, and CO, and the averaging time for each air contaminant analyzed. The third and fourth columns present the project emission impacts and the highest measured concentration of the criteria air contaminants in the ambient air (background), respectively. The fifth column presents the total impact, i.e., the sum of project emission impact and background measured concentration. The sixth column presents the most restrictive ambient air quality standard for such air contaminant. The seventh column presents the percentage of the total impacts in relation to the most restrictive ambient air quality standards.

[40] The project's construction activities would not create a new violation of either NO_2 or CO air quality standards, thus Staff does not consider that those impacts are significant. (Ex. 1, p. 5.1-18.)

of 20 to 30 $\mu g/m^3$. Nevertheless, because the area PM_{10} standard is already violated, the construction of the project would exacerbate the existing violation. Thus the conclusion that the project's construction PM_{10} emission impact is significant.

Staff considered:

- Applicant's best available control measures (BACM) mitigation measures;
- BAAQMD rules, which will limit fugitive dust emissions to a maximum 20 percent opacity during any three-minute plan;
- construction emissions are short term therefore Applicant proposed no ERCs to offset new emissions. (Ex. 1, p. 5.1-22/23.)

Staff proposes Conditions of Certification **AQ-SC1-AQ-SC4** to mitigate the remaining significant impacts associated with project and linear construction that would reduce EAEC's impacts to a level of insignificance. These conditions would require Applicant to:

- identify a Compliance Mitigation Manager who will be responsible for enforcement of construction mitigation measures;
- submit a comprehensive Fugitive Dust Mitigation plan and monthly compliance reports;
- use of catalyzed diesel particulate filters on construction equipment;
- use ultra low sulfur diesel fuel for that equipment;
- use newer equipment that meets the EPA and/or CARB 1996 or better off-road equipment emission standards; and
- limit diesel engine idle time to no more that 10 minutes.

Operation

EAEC is designed for the following major components:

- three natural gas fired, General Electric (GE) Frame 7FB combustion turbines,[41]

[41] Because the start-up emissions data for the FB turbine are not available, Staff has used the start-up emissions data provided by GE, for another facility with a similar configuration [three gas turbines, combined cycle with auxiliary boiler]. This similar facility uses three GE frame 7FA turbines and has guaranteed NO_x emissions of 9 ppm without the use of SCR. Because the EAEC proposed turbines (7FB model) are larger, staff has linearly adjusted the start-up NO_x and VOC emissions upward to reflect the higher uncontrolled emissions of the FB model turbine. (Ex. 1, p. 5.1-16.)

- three heat recovery steam generators (HRSG), each equipped with a 732 MMBTU duct burner,
- one steam turbine,
- one natural gas-fired 100,000 lbs/hr auxiliary boiler,
- one 19-cell cooling tower,
- one diesel fueled fire pump, and
- one natural gas-fired emergency generator. (Ex. 1, p. 5.1-14.)

Once built, the turbines would be operating in combined cycle mode to produce approximately 1,100 MW of electricity. Each combustion turbine will be equipped with dry low NO_x combustion technology, and a SCR system in the HSRG, which together limit NO_x emissions to 2.5 ppm.[42] (sic) @ 15% O_2 (Ex. 1, p. 5.1-14.)

To control CO and VOC emissions, each combustion turbine/HRSG will be equipped with a high-temperature oxidation catalyst system, which limits the CO emissions to 6 ppm and the VOC emissions to 2 ppm. Staff accepted Applicant's request that the project be analyzed with the following assumptions:

- each turbine/HRSG operates at 8 hours a day without the operation of the duct burner, then
- each turbine/HRSG operates at 16 hours a day with the duct burner in operation,
- project emissions include the emissions from the natural gas-fired auxiliary boiler,
- the emergency generator and the diesel fire pump are expected to operate only when the turbines are not in operation; therefore, their normal operation emissions are not to be included in the total emissions of the facility. However, either piece of equipment can be tested on any one day for a period no longer than 1 hour so the emissions from testing of these two pieces of equipment will be included in the EAEC's totals emissions.

---

[42] 2.5-ppm appears to be a typographical error. The FDOC and Applicant's testimony reflect the correct limit as 2.0-ppm. (Ex. 2Y, pp.4 & 7; 10/21 RT 156:19-20.)

- 50 cold-starts, 250 hot-starts and 300 shutdowns for both turbines each year.[43] (Ex. 1, p. 5.1-15.)
-

Staff concluded that Applicant proposes to mitigate EAEC's emission increases using a combination of clean fuel, emission control devices and emission reduction credits. Control device technology for each of the combined cycle turbine trains to minimize NO_x, VOC and CO emissions include:

- clean burning low sulfur natural gas;
- dry low-NO_x combustion design;
- flue gas controls;
- Selective Catalytic Reduction (SCR); and
- oxidation catalyst. (Ex. 1, p. 5.1-23/24/25.)
-

Staff found that Applicant's control devices are designed to maintain the turbine/duct burner emissions levels to BACT (as determined by the BAAQMD in the FDOC), which is:

- 2.5 ppm (sic) NO_x @ 15% O_2 over a 1-hour period;
- 6 ppm CO @ 15% O_2, over a 1-hour period;
- 2 ppm VOC @ 15% O_2, over a 1-hour period; and,
- ammonia slip emissions (from unreacted ammonia in the SCR) are to be maintained at10 ppm or less, at 15 % O_2 over a 1-hour period. (Exs. 1, p. 5.1-23/24/25; 2Y1.)

During operation, the EAEC will add to the San Joaquin Valley Air Shed:

- 263 tpy of NO_x,
- 74 tpy of VOC,
- 148 tpy of PM_{10}, and
    - 24 tpy of SO_2. (Ex. 1, p. 5.1-26.)

---

[43] A hot start would occur after an overnight turbine shutdown. Applicant stated that the duration of a hot start is approximately one hour, and as much as three hours for a cold start. Staff found that Applicant underestimated the times for cold start and hot starts because according to GE, a start-up for a similar configuration facility (also equipped with auxiliary boiler) could last 4 hours for cold start, and 1.5 hours for hot start. The auxiliary boiler is expected to operate about 8 hours a day and no more than 3,000 hours annually. (Ex. 1, p. 5.1-15/16.)

Applicant has proposed to provide BAAQMD banked ERCs as offsets in the amounts that follow:

- 305 tpy of NO_x,
- 87.4 tpy of VOC, and
- 444 tpy of SO_2. (Ex. 1, p. 5.1-26.)

However, because of the distance between the EAEC and the source of offsets Staff concluded that the proposed offsets:

- do not fully mitigate the project impacts on the local ambient ozone and PM_{10} air quality; and
- additional local ozone precursors (NO_x and VOC) and PM_{10} emission reduction credits need to be provided to lessen the facility local impact to a level of less than significant. (Ex. 1, p. 5.1-26.)
-

According to Staff's assessment, to mitigate local area air impacts to a level of less than significant, Applicant is required to secure additional ERCs as follows:

- 133 tpy of NO_x,
- 42 tpy of VOC, and
- 50 tpy of PM_{10}.[44] (Ex. 1, p. 5.1-26; *see* below **AIR QUALITY Table 5**.)

Staff evaluated Applicant's and SJVUAPCD's emissions estimates and believes that they have been underestimated,

- especially for the turbine start-up and shut down emissions; and
- the times for cold start and hot start. (Ex. 1, p. 5.1-16.)

According to GE, a start-up for a similar configuration facility (also equipped with auxiliary boiler) could last 4 hours for cold start, and 1.5 hours for hot start.[45] Once it

---

[44] Applicant's testimony disputes that the location of ERCs has any relation to the mitigation of local area air impacts, but rather are related to the proposed project's regional or cumulative air impacts. In Applicant's view, the AQMA with the SJVUAPCD provides mitigation that reduces EAEC's regional or cumulative impacts to a level of less than significant without the need for any further measures. (Ex. 4 G, p. 2.1-11.)

[45] During discovery, Applicant provided Staff with estimates of the EAEC's hourly, daily, and annual emissions. Staff requested manufacturer's information to substantiate Applicant's estimated emissions;

received corrected information, Staff re-evaluated total EAEC emissions to determine the project's emission impacts and possible mitigation. Staff has estimated an EAEC emission profile during periods of cold start, hot start and steady state operation. (Ex. 1, p. 5.1-15/16; *see* below, **AIR QUALITY Table 6**.)

AIR QUALITY Table 5
Staff Estimated Additional Local Emission Reductions

	Face Values of Credits from the Bay Area (tpy)				Equivalent Effectiveness[1] (tpy)			
Certificate Number, Location	NO_2	VOC	PM_{10}	SO_2	NO_2	VOC	PM_{10}	SO_2
645, 687 San Leandro	108	44	0	0	29	12	0	0
716 Redwood City	12	0	1	0	3	0	0	0
602, 662 Oakland	76	41	0	46	21	11	0	12
741, 749 Antioch	110	0	0	437	77	0	0	306
661 San Jose	0	32	0	0	0	9	0	0
Total	305	117	1	483	130	32	0	318
Project Emissions					263	74	148	24
Excess or <Shortfall>					<133>	<42>	<148>	294[2]
Additional emission reductions needed (tons)					**133**	**42**	**50[3]**	**0**

Notes: (1) Equivalent effectiveness means the ERCs that can effectively mitigate EAEC's impacts. For credits in Antioch, Staff has assigned 70% effectiveness, while those credits in Oakland, San Leandro, Redwood City and San Jose were assigned a 27% effectiveness. (2) There are 294 tons per year of excess SO_2 that can be used for inter-pollutant trading for PM_{10} at a ratio of 3 to 1. There are 50 tons per year of PM_{10} that need to be secured after the use of excess SO_2 as inter-pollutant trading for PM_{10} , i.e., using an inter-pollutant trading ratio of 3:1, 294 tpy of SO_2 is equivalent to 98 tpy of PM_{10}.
Source: (Ex. 1, p. 5.1-27.)

---

however, because the project is still in the conceptual phase, much of the requested information is preliminary or not available. These include the specifications and emissions guarantee for the turbine, the duct burner, the auxiliary boiler and their control systems. Applicant eventually provided some preliminary emissions data for the turbines, and the SCR system emissions guarantee for the turbine/HRSG power train. (Ex. 1, p. 5.1-15.)

AIR QUALITY Table 6
Power Train Emissions Estimates

	NO_x	SO_2	PM_{10}	VOC	CO
Start-up emissions (Staff estimates)					
Cold (total emissions for 4 hours, lbs)	2,640	N/A	N/A	2,160	3,350
Hot (total emissions for 90 minutes, lbs)	900	N/A	N/A	810	1,350
Start-up emissions (Applicant estimates)					
Cold (total emissions for 3 hours, lbs)	720	N/A	N/A	48	2,514
Hot (total emissions for one hour, lbs)	240	N/A	N/A	16	902
Steady state @ 100% load (Applicant estimates) (lbs/hr)	71	22	55	20	104

Source: (Ex. 1, p. 5.1-16.)

GE-provided NO_x and VOC emissions for cold start-up for the three-frame 7FA, combined cycle facility (at 9 ppm) are 80 lbs and 67 lbs per hour, per turbine, respectively. Because the proposed FB model gas turbines have higher NO_x emissions (25 ppm), Staff adjusted the EAEC start-up NO_x and VOC emissions by a factor of 25 divided by 9, or 2.78. Thus, the EAEC start up NO_x and VOC emissions would be 220 lbs and 180 lbs per hour per turbine, respectively, during the period of cold start. Using the same approach, staff estimated that EAEC NO_x and VOC emissions during the period of hot start would be 200 lbs and 180 lbs per hour, respectively. (Ex. 1, p. 5.1-16.)

Staff and Applicant's have estimated daily and annual emissions from the EEAC in a table, which shows different operating scenarios and the resultant emissions, including CTG startup (cold and hot), shutdown, and steady state operation. Staff assumed 4-hours duration for each cold start, and 1.5-hours duration for each hot start. Staff also estimated the expected emissions using Applicant's request of 50 cold starts and 250 hot starts, 5,100 hours steady state operation with duct burners, and the rest (3,085 hours) steady state operation without the use of duct burners. Applicant has requested and agreed to conditions that would restrict the facility's annual emissions to the levels presented in the last row of **AIR QUALITY Table 7**, below. (Ex. 1, p. 5.1-16/17.)

AIR QUALITY Table 7
Project Daily and Annual Emissions

Operational Profile	NO_x	SO_2	PM_{10}	VOC	CO
3 turbine cold-start, hot start and steady state operation (maximum daily) (lbs/day)[1]	4,830	450	1,220	3,320	16,020
Maximum steady state daily operation (lbs/day)[2]	1,730	450	1,220	480	2,550
Maximum annual emissions including start ups and shutdown[1,3] (tons/year)	443	86	216	219	1,150
Maximum permitted annual emissions including start ups and shutdown[4] (tons/year)	263	24	148	74	794

Notes:
[1] Staff estimated.
[2] EAEC, 2001a. AFC Table 8.1A-8.
[3] Assume 4 hr for each cold start, 1.5 hr for each hot start, 5100 hrs. steady state with duct burner and 3085 hrs. at steady state without duct burner.
[4] These are the permitted annual emissions limits, including all start up and shut down events that the facility shall not exceed.
Source: (Ex. 1, p. 5.1-17)

Staff reviewed and found adequate Applicant's modeling analysis of EAEC's operating emissions impacts from directly emitted pollutants that demonstrates that no violations of ambient air quality standards will be caused by its operation.

Modeling analysis results, using worst-case hourly emissions, which include turbine start-up emissions shows that, with the exception of PM_{10}, the project does not cause any new violations of any applicable air quality standard listed in the table, and thus those impacts are not significant. (Ex. 1, p. 5.1-17/19-20; *cf.,* **AIR QUALITY Tables 7; 8** (below).)

For PM_{10}, Staff concluded that the EAEC would contribute to existing violations of the state 24-hour PM_{10} air quality standard thereby creating a significant impact to the Northern San Joaquin Valley. Staff found that this standard is based on the protection of public health and includes a margin of safety to protect sensitive members of the population. Thus, project emissions that contribute to existing violations of this standard have the potential to exacerbate public health problems associated with existing ambient PM concentrations. (Ex. 1, p. 5.1-20.)

AIR QUALITY Table 8
Facility Operation Emission Impacts on Ambient Air Quality

Pollutant	Avg. Period	Project Impact ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total Impact ($\mu g/m^3$)	Most Restrictive Standard ($\mu g/m^3$)	Percent of Standard
NO_2	1-hour (start up)	236	149	385	470[1]	80
	1-hour (steady-state)	20	149	169	470[1]	36
	Annual	0.6	28	28.6	100[2]	30
SO_2	1-hour	20	40	60	650[1]	10
	24-hour	2	27	29	105[1]	10
CO	1-hour	690	5,940	6,630	23,000[1]	30
	8-hour	180	3,230	3,410	10,000[1]	35
PM_{10}	24-hour	7	87	93	50[1]	190
	Annual	0.6	23	23	30[1]	80

Notes: All short-term (1-hour) ambient air quality impacts have been modeled as the impacts dominated by the emergency generator or diesel fired pump emissions during periods of testing. All long-term (8-hour, 24 hour and annual) impacts are the impacts from the project caused by normal operations.
[1] State standard [2] Federal standard
Source: (Ex. 1, p. 5.1-20.)

Additional Mitigation

In discussing the AQMA between Applicant and the SJVUAPCD, Staff questions the value of the AQMA to create air quality benefits in the San Joaquin Air Basin, while acknowledging its express objective to that end.[46] Staff expresses serious concerns about the terms of the AQMA, as follows: (Exs. 1, p. 5.1-28; 4 G 3.)

> Mitigation measures (such as providing fees for unspecified air quality mitigation purposes) that are not tied to specific action plans may not be adequate or effective in reducing project related impacts. In general, an agency cannot rely on a mitigation measure of unknown efficacy in concluding that a significant impact will be mitigated to a less than significant level. In order for staff to reasonably conclude that impacts will be mitigated to less than significant, any mitigation measure must include realistic performance standards or criteria that will ensure the mitigation of the significant effects. In order to rely on a mitigation plan, staff needs to possess meaningful information reasonably justifying an expectation of compliance. Staff regards meaningful information to include:

[46] Staff notes that the AQMA agreement contains a "no more favorable terms" clause that allows Applicant to reduce the AQMF if the SJVUAPCD makes a better offer to any another energy facility. No time constraints are put in this clause. Staff contends that this clause calls into question the finality and the integrity of the AQMA. (Ex. 4 G 3, p.3; Staff Opening Brief on Phase 2 Topics, pp. 12.)

- a clear explanation of the measure's objectives (an accounting of the emissions reductions to be provided by the implementation),
- a description of specific measures designed to provide the necessary reductions, how the implementation will occur, who is responsible for the implementation, where the implementation will occur, the timetable for implementation, and measures to verify performance. (Ex. 1, p. 5.1-28/29.)

Staff contends that because of its CEQA responsibilities, the CEC must independently determine whether the AQMA adequately mitigates the project's identified impacts. Staff contends that the evidence in the record shows that the AQMA does not constitute adequate mitigation for two reasons:

- it underestimates the amount of offsets required to mitigate the project's impact; (Reliability) and
- it inappropriately leaves mitigation to be determined after certification (CEQA Compliance).

<u>Reliability</u>

According to Staff, SJVUAPCD has presented varying estimates of ERC shortfalls that Applicant needs to acquire. In the AQMA, SJVUAPCD analysis showed extra-mitigation needed in the amount of 66.8 tpy NO_x. Conversely, SJVUAPCD's later submitted calculations purport to show that the EAEC has ERC shortfalls in the amount of 52.6 tpy of NO_x, 6.6 tpy of VOCs and 5.5 tpy of PM_{10}. (*Cf.* Exs. 4 G, 3 & 5 D; 10/21 RT 384:12-17; Staff Opening Brief on Phase 2 Topics, pp. 9; 12.)

SJVUAPCD's initial methodology, attached to the AQMA, identifies an interpollutant offset ratio of 1:1 for VOC to NO_x and a ratio of 2:1 for SO_x to PM_{10}. SJVUAPCD rules require that interpollutant offset ratios must be determined by an air quality analysis. No such analysis has been provided. The rule also requires that Applicant demonstrate that the new source will not contribute to a violation of an AAQS. No such demonstration has been provided. In fact, Staff has shown, and Applicant has acknowledged, that the EAEC project will contribute to such a violation. (*Cf.* Ex. 4 G 3; & SJVUAPCD rule 2201, § 4.13.3; 10/21 RT 249: 4-13.)

In the second methodology, SJVUAPCD uses the appropriate 27% transport factor, but then inexplicably discounts emissions by the percentage of time the wind blows into the San Joaquin Valley and then further discounts the EAEC's emissions to account for only those emissions that occur during quarters of nonattainment. Discounting emissions from EAEC for the percentage of time the wind blows into the San Joaquin Valley is inappropriate because as the AFC acknowledges, EAEC is physically located in and all of its emissions will affect the San Joaquin Valley. (Exs. 2, p. 8.1-1; 5 D; Staff Opening Brief on Phase 2 Topics, p. 13.)

Staff contends that SJVUAPCD attempts an unequal comparison by counting only those EAEC emissions occurring during nonattainment quarters, while giving full credit to the ERCs from BAAQMD. Instead, both emissions and ERCs require an equal discount. For an accurate comparison of emissions and offsets, the calculations must be done for the entire year for both the emissions and the ERCs. Compounding SJVUAPCD's questionable methodology was its failure to comply with its own authority; Staff notes offsets amounts were not calculated in pounds per year in accordance with SJVUAPCD rule 2201, § 4.5.2. (Staff Opening Brief on Phase 2 Topics, pp. 13.)

Fortifying its claims that the SJVUAPCD's estimates are unreliable, Staff contends that there is nothing in the record to show that SJVUAPCD performed any type of extensive analysis to determine the appropriate number of offsets required for mitigation. SJVUAPCD did not prepare a determination of compliance for the EAEC. In fact, SJVUAPCD "did not prepare anything close to a DOC." (10/21 RT 383:13-14; Staff Opening Brief on Phase 2 Topics, pp. 9-10.)

Staff contends that SJVUAPCD's entire analysis consisted of reviewing Applicant submitted information. (10/21 RT 383: 3-8.) Staff notes that SJVUAPCD submitted cursory comments rather than an in-depth analysis on the proposed project that merely expressed a concern that BAAQMD offsets did not mitigate the SJVUAPCD impacts. SJVUAPCD documentation supporting their extra-mitigation analysis is deficient in breadth and methodology, as follows:

- 1½ pages attached to the AQMA;
- a recently produced one-page calculation using the Tesla methodology;
- neither of the foregoing analyses has undergone USEPA or CARB review, and thus do not bear either agency's approval;
- no cumulative impact assessment or modeling or health risk assessment was performed;
- no account was taken for secondary formation of $PM_{2.5}$ from ammonia slip in their calculation of the amount of offsets required; and
- lacking a legal obligation to perform a detailed analysis, SJVUAPCD yielded the function to others. (10/21 RT 383: 18-24; 391:16-21; 410:17-25; Exs. 4G3, p. 7; 5D; Staff Opening Brief on Phase 2 Topics, pp. 10-11.)

In addition, Staff posits that the SJVUAPCD did not analyze the EAEC project as if it were subject to its PSD-rules and regulations to arrive at the AQMA. Rather, SJVUAPCD was equivocal when asked directly whether it did so [the testimony is that the rules formed a basis for their methodology]. SJVUAPCD claimed that it was "determining what we feel the unmitigated impacts will be based on compliance with the Bay Area regulations, and determining how those should be mitigated." Hence, Staff contends that the record is unclear at best which rules were applied, if any at all, and for what purpose. (10/21 RT 184: 9-14; 407: 2-11, 25- 408:22; Staff Opening Brief on Phase 2 Topics, pp. 10-11.)

Finally, Staff contends that if the EAEC were analyzed pursuant to SJVUAPCD rules and regulations, no credit could be given Applicant for *any* of the ERCs obtained in the BAAQMD. SJVUAPCD rule 2201, 4.13.2 allows for the use of out-of-district ERCs only where the Air Pollution Control Officer has reviewed the permit conditions and certified that the offsets meet Health and Safety Code section 40709.6. No such certification has occurred. (Staff Opening Brief on Phase 2 Topics, pp. 11.)

Commingling of ERCs from an air district in a different air basin than where the emissions will occur only if both of the following conditions are met:

(1) the stationary source to which the emission reductions are credited is located in an upwind district that is classified as

being in a worse nonattainment status than the downwind district", and

(2) the stationary source at which there are emission increases to be offset is located in a downwind district that is *overwhelmingly impacted* by emissions transported from the upwind district." (Health and Safety Code section 40709.6(a))

The Bay Area ERCs do not satisfy either of these requirements and, therefore, they could not be used were the project located one-mile to the east in the SJVUAPCD. (Staff Opening Brief on Phase 2 Topics, pp. 11.)

SJVUAPCD rules require that offsets only be obtained from areas that have a nonattainment classification equal to or higher than the project area. (SJVUAPCD 2201, § 4.13.10.1.) BAAQMD is in a better nonattainment status, compared to the SJVUAPCD, for both ozone and PM_{10}. (40 C.F.R. §§ 303, 305, 312, 329, 352-354.) BAAQMD is classified as unclassified/attainment for PM_{10} and moderate for ozone. (40 C.F.R. part 81.) The SJVUAPCD is classified as serious nonattainment for PM_{10} and severe nonattainment for ozone. (40 C.F.R. part 81.) Therefore, if the SJVUAPCD were truly evaluating this project in accordance with their rules, they would not be able to give any credit to the ERCs offered. (10/21 RT 389:11-390:25; Staff Opening Brief on Phase 2 Topics, pp. 11-12.)

<u>CEQA Compliance</u>

Staff contends that the AQMA is inadequate because it does not contain the characteristics required for mitigation under CEQA, which requires agencies to adopt feasible mitigation measures to substantially lessen or avoid significant adverse environmental impacts. Mitigation measures will withstand judicial scrutiny where substantial evidence supports the approving agency's conclusion that the measures will be effective. Mitigation measures must be fully enforceable through permit conditions, agreements, or other legally binding instruments; agencies must adopt a reporting or monitoring program to ensure compliance with the identified mitigation during project implementation. (Pub. Res. Code §§ 21002, 21081.6 (a) (1); Cal. Code Regs., tit. 14,

§15126.4 (a)(1)(B) & (a) (2); *Laurel Heights Improvement Association of San Francisco, Inc. v. Regents of the University of California* (1988) 47 Cal.3d 376, 407; *see Sacramento Old City Association v. City Council of Sacramento*, (1991) 229 Cal.App.3d 1011, 1029 (agency may rely on mitigation measures that specify performance standards that will be met).)

Staff could find no support in the record for a conclusion that the AQMA is sufficient to mitigate the Staff-identified impacts to the Northern San Joaquin Valley. Staff contends that the AQMA does not contain any:

- provision for monitoring the efficacy of the programs or efforts funded by the AQMF;
- provision requiring emission reductions to occur during project implementation;
- binding requirement to obtain the identified number of offsets;
- performance standards ensuring that the identified offsets will in fact be obtained or that the AQMF is sufficient to obtain the identified reductions;
- guarantee of the location of the emission reductions, particularly that they will be located in the Northern San Joaquin Valley;
- guarantee of the total tonnage of emission reduction, which will be achieved
- substantiation for the AQMF of $15,000 per ton. (Ex 4 G 3; 10/21 RT 256: 2-10; Staff Opening Brief on Phase 2 Topics, p. 14.)

According to Staff, the AQMA contains only a projection of what the SJVUAPCD plans to accomplish with the AQMF, but there are no firm requirements to obtain certain amount of offsets, and once AQMF is tendered, Applicant's obligations are terminated. If the AQMF ultimately does not result in as many offsets as identified by San Joaquin, the shortfall will not be made up. (10/21 RT 185:1-7; Staff Opening Brief on Phase 2 Topics, p. 15.)

Most telling, according to Staff, is the SJVUAPCD testimony that if the EAEC project were under its jurisdiction, SJVUAPCD would not be allowed to accept the AQMA as mitigation. (10/21 RT 388:19-389-10; Staff Opening Brief on Phase 2 Topics, p. 15.)

In conclusion, Staff equates the situation presented here as analogous to the situation presented in *Kings County Farm Bureau v. City of Hanford*, (1990) 221 Cal.App.3d 692, at 727-728. There, the court found the EIR legally inadequate based upon a power plant developer accepting a mitigation fee without corresponding evidence that sufficient mitigation could be acquired with the funds. (Staff Opening Brief on Phase 2 Topics, p. 15-16.)

Likewise, here the SJVUAPCD has identified an impact and is suggesting that the Commission accept the AQMA, which only requires the payment of an AQMF as mitigation for the impact without any corresponding assurances that the money will obtain sufficient mitigation is presented.

Rather than rely on the AQMA, Staff evaluated a number of "consensus" proposals identified by Applicant and the SJVUAPCD. In reviewing the cost-effectiveness of each individual mitigation measure, Staff concluded that the greatest potential for additional ozone precursors (NO_x and/or VOC) and PM_{10} mitigation emission reductions were the SJVUAPCD-sponsored heavy-duty engine retrofit/replacement program and an Applicant-developed wood stove replacement program. (10/21 RT 255:20-258:17; Ex. 1, p. 5.1-33/34; Staff Opening Brief on Phase 2 Topics, pp. 16-17; *see* **Conditions AQ-SC5 & 6**.)

Under Staff's preferred mitigation plan, Applicant would provide funding to SJVUAPCD to continue and expand the engine incentive program. However, Staff would add a proviso that the funding only be used for applications that would result in emission reductions in the Livermore/Tracy and northern San Joaquin Valley areas. (Ex. 1, p. 5.1-33/34; Staff Opening Brief on Phase 2 Topics, pp. 16-17; **Condition AQ-SC5;** *see* below, **AIR QUALITY Table 9**.)

Using information supplied by the Applicant's, Staff estimated that approximately 57,240 pounds per year (29 tpy) of PM_{10} emission reductions could be generated from retrofitting/replacement of 1,080 heavy-duty engines. This amount of emission

reductions would reduce the project PM_{10} emissions liability to 21 tpy. Taking into account that the area typically experiences violations of the PM_{10} standard only during the four winter months (November to February), Staff recommended that only the four-month portion of the project's remaining PM_{10} emissions liability (21 tpy) be mitigated with additional local PM_{10} emission reductions. (Ex. 1, p. 5.1-31/32; *see* **Condition AQ-SC6**.)

AIR QUALITY Table 9
Project's Emissions and Staff Recommended Additional Mitigation

	NO_x and/or VOC	**PM_{10}**
Annual Project Emission Liability	175 tons per year	50 tons per year
Lifetime Project Emission Liability (for 40 years)	7,000 tons	not calculated
Heavy-Duty Engine Incentives Program		
Phase 1 (2002-2010) – 270 engines	1,725 tons	29 tons per year
Phase 2 (2011-2018) – 270 engines	1,725 tons	29 tons per year
Phase 3 (2019-2026) – 270 engines	1,725 tons	29 tons per year
Phase 4 (2027-2034) – 270 engines	1,725 tons	29 tons per year
Total for all 4 phases – 1,080 engines	7,000 tons	
Remaining Project Liability	0	21 tons per year, 7 tons per PM_{10} season
Wood Stove Replacement Program – 395 units	Not calculated	7 tons per PM_{10} season
Adequate to mitigate project's emissions?	Yes	Yes

Note: [1] N/C means not calculated
Source: (Ex. 1, p. 5.1-32.)

Using this approach, Staff estimated that EAEC's remaining PM_{10} emissions liability that needs to be mitigated is [(4/12) x21 tpy], or 7 tons of PM_{10} per PM_{10} season. To mitigate the remaining PM_{10} emissions, Staff recommended that Applicant develop a plan to provide financial incentives to willing participants in the Livermore/Tracy area to replace their current conventional wood stoves with newer, cleaner units. (Ex. 1, p. 5.1-32.)

Under such a program, each participant would receive a cash rebate of $1,250 to replace his or her current wood stove with a newer, EPA certified unit.[47] Staff estimates that the program should provide enough funds (approximately $490,000) to subsidize 395 units.

Staff estimates that this program would generate 7 tons of PM_{10} per PM_{10} season to mitigate the remaining PM_{10} emission liability for the project. (Ex. 1, p. 5.1-32; *see* above, **AIR QUALITY Table 9**.)

In addition to any Wood Stove Replacement Program, Staff recommends that ultra low sulfur diesel fuel, which contains no more than 15-ppm sulfur content be used to fuel the operation of the fire pump diesel engine. Because the operation of the fire pump engine is sporadic, Staff has not estimated its SO_x emissions. However, the operation of the engine with ultra low sulfur diesel fuel would result in 97 percent SO_x emission reduction compared with standard diesel fuel (which contains up to 500 ppm sulfur) each and every time the engine is in operation. (Ex. 1, p. 5.1-32/33.)

Staff notes that the ultra low sulfur fuel is already proposed to be used in the construction of the facility. Staff believes that the slight different cost between the ultra low sulfur diesel and the standard diesel would be a feasible control measure to reduce sulfur oxides emissions, and secondary PM_{10} emissions that the fire pump diesel engine produced. (Ex. 1, p. 5.1-33.)

As a contingency measure in case problems develop with the engine replacement and wood stove programs, Staff recommends that Applicant acquire ERCs to make up emission reduction shortfalls due to insufficient engine and woodstove replacement participation. Alternatively, Staff recommends that Applicant could choose to secure all the necessary emission reductions in the form of credits. (Ex. 1, p. 5.1-33.)

---

[47] Staff offers that such a rebate program is currently being offered in another CEC-licensed project (Three Mountain Power Plant) and is very successful]. (Ex. 1, p. 5.1-32.)

The SJVUAPCD has emissions offset banks split into three regions: the North, Central and Southern regions. Staff would require Applicant to secure ERCs in the North Region. NO_x, VOC, and PM_{10} ERCs that Applicant would acquire would be in lieu of or in combination with Staff's proposed mitigation programs. Staff believes that ERCs from the North Region equal to the amount specified would be closest to the proposed project and to the areas of potential impacts. (Ex. 1, p. 5.1-33; *see* above, **AIR QUALITY Table 9**.)

Staff believes that there are adequate ERCs available in the SJVUAPCD offset bank to mitigate fully the project's NO_x, VOC and PM_{10} emissions. According to Staff, flexibility would allow Applicant to agree to any combination of actual emission reductions from the replacement programs in the northern San Joaquin valley and the acquisition of ERCs as long as the quantities equal the amounts shown as necessary in **AIR QUALITY Table 9**. (Ex. 1, p. 5.1-33.)

In summarizing its recommended mitigation, Staff found that the EAEC's potential air quality impacts could be adequately mitigated through:

- controlling emissions from existing sources (i.e., engines and woodstoves) first, that failing, and/or;
- the use of ERCs acquired from the SJVUAPCD offset bank. (**Condition AQ-SC5-7**.)

Conclusions and Recommendations

Concluding, Staff made the following findings and recommendations:

- The EAEC has the potential to cause significant impacts to the state and federal 1-hour and the federal 8-hour ozone air quality standards in both the Bay Area and San Joaquin air basins.
- The project has the potential to cause significant impacts to the state 24-hour PM_{10} and the federal 24-hour $PM_{2.5}$ air quality standards in both the Bay Area and San Joaquin air basins.
- Applicant proposed ERCs are not adequate to mitigate EAEC's potential significant impacts to the state and the federal ozone, PM_{10} and $PM_{2.5}$ air quality standards in the Northern San Joaquin Air Basin.

- EAEC's potential impacts to the Northern San Joaquin Air Basin would be mitigated to a level of less than significant with the implementation of mitigation measures to secure emissions reductions locally equivalent to 175 tons per year of NO_x and/or VOC, as ozone precursors, and 50 ton per year of PM_{10}.
- Staff prefers that the reductions come from the SJVUAPCD Heavy-Duty Engine Incentive and the proposed Wood Stove Replacement mitigation measures. Alternatively, a mixture of ERCs and engine and stove replacements equal, locally, to 175 tons per year of NO_x and/or VOC, as ozone precursors, and 50 ton per year of PM_{10}, would mitigate the project's potential impacts.
- Applicant should agree to agreement to limit the ammonia slip[48] from the SCR system to no more than 5 ppm to lessen the potential impacts of the project on the area PM_{10} and $PM_{2.5}$ ambient air quality standards in both the Bay Area and San Joaquin air basins. Staff recommends the inclusion of this limit in **Condition AQ-25**.
- Applicant should agree to operate the fire pump diesel engine with ultra low sulfur diesel fuel to lessen the potential impacts of the project on the area PM_{10} and $PM_{2.5}$ ambient air quality standard in both the Bay Area and San Joaquin Air Basins. Staff recommends the inclusion of this restriction in **Condition AQ-68**.
- Inclusion of Staff's Conditions of Certification **AQ-SC1** through **AQ-SC4** to address the construction-related impacts in both the Bay Area and San Joaquin Air Basins.
- Applicant must secure emissions reductions locally equivalent to 175 tons per year of NO_x and/or VOC, as ozone precursors, and 50 ton per year of PM_{10}. and the reductions shall come from the following:
    a. An agreement to provide enough funding to the SJVUAPCD to subsidize the District's existing "Heavy-Duty Engine Incentive Program" to provide a reduction of 175 tons of ozone precursors (NO_x and/or VOC) for each year of the project lifetime. (**Condition AQ-SC5**.)
    b. An agreement to design and implement a program to rebate $1,250 to each participant who volunteers to replace his or her existing wood stove with a new EPA certified unit. (**Condition AQ-SC6**.)
    c. Alternatively, Applicant could provide the necessary emissions reductions in the form of ERCs. (**Condition AQ-SC7**.)

---

[48] With respect to ammonia slip, Staff found that due to the large combustion turbines used in the EAEC and the need to control NO_x emissions, significant amounts of ammonia will be injected into the flue gas stream as part of the SCR system. Not all of this ammonia will mix) react with the flue gases to reduce N0x A portion of the ammonia will pass through the SCR and will be emitted unaltered, out of the stacks. These ammonia emissions are known as ammonia slip. On a daily basis, a 10-ppm slip, which Applicant has agreed to, is equivalent to approximately 2,500 pounds per day of ammonia emitted into the atmosphere from the EAEC facility. (Ex. 1, p. 5.1-18.)

Cumulative Impacts

Staff performed a PM_{10} cumulative impact analysis, which included all the below listed sources and their emissions, for two plausible scenarios:

EAEC;

- Tesla;
- TPP;
- Tracy Biomass plant;
- Owens Brockway facility; and
- the Tracy Hills, South Schulte, and Mountain House[49] developments. (Ex. 1, C, p. 3.)

The first scenario assumes that the construction of the Mountain House community would be concurrent with normal operation of the EAEC and other above-listed facilities. The second scenario assumes that the construction of the Mountain House community is complete, and its emissions include only daily residential activities' emissions and mobile source emissions. The emissions from the Mountain House community were taken from the Environmental Impact Report (EIR) prepared for the Mountain House development project in 1994. (Ex. 1 C, p. 3.)

Staff's analysis plots the areas that are impacted by construction and operation of the EAEC, Tesla, TPP, Tracy Biomass, and Owen Brockway facilities, and the Mountain House, Tracy Hills, and South Schulte community developments. (Ex. 1 C, Air Quality Figures 6 & 7, below.) In Air Quality Figure 6, the area immediately east and southeast of EAEC facility would be impacted by PM_{10} as high as 32 $\mu g/m^3$, if construction of the Mountain House community were to coincide with the normal operation of the EAEC facility. The Mountain House School, which is immediately south of the EAEC, would be impacted by PM_{10} levels of approximately 19 to 22 $\mu g/m^3$. The town of Tracy would be impacted by 4 to 8 $\mu g/m^3$ levels of PM_{10}.

[49] Mobile source emissions were included for the Mountain House development only. (Ex. 1 C, p. 3.)

In Air Quality Figure 7, the area immediately east and southeast of the EAEC facility would be impacted by PM_{10} levels as high as 8 μg/m^3, assuming normal operation of the EAEC and the Mountain House community is fully built. The Mountain House School would be impacted by 5 μg/m^3 levels of PM_{10}, and the town of Tracy would be impacted by about 2 μg/m^3.

The results of the above cumulative impact analysis support Staff's original FSA conclusion that the EAEC project, along with other developments, would contribute to a significant impact to the air quality violations in the area. As stated in the FSA, the EAEC's potential impacts to the North San Joaquin Valley would be mitigated to a level of less than significant with the implementation of Staff's proposed mitigation measures to secure emissions reductions locally equivalent to 175 tons per year of NO_x and VOC, as ozone precursors, and 50 ton per year of PM_{10}.[50] (Ex. 1, C, pp. 3-4.)

4. Applicant

Preliminarily, Applicant has indicated that it has no objections to BAAQMD imposed Conditions of Certification. (**Conditions AQ-1-75**.) Applicant objects to Staff's recommendation that we modify the BAAQMD (and SJVUAPCD) recommended condition that sets the emissions standard for ammonia slip from 10 down to 5 ppmv @ 15 % O_2 over a three-hour period, down to 5 ppmv @ 15 % O_2 over a three-hour period. (**Air Quality Condition AQ-25 (e)**.)

Moreover, Applicant objects to all seven Staff-recommended conditions. Applicant has proposed rather minor changes to the first four (construction mitigation) of Staff's conditions. Applicant would delete, wholesale, "micro-scale mitigation of localized impacts," which is how it describes Staff's recommended conditions five and six whose purpose is to mitigate ozone and PM_{10} impacts in the North San Joaquin Valley. Applicant freely acknowledges that the EAEC is within the San Joaquin Air Basin, as it

[50] Applicant states that Staff's evidence does not support its claim for additional PM_{10} mitigation even if Staff's numbers are true. Based upon the entire record before us, we are not persuaded that Staff's analysis is faulty. (10/21 RT 164:24-166:4; 253:10-255:19.)

only "technically" resides in the Bay Area Air Basin. (Ex. 4 G, p. 2.1-3/4; **Condition AQ-SC1-7**, 10/21 RT 160:6-161:11; 241:14-242:6.)

In the Northern San Joaquin Valley where the EAEC is proposed to be located, Applicant concedes that ozone levels have exceeded both state (one-hour) and federal (eight-hour) AAQS over the past five years. On cross-examination to rebut Applicant's testimony that the "project area" does not have a severe ozone problem, Intervenor Sarvey elicited that statewide, the San Joaquin Valley Air Basin has the most exceedances for the state and federal one-hour ozone AAQS according to CARB's year 2002 data summary through October 17, 2002. (*Cf.* Exs. 4 G, p. 2.1-4/5-6/11; 6 J; 10/21 RT 200:11-202:5.)

Applicant's testimony that ozone is a regional problem is at odds with its position, and that of the SJVUAPCD, that the "project area" does not have a severe ozone problem. SJVUAPCD's position is that for purposes of the AQMA, it theoretically extended its boundaries one-mile north to include the project area. Even without such an extension, the EAEC's location is within the North San Joaquin Valley. Instead, we adopt Staff's position that EAEC's contribution to ozone levels [and PM_{10}] will create local and regional impacts. We therefore cannot accept Applicant's rationale that the "project area" does not have a severe ozone problem. (10/21 RT 261:13-265:19; Intervenor SJVUAPCD Reply Brief on Air Quality, p. 4.)

PM_{10} levels consistently have exceeded the state 24-hour standard over the past 12 years. However, Applicant points to data, which arguably shows that these levels have improved over the past few years.[51] $PM_{2.5}$ levels have exceeded the national 24-hour standard within the past 10 years, though implementation of the new federal $PM_{2.5}$ AAQS has not begun. Applicant notes that in the San Joaquin Valley, peak $PM_{2.5}$ levels

[51] Mr. Sarvey's cross-examination tended to rebut Applicant's evidence that PM_{10} concentrations have trended downward over the past 8 years. It also confirmed that the EAEC's alone would have a significant adverse impact on PM_{10} AAQS in the Northern San Joaquin Valley. (Ex. 6 K; *Cf.* 10/21 RT 202:11-207:17 & 225:21-.)

are dominated by secondary ammonium nitrate, wood smoke, vehicle exhaust, and other carbon sources. (Ex. 4 G, p. 2.1-4/5-6/11.)

Applicant's testimony relies on the FDOC and the FSA's findings that the EAEC will result in concentrations well below the most stringent BAAQMD AAQS for most pollutants. Applicant contends that the EAEC will add a small amount, less than five percent, to existing PM_{10} concentrations at the point of maximum impact. Applicant also contends that ozone and PM_{10} impacts from the EAEC will be less than significant. However, Applicant will provide additional mitigation as set forth in the AQMA with the SJVUAPCD to address concerns expressed about ozone and PM_{10} impacts. (Ex. 4G, p. 2.1-7.)

Applicant states that under the terms of the AQMA:

- the SJVUAPCD will determine precisely which mitigation measures will be implemented;
- the SJVUAPCD is committed to apply the AQMF exclusively to establish specific programs that create real time air quality benefits within the SJVUAPCD;
- the AQMA commits the SJVUAPCD to give preference to programs in or near the city of Tracy, San Joaquin County, and the Northern Region of the San Joaquin Valley Air Basin, in that order;
- the AQMA requires that the emission reduction programs include one or more of the programs set forth in an Air Quality Mitigation Measures Plan to be approved by the CEC upon EAEC's licensing; and,
- the AQMA provides that the SJVUAPCD may request the CEC's Compliance Project Manager to approve expenditures for measures not included in the original Air Quality Mitigation Measures Plan. (Ex. 4 G, pp. 2.1-8/9-10;[52]10/21 RT 151:7-153:20.)

Gary Rubenstein, Applicant's expert witness on Air Quality testified that he reviewed the EAEC project for compliance with LORS and CEQA. He determined that EAEC met all LORS regulatory requirements, which include (1) BACT as determined by the

[52] Applicant has submitted a proposed condition, which would effectuate the foregoing terms, were we to adopt it. We decline to do so. (Ex. 4 G, p. 2.1-8/10.)

BAAQMD, (2) an air quality impact analysis, and (3) the provision of ERCs. (10/21 RT 144:18-148:6; Ex. 4 G, p. 2.1-6.)

Regarding CEQA, Mr. Rubenstein testified that he reviewed impacts both local and regional. Local impacts include a review of (1) emissions control technology, (2) AAQS standards to ensure compliance under all weather and operating conditions, and (3) a screening level health risk assessment. Mr. Rubenstein testified that Applicant's submittals in the AFC and supplemental filings demonstrated the EAEC's regulatory compliance in terms of local impacts. (4 G, p. 10; 10/21 RT 146:3-107:3.)

In terms of regional impacts, Mr. Rubenstein testified that a November 2001 CAQA demonstrated that the EAEC project alone would contribute to existing violations of the state and federal standards for ozone and PM_{10}, thus creating a significant cumulative impact.[53] To mitigate these regional impacts with the SJVUAPCD, Applicant entered into the AQMA. Thus, according to Mr. Rubenstein, the EAEC will have no localized or regional significant air quality impacts, either in the Bay Area or in the San Joaquin Valley. (4 G, p. 10/21 RT 148:7-153:20.)[54] Evidence of record discloses that that neither Applicant nor SJVUAPCD performed ambient air quality dispersion modeling for ozone and PM_{10}. (10/21 RT 181:14-19; 391:19-21.)

Mr. Rubenstein testified that Staff's evidence disagrees with Applicant's in five principal areas:

- emission rates from the gas turbines during plant startups;
- emission limits for ammonia slip;
- the significance of construction impacts and what mitigation would be required;
- mitigation of impacts related to sulfur dioxide emissions; and
- mitigation for the EAEC's cumulative impacts. (10/21 RT 154:1-9.)

---

[53] Staff testified that Applicant's reliance on the November CAQA is fundamentally flawed because it is not inclusive of the mobile source emissions from Mountain House. (10/21 RT 253:8-255:19.)

[54] Staff's testimony and Mr. Sarvey's cross-examination effectively rebuts Applicant's position that there will be no local impacts for ozone and PM_{10}. (10/21 RT 209:9-216:11; 315:3-19; 351:5-19.)

Turbine startup emissions are not an issue because Applicant has agreed to limits set by the BAAQMD in the FDOC that Staff has accepted.

Second, because the North San Joaquin Valley is ammonia rich, lowering the ammonia slip level to 5-ppm from 10-ppm would have no appreciable value.[55] Both air districts have stated that 10-ppm is the appropriate level and have more appropriately focused their attention instead on lowering EAEC's NO_x emission levels to 2-ppm. Applicant asserts that CEC staff has determined to use the 10-ppm standard in other recent Northern San Joaquin Valley area cases, as has the EPA in an Arizona matter, and that there is no evidence in the record to support the lower standard.[56] (10/21 RT 154:10-157:13; Ex. 4 G, p. 2.1-16/17.)

With respect to construction impacts, Applicant has made recommendations for modifications to the conditions that Staff has recommended. (**Conditions AQ-SC1-4**; Ex. 4 G, p. 2.1-18-27.)

With respect to sulfur dioxide emissions, Applicant has accepted Staff's threshold finding that SO_2 emissions, if not mitigated, represent a significant air quality impact due to their potential contribution to ambient PM_{10} levels.[57] Applicant asserts that the Staff has been "inconsistent" on the question of requiring mitigation for the trace levels of SO_2 associated with natural gas combustion. (Ex. 4 G, p. 2.1-15/16; 10/21 RT 158:17-159:16; 265:9-19.)

---

[55] Applicant admitted on cross-examination that a 5-ppm ammonia slip level is technically feasible and that CARB recommends that air districts consider the 5-ppm slip level in combination with a 2.5-ppm NO_x level. (10/21 RT 194:4-18.) Staff's testimony further confirms this and goes further to suggest that the EPA recommends a 5-ppm level of ammonia slip. (10/21 RT 268:3-269:5.)

[56] We disagree. Staff's testimony is that EAEC's ammonia slip will create adverse particulate matter impacts whether or not the North San Joaquin Valley is ammonia rich. (10/21 RT 265:20-268:2.)

[57] Applicant and Staff agree that SO_2 emissions taken independently are sufficiently low that they do not trigger emission-offset requirements within the BAAQMD. (Ex. 4 G, p. 2.1-15; Staff Opening Brief on Phase 2 Topics, p. 19.)

Regarding cumulative impacts, Applicant disputes Staff's position that, in addition to the provision of BAAQMD's full emission offsets and the AQMA, further mitigation of emissions impacts is required. In addition to its proposed condition incorporating the AQMA, Applicant has proposed a condition that would mandate community advisory group participation on matters related to the AQMA. Applicant proposes these conditions in lieu of Staff's recommended conditions **AQ-SC5** & **6**. We decline to adopt it as a formal condition but strongly encourage active community participation on any issues surrounding the AQMA. (Exs. 4 G, p. 2.1-9/10; 4 G 1; 10/21 RT 159:17-168:6.)

5. SJVUAPCD

The SJVUAPCD asserts that the combination of the Bay Area ERCs and the AQMA will mitigate impacts to the San Joaquin Valley to a level of insignificance. (10/21 RT 380:3-381:22; Ex. 4 G 1; Intervenor SJVUAPCD Reply Brief on Air Quality, pp. 4-5.)

SJVUAPCD has not disputed Staff's findings in the FSA that:

- due to local topography, the EAEC site and project emissions would be located in the San Joaquin Valley Air Shed, which is subject to oversight by the SJVUAPCD (jurisdiction begins at the San Joaquin County line, a mile east of the project site);
- due to its unique location, the EAEC's emissions would affect air quality in the northern portion of the San Joaquin Valley;
- air quality in the San Joaquin Valley is worse than the air quality in the Bay Area;
- SJVUAPCD offset requirements are stricter than those of the BAAQMD; and
- SJVUAPCD's stricter offset requirements are intended to ensure that it can achieve progress toward its attainment goal. (10/21 RT 346:20-347:14.)

In the FSA, Staff developed an EEAC scenario that compared BAAQMD/SJVUAPCD offset requirements (inclusive of Staff's proposed additional mitigation) using SJVUAPCD Rule 2201-New and Modified Stationary Source Review. Staff's evaluation included the offset threshold and used the following offset ratios and criteria:

- 1.2:1 for emission reductions that are within 15 miles of the proposed project site,
- 1.5:1 for those reductions that are outside of the 15 miles radius, including those offsets in BAAQMD and
- ERCs from the BAAQMD west of Altamont Pass were valued at a 27 percent effectiveness to offset San Joaquin Valley projects and emissions. (Ex. 1, p. 5.1-34; 10/21 RT 384:2-386:22.)

Staff's evaluation included a table, which demonstrated that were the EAEC subject to SJVUAPCD's ,jurisdiction Applicant would be required to provide:

- an additional 216 tpy of NO_x and VOC as ozone precursors reductions; and
- an additional 95 tpy of PM_{10} reductions. (Ex. 1, p. 5.1-34; *see* below, **AIR QUALITY Table 10**.)

AIR QUALITY Table 10
EAEC Project per SJVUAPCD Rules and w/BAAQMD ERCs

	VOC	**NO_x**	**PM_{10}**	**SO_x**
EAEC Project Emissions (tpy)	73.7	263	148.0	24
SJVUAPCD Rule 2201 Offset Threshold (tpy)	10	10	14.6	27.4
SJVUAPCD Offsets required	63.7	253	133.4	0.0
BAAQMD ERCs	116.7	306.4	0.7	482.8
Transport ratio (CARB's and SJVUAPCD's 27%)	3.7	3.7	3.7	3.7
SJVUAPCD Distance ratio	1.5	1.5	1.5	1.5
Combined ratio (per SJVUAPCD)	4.2	4.2	4.2	4.2
Value of BAAQMD ERCs (@ combined ratio of 4.2:1)	27.8	72.9	0.2	115.0
Net surplus (shortfall) (tpy)	-35.9	-180.1	-133.2	115.0
SOX for PM_{10} (@ interpollutant trading ratio of 3.0:1)			38.3	
Total ozone precursor shortfall (tpy)	-216			
Net surplus (shortfall) (tpy)	**-216**		**-94.9**	**0**

Source: (Ex. 1, p. 5.1-35.)

Thus, SJVUAPCD would have required Applicant to provide **even more** emission reductions than what Staff is proposing (175 tpy of ozone precursor and 50 tpy of PM_{10} emission reductions) to mitigate the EAEC's emissions impacts in the Northern San Joaquin Valley. The differences stem from:

- Staff valuing those BAAQMD credits from Antioch for NO_x and SO_x at 70 percent effectiveness, while Staff assumed that the SJVUAPCD would value all credits west of Altamont Pass, including those in Antioch, at 27 percent effectiveness; and
- the relative stringency of the SJVUAPCD's rules in view of the area's poor air quality as it strives to achieve attainment. (Ex. 1, p. 5.1-34/35; *see infra* **AIR QUALITY Table 5**).

SJVUAPCD has recently suggested that EEAC need only to mitigate for:

- 52.6 tpy NO_x,
- 6.6 tpy VOC, and
- 5.5 tpy PM_{10}. (*Cf.* Exs. 4 G 3 & 5 D.)[58]

6. Intervenors Sarvey and CARE

We will not review in great detail the submissions of Intervenor Sarvey because in large part, they support the positions taken by Staff and we have reviewed those positions thoroughly. (Intervenor Sarvey 10/21/02 Hearing Brief and Reply Brief on Air Quality.) (10/21 RT 327:2-331:5.)

We do note Intervenor Sarvey's comments with respect to ammonia slip. Intervenor Sarvey argues that Applicant testified that no quantitative ambient data on ammonia emissions was collected, no calculations performed for ammonia concentrations or its contribution to PM_{10} or $PM_{2.5}$ secondary emissions. Further, Intervenor Sarvey points out that BAAQMD did no ammonia impact analysis and that "the SJVUAPCD criticized the BAAQMD for not evaluating the formation of ammonia particulate in their comments on the PDOC." (10/21 RT 196:16-200:10; Intervenor SJVUAPCD 10/21 Topics Brief on Air Quality, pp. 25-26.)[59]

---

[58] According to Staff, SJVUAPCD has submitted varying extra-mitigation estimates, which amounts to no more than a "back of the envelope" calculation that does not comport with the SJVUAPCD own rules and regulations. (Staff Opening Brief on Phase 2 Topics, pp. 10-13.)

[59] We note BAAQMD's reply to Intervenor Sarvey's comments on the PDOC, included as attachments to the FDOC that discussed ammonia slip only in relation to the BAAQMD. No analysis was made of ammonia slip impacts to the SJVUAPCD. (Ex. 2 Y 1.)

CARE's presentation centered on two distinct aspects of the proposed EAEC. First, CARE expressed questions about EAEC's three on one combined cycle configuration (3 GE turbines 3 HRSGs with duct burner, 1 steam turbine), which is not "in practice" now. Second, CARE raised questions concerning the application of the SCONOx technology to the EAEC. We concur with Staff's testimony that one, although a new configuration, EAEC's combined cycle operation, as proposed, cannot be classified as experimental. Second, with respect to SCONOx, we agree that BACT requirements do not impose any requirement that Applicant apply any particular technology. Scale-up issues aside, Applicant is free to choose whatever technology it desires so long as it can obtain the BACT emissions limits set forth by the appropriate regulatory agency. (10/21 RT 332:11-341:14; CARE's Post-hearing Opening Brief on Cumulative Air Quality Analysis, p. 2.)

COMMISSION DISCUSSION

The Committee concludes that BAAQMD's emission reduction credit offset package will mitigate all air quality issues associated with the EAEC facility. Staff disagrees, and believes additional mitigation is required in the SJUVAPCD.

While the controversy in this proceeding has focused on specific aspects of additional mitigation, the Committee is pleased with the common desire of all parties to provide further mitigation to communities in the SJVUAPCD. We applaud the Applicant's initiative to go beyond what is required for certification and fully endorse the AQMA between the Applicant and the SJVUAPCD. As the agreement indicates, the Applicant will contribute $1,002,480 to the SJVUAPCD to ensure localized benefits in the Northern Region of San Joaquin County, particularly near the City of Tracy.

Moreover, we applaud the contribution of all parties to the development of a Draft Consensus Air Quality Mitigation Plan (AQMP), which forms a credible reference for the SJVUAPCD to consider as it determines which mitigation measures should be funded. Measures included in the AQMP are:

- Providing natural gas transit buses and a natural gas refueling station to the Tracy Regional Transit;
- Replacing diesel school buses with natural gas buses;
- Installing solar panels at Mountain House School;
- Renovate the Mountain House School parking lot to reduce fugitive dust and relieve traffic congestion at the school;
- Subsidize the replacement of old wood stoves;
- Subsidize the cost of retrofitting fireplaces with natural gas; and
- Retrofit/replace heavy-duty or agricultural engines. (Ex. 1, p. 5.1-29).

As the AQMP suggests, the cost-effectiveness of the various proposals range widely as Staff demonstrates its analysis. However, the Committee feels that this proceeding is not the appropriate forum to debate the virtues of each individual measure, given the unique circumstances presented by our facts. In short, we think it best to leave these decisions to the agency that we feel is best situated to make them.

Therefore, we will not bind the District into implementing Staff's recommended programs namely the Heavy-Duty Engine and Wood Stove Replacement programs. We encourage Staff to be actively involved in whatever public debate is subsequently hosted by the SJVUAPCD. We also strongly encourage SJVUAPCD, in whatever mix of measures and activities that are selected following such a public process, to keep in mind our objective that they benefit the Northern San Joaquin Valley Region.

Likewise, with respect to the ammonia slip level, we are not inclined to second-guess the empirical findings of both the BAAQMD and the SJVUAPCD that the appropriate level is 10-ppm. We believe those matters are best left in the hands of the air districts.

FINDINGS AND CONCLUSIONS

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

1. Ambient Air Quality Standards (AAQS) have been established for six air contaminants identified as criteria air pollutants, including Sulfur Dioxide (SO_2)

Carbon Monoxide (CO), Carbon Dioxide (CO_2), Ozone (O_3), Nitrogen Dioxide (NO_2), and particulate matter less than 10 microns in diameter (PM_{10}).

2. Construction and operation of the EAEC will result in emissions of criteria air pollutants and their precursors primarily from the its major components, which consist of three natural gas fired, General Electric (GE) Frame 7FB combustion turbines, three HRSGs, each equipped with a 732 MMBTU duct burner, one steam turbine, one natural gas-fired 100,000 lbs/hr auxiliary boiler, one 19-cell cooling tower, one diesel fueled fire pump, and one natural gas-fired emergency generator.

3. The EAEC project is a major stationary source subject to NSR and PSD permitting because its emissions will trigger the threshold emission limits for such a review.

4. Over its 2-year construction period, the EAEC would create two new violations of the AAQS for the state 1-hour NO_2 standard and the state annual PM_{10} standard.

5. Statewide, the San Joaquin Valley Air Basin has the most exceedances for the state and federal one-hour ozone AAQS according to CARB's year 2002 data summary through October 17, 2002.

6. EEAC's construction has the potential to cause significant impacts to the NO_2 and PM_{10} AAQS, and would contribute significantly to the existing violations of the PM_{10} standard.

7. The Bay Area Air Quality Management District (BAAQMD) is the air quality regulatory agency for all of Alameda County where the EAEC is proposed to be located.

8. The BAAQMD issued an FDOC for the EAEC project that determines EAEC facility will comply with all applicable BAAQMD rules.

9. BAAQMD will require the EAEC to provide offsets on an annual basis for NO_x, VOC, and PM_{10}.

10. Applicant has provided BAAQMD banked certificates that are equal or equivalent to 305 tpy of NO_x, 87.5 tpy of VOC, and 444 tpy of PM_{10}.

11. BAAQMD has not required Applicant to provide offsets for the new SO_2 emission increases.

12. Applicant has secured all required offsets to mitigate fully the project in accordance with BAAQMD's requirements.

13. The EAEC will use BACT as determined by the BAAQMD to control emissions of NO_x, CO, SO_2, PM_{10}, and VOC's.

14. BACT for CO is 6.0 ppmvd, NO_x is 2.0 ppmvd, and VOC's is 2 ppmvd, all @ 15% O2, averaged over one hour for each of the EAEC's turbines and duct burners. BAAQMD and SJVUAPCD have recommended an ammonia slip level of 10 ppmv @ 15% O_2, averaged over three hours.

15. A 5-ppmv ammonia slip level is technically feasible and CARB recommends that air districts consider the 5-ppm slip level in combination with a 2.5-ppm NO_x level.

16. Applicant has agreed to conditions that would restrict the facility's annual emissions, including startups and shutdowns to 263 tons/yr of NO_x; 24 tons/yr of SO_2, 148 tons/yr of PM_{10}; 74 ton/yr of VOC's, and 794 tons/yr of CO.

17. EAEC's project site is geographically located within the San Joaquin Valley Air Basin, which is primarily within the regulatory control of the SJVUAPCD whose jurisdiction extends to the San Joaquin County line, one mile east of the proposed site.

18. The SJVUAPCD collects meteorological data at the project site and BAAQMD has determined that the collected meteorological data are representative of the area's meteorology, and that it is appropriate to use for air quality dispersion modeling analysis for the EAEC project.

19. Due to local topography, the EAEC site and project emissions would be located in the San Joaquin Valley Air Shed.

20. EAEC's emissions would affect the air quality in the San Joaquin Valley, especially the northern portion of the air basin, due to its unique location;

21. SJVUAPCD has emissions offset banks split into three regions: the North, Central and Southern regions.

22. If the EAEC project were subject to the jurisdiction of the SJVUAPCD, Applicant would be required to provide an additional 216 tpy of NO_x and VOC as ozone precursors reductions; and an additional 95 tpy of PM_{10} reductions.

23. The Northern San Joaquin Air Basin where the EAEC is proposed to be located has exceeded the state one-hour ozone AAQS (5 to 22 days per year) every year since 1995.

24. The USEPA has established an 8-hour ozone AAQS that the area of the Northern San Joaquin Air Basin where the EAEC is proposed to be located has exceeded every year since 1995.

25. Due to a court action, EPA has never implemented the 8-hour ozone AAQS and it has made no finding that the BAAQMD would be classified as non-attainment for such standard.

26. The SJVUAPCD (Stockton monitoring station) three-year annual average $PM_{2.5}$ level has recently been recorded at above the federal standard: 16.4 µg/m3 compared to the federal standard of 15 µg/m3.

27. The Northern San Joaquin Air Basin, which the EAEC will adversely affect, is a non-attainment area for the state 24-hour PM_{10} and the federal 24-hour $PM_{2.5}$ AAQS, though implementation of the new federal PM25 AAQS has not begun.

28. In the San Joaquin Valley, peak $PM_{2.5}$ levels are dominated by secondary ammonium nitrate, wood smoke, vehicle exhaust, and other carbon sources.

29. The SJVUAPCD is classified as "serious nonattainment" for PM_{10} and "severe nonattainment" for ozone.

30. Neither Applicant nor SJVUAPCD performed ambient air quality dispersion modeling for ozone and PM_{10}.

31. EAEC's construction activities would further exacerbate existing violations of the state 24-hour PM_{10} AAQS, and thus constitute a significant air quality impact for PM_{10}.

32. The EAEC has the potential to cause significant impacts to the state and federal 1-hour and the federal 8-hour ozone AAQS standards in both the Bay Area and San Joaquin air basins.

33. EAEC has the potential to cause significant impacts to the state 24-hour PM_{10} and the federal 24-hour $PM_{2.5}$ AAQS in both the Bay Area and San Joaquin Air Basins.

34. Applicant's proposed ERCs together with the AQMA are adequate to mitigate EAEC's potential significant impacts to the state and federal ozone, PM_{10} and $PM_{2.5}$ AAQS in the Northern San Joaquin Air Basin.

35. The EAEC project, along with other developments in the Northern San Joaquin Valley, would contribute to a significant impact to the air quality violations in the area.

36. Applicant has carried its burden of proof to demonstrate that with implementation of the Conditions of Certification specified below, the EAEC will be constructed and operated in compliance with all applicable laws, ordinances, regulations, and standards identified in the pertinent portion of Appendix A of this Decision.

We therefore conclude that with implementation of the Conditions of Certification below, the EAEC project will not create any significant direct, indirect, or cumulative adverse air

quality impacts; and will conform with all applicable LORS relating to air quality as set forth in the pertinent portions of Appendix A of this Decision.

CONDITIONS OF CERTIFICATION

AQ-SC1 The project owner shall fund all expenses for an on-site air quality construction mitigation manager (AQCMM) who shall be responsible for maintaining compliance with conditions **AQ-SC2** through **AQ-SC4** for the entire project site and linear facility construction. The on-site AQCMM shall have full access to areas of construction of the project site and linear facilities, and shall have the authority to appeal to the CPM to have the CPM stop any or all construction activities as warranted by applicable construction mitigation conditions. The on-site AQCMM shall have a current certification by the California Air Resources Board for Visible Emission Evaluation prior to the commencement of ground disturbance. The on-site AQCMM shall not be terminated without written consent of CPM.

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

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

Verification: At least sixty (60) days prior to start any ground disturbance, the project owner shall submit to the CPM, for approval, the construction mitigation plan. The CPM will notify the project owner of any necessary modifications to the plan within 30 days from the date of receipt. Otherwise, the plan shall be deemed approved.

AQ-SC3 The on-site AQCMM shall submit to the CPM, in the monthly compliance report, a construction mitigation report that demonstrates compliance with the following mitigation measures:

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

b) No vehicle shall exceed 10 miles per hour within the construction site.

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

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

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

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

g) No construction vehicles can enter or exit the construction site unless through the treated entrance roadways.

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

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

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

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

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

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

n) Any construction activities that can cause fugitive dust shall cease when the wind exceeds 15 miles per hour.

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

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

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

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

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

AQ-SC4 No construction activities are allowed to cause visible emissions at or beyond the project site fenced property boundary. No construction activities are

allowed to cause visible plumes that exceed 20 percent opacity at any location on the construction site. No construction activities are allowed to cause any visible plume in excess of 200 feet beyond the centerline of the construction of linear facilities.

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

AQ-SC5 The project owner shall submit to the CPM for review and approval any modification either proposed by the project owner or issuing agency to any project air permit.

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

DISTRICT'S CONDITIONS OF CERTIFICATION

(A) 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 consecutive three-hour period, not including start-up or shutdown periods

Firing Hours: Period of time during which fuel is flowing to a unit, measured in minutes

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 25(b) and 25(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 25(b) through 25(d) until termination of fuel flow to the Gas Turbine

Specified PAHs: The polycyclic aromatic hydrocarbons listed below shall be considered to be 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 NO_x, CO, or NH_3) corrected to a standard stack gas oxygen concentration. For emission points P-1 (combined exhaust of S-1 Gas Turbine and S-2 HRSG duct burner) P-2 (combined exhaust of S-3 Gas Turbine and S-4 HRSG duct burner), and P-3 (combined exhaust of S-5 Gas Turbine and S-6 HRSG duct burner), the standard stack gas oxygen concentration is 15% O_2 by volume on a dry basis. For emission point P-4 (auxiliary boiler), the standard stack gas oxygen concentration is 3% O_2 by volume on a dry basis

Commissioning Activities: All testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and the EAEC 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 successfully completed both performance and compliance testing. The commissioning period shall not exceed 180 days under any circumstances.

Precursor Organic Compounds (POCs): Any compound of carbon, excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate.

ppcd pounds per calendar day

pph pounds per calendar hour

CEC CPM: California Energy Commission Compliance Program Manager.

EAEC: East Altamont Energy Center.

(B) Applicability:

Conditions 1 through 16 and their verifications shall only apply during the commissioning period as defined above. Unless otherwise indicated, Conditions 17 through 74 shall apply after the commissioning period has ended.

Conditions for the Commissioning Period

AQ-1 The project owner of the EAEC) shall minimize emissions of carbon monoxide and nitrogen oxides from S-1, S-3, and S-5 Gas Turbines and S-2, S-4, and S-6 Heat Recovery Steam Generators (HRSGs) to the maximum extent possible during the commissioning period.

Verification: The project owner shall submit in the monthly compliance report to the CPM how this condition is being complied with.

AQ-2 At the earliest feasible opportunity in accordance with the recommendations of the equipment manufacturers and the construction contractor, the project owner shall **tune** the S-1, S-3, & S-5 Gas Turbine combustors and S-2, S-4, & S-6 Heat Recovery Steam Generator duct burners to minimize the emissions of carbon monoxide and nitrogen oxides.

Verification: The project owner shall submit in the monthly compliance report to the CPM how this condition is being complied with.

AQ-3 At the earliest feasible opportunity in accordance with the recommendations of the equipment manufacturers and the construction contractor, the project owner shall install, **adjust**, and operate the A-1, A-3, A-5, & A-7 Oxidation Catalysts and A-2, A-4, A-6, & A-8 SCR Systems to minimize the emissions of carbon monoxide and nitrogen oxides from S-1, S-3, & S-5 Gas Turbines, S-2, S-4, & S-6 Heat Recovery Steam Generators, and S-7 Auxiliary Boiler.

Verification: The project owner shall submit in the monthly compliance report to the CPM how this condition is being complied with.

AQ-4 Coincident with the steady-state operation of A-2, A-4, & A-6 SCR Systems and A-1, A-3, A-5, & A-7 Oxidation Catalysts pursuant to conditions 3, 9, 10, and 11, the **project owner** shall operate the Gas Turbines (S-1, S-3, & S-5) and the HRSGs (S-2, S-4, & S-6) in such a manner as to comply with the NO_x and CO emission limitations specified in conditions 25(a) through 25(d).

Verification: The project owner shall submit in the monthly compliance report to the CPM how this condition is being complied with.

AQ-5 Coincident with the steady-state operation of the A-8 SCR Systems and A-7 Oxidation **Catalyst pursuant** to conditions 3 and 12, the project owner shall operate the S-7 Auxiliary Boiler in such a manner as to comply with the NO_x and CO emission limitations specified in conditions 33(a) through 33(d).

Verification: The project owner shall submit in the monthly compliance report to the CPM how this condition is being complied with.

AQ-6 The project owner of the EAEC shall submit a plan to the District Permit Services Division and the CEC CPM at least four weeks prior to first firing of S-1, S-3, or S-5 Gas Turbines describing the procedures to be followed during the commissioning of the turbines, HRSGs, auxiliary boiler, 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-NO_x combustors, the installation and operation of the required emission control systems, the installation, calibration, and testing of the CO and NO_x continuous emission monitors, and any activities requiring the firing of the Gas Turbines (S-1, S-3, & S-5), HRSGs (S-2, S-4, & S-6), and S-7 Auxiliary Boiler without abatement by their respective Oxidation Catalysts and/or SCR Systems. The project owner shall not fire any of the Gas Turbines (S-1, S-3, or S-5) sooner than 28 days after the District receives the commissioning plan.

Verification: The project owner shall submit in the monthly compliance report to the CPM how this condition is being complied with.

AQ-7 During the commissioning period, the project owner of the EAEC shall demonstrate **compliance** with conditions 13, 14, and 15 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, and
- 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, & S-5), HRSGs (S-2, S-4, & S-6), and S-7 Auxiliary Boiler. The project owner shall use District-approved methods to calculate heat input rates, nitrogen dioxide mass emission rates, carbon monoxide mass emission rates, and NO_x and CO emission concentrations, summarized for each clock hour and each calendar day. The project owner shall retain records on site for at least five (5) years from the

date of entry and make such records available to District personnel upon request.

Verification: The project owner shall submit in the monthly compliance report to the CPM how this condition is being complied with.

AQ-8 The project owner shall install, calibrate, and operate the District-approved continuous monitors specified in condition 7 prior to first firing of the Gas Turbines (S-1, S-3, & S-5), Heat Recovery Steam Generators (S-2, S-4, & S-6), and S-7 Auxiliary Boiler. **After** first firing of the turbines and/or auxiliary boiler, the project owner shall adjust the detection range of these continuous emission monitors as necessary to accurately measure the resulting range of CO and NO_x emission concentrations. The type, specifications, and location of these monitors shall be subject to District review and approval.

Verification: The project owner shall submit in the monthly compliance report to the CPM how this condition is being complied with. In addition, the project owner shall provide evidence of the District's approval of the emission monitoring system to the CPM prior to first firing of the gas turbines.

AQ-9 The project owner shall not fire the S-1 Gas Turbine and S-2 Heat Recovery Steam Generator without abatement of nitrogen oxide emissions by A-1 SCR System and/or abatement of carbon monoxide emissions by A-1 Oxidation Catalyst for more than 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 and/or oxidation catalyst in place. Upon completion of these activities, the project owner shall provide written notice to the District Permit Services and Enforcement Divisions, and the CPM, and the unused balance of the 300 firing hours without abatement shall expire.

Verification: The project owner shall submit in the monthly compliance report to the CPM how this condition is being complied with.

AQ-10 The project owner shall not fire the S-3 Gas Turbine and S-4 Heat Recovery Steam Generator without abatement of nitrogen oxide emissions by A-3 SCR System and/or abatement of carbon monoxide emissions by A-3 Oxidation Catalyst for more than 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 and/or oxidation catalyst in place. Upon completion of these activities, the project owner shall provide written notice to the District Permit Services and Enforcement Divisions, and the CPM, and the unused balance of the 300 firing hours without abatement shall expire.

Verification: The project owner shall submit in the monthly compliance report to the CPM how this condition is being complied with.

AQ-11 The project owner shall not fire the S-5 Gas Turbine and S-6 Heat Recovery Steam Generator without abatement of nitrogen oxide emissions by A-5 SCR System and/or abatement of carbon monoxide emissions by A-5 Oxidation Catalyst for more than 300 hours during the commissioning period. Such operation of S-5 Gas Turbine and S-6 HRSG without abatement shall be limited to discrete commissioning activities that can only be properly executed without the SCR system and/or oxidation catalyst in place. Upon completion of these activities, the project owner shall provide written notice to the District Permit Services and Enforcement Divisions, and the CPM, and the unused balance of the 300 firing hours without abatement shall expire.

Verification: The project owner shall submit in the monthly compliance report to the CPM how this condition is being complied with.

AQ-12 The project owner shall not fire the S-7 Auxiliary Boiler without abatement of carbon monoxide emissions by A-7 Oxidation Catalyst and/or abatement of nitrogen oxide emissions by A-8 SCR System for more than 100 hours during the commissioning period. Such operation of S-7 Auxiliary Boiler without abatement by A-7 and/or A-8 shall be limited to discrete commissioning activities that can only be properly executed **without** the SCR system and/or oxidation catalyst in place. Upon completion of these activities, the project owner shall provide written notice to the District Permit Services and Enforcement Divisions, and the CPM, and the unused balance of the 100 firing hours without abatement shall expire.

Verification: The project owner shall submit in the monthly compliance report to the CPM how this condition is being complied with.

AQ-13 The total mass emissions of nitrogen oxides, carbon monoxide, precursor organic compounds, PM_{10}, and sulfur dioxide that are emitted by the Gas Turbines (S-1, S-3, & S-5), **Heat** Recovery Steam Generators (S-2, S-4, & S-6), S-7 Auxiliary Boiler, S-9 Fire Pump Diesel Engine, and S-10 Emergency Generator during the commissioning period shall accrue towards the consecutive twelve-month emission limitations specified in condition 35.

Verification: The project owner shall submit in the monthly compliance report to the CPM how this condition is being complied with.

AQ-14 The project owner shall not operate the Gas Turbines (S-1, S-3, & S-5) and Heat Recovery Steam Generators (S-2, S-4, & S-6) in a manner such that the combined pollutant **emissions** from these sources will 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, & S-5).

- NO_x (as NO_2)--4,805 ppcd--381 pph;
- CO--11,498 ppcd--930 pph;
- POC (as CH_4)--495 ppcd;

- PM_{10}--660 ppcd; and
- SO_2--42 ppcd

Verification: The project owner shall submit in the monthly compliance report to the CPM how this condition is being complied with.

AQ-15 The project owner shall not operate the S-7 Auxiliary Boiler such that the pollutant emissions will exceed the following limits during the commissioning period. These emission limits shall include emissions that occur during Auxiliary Boiler start-ups.

- NO_x (as NO_2)--428 ppcd--33 pph;
- CO--368 ppcd--22 pph;
- POC (as CH_4)--25.4 ppcd;
- PM_{10}--96 ppcd; and
- SO_2--2.4 pounds pcd.

Verification: The project owner shall submit in the monthly compliance report to the CPM how this condition is being complied with.

AQ-16 Prior to the end of the Commissioning Period, the project owner shall conduct a District and CEC approved source test using external continuous emission monitors to determine compliance with the limitations specified in condition 26. The source test shall determine NO_x, 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 start-up and three shutdown periods. Twenty working days before the execution of the source tests, the project owner shall submit to the District and the CPM a detailed source test plan designed to satisfy the requirements of this condition. The District and the CEC CPM will notify the project owner 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 project owner shall incorporate the District and CPM comments into the test plan. The project owner 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 sixty (60) days of the source testing date.

Verification: No later than thirty-five (35) working days before the commencement of the source tests, the project owner shall submit to the District and the CPM a detailed source test plan designed to satisfy the requirements of this condition. The District and the CPM will notify the project owner 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 project owner shall incorporate the District and CPM comments into the test plan. The project owner shall notify the District and the CPM within seven (7)

working days prior to the planned source testing date. Source test results shall be submitted to the District and the CPM within ninety (90) days of the source testing date.

Conditions for the Gas Turbines (S-1, S-3, & S-5) and the Heat Recovery Steam Generators (HRSGs; S-2, S-4, & S-6) for the Period Following Commissioning

AQ-17 The project owner shall fire the Gas Turbines (S-1, S-3, and S-5) and HRSG Duct Burners (S-2, S-4, and S-6) exclusively with natural gas. (BACT for SO_2 and PM_{10})

Verification: The project owner shall complete, on a daily basis, a laboratory analysis showing the sulfur content of natural gas being burned at the facility. The daily sulfur analysis reports shall be incorporated into the quarterly compliance reports.

AQ-18 The project owner shall not operate the units such that the combined heat input rate to each power train consisting of a Gas Turbine and its associated HRSG (S-1 & S-2, S-3 & S-4, and S-5 & S-6) exceeds 2,630.8 MM BTU (HHV) per hour, averaged over any rolling 3-hour period. (PSD for NO_x)

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQ-19 The project owner shall not operate the units such that the combined heat input rate to each power train consisting of a Gas Turbine and its associated HRSG (S-1 & S-2, S-3 & S-4, and S-5 & S-6) exceeds 63,139.2 MM BTU (HHV) per calendar day. (PSD for PM_{10})

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQ-20 The project owner shall not operate the units such that the combined cumulative heat input rate for the Gas Turbines (S-1, S-3, & S-5) and the HRSGs (S-2, S-4, & S-6) exceeds 61,100,064 MM BTU (HHV) per year. (Offsets)

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQ-21 The project owner shall not fire the HRSG duct burners (S-2, S-4, and S-6) unless its associated Gas Turbine (S-1, S-3, and S-5, respectively) is in operation. (BACT for NO_x)

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQ-22 The project owner shall ensure that the S-1 Gas Turbine and S-2 HRSG are 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 SCR catalyst bed has reached minimum operating temperature. (BACT for NO_x)

Verification: As part of the quarterly and annual compliance reports, the project owner 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-23 The project owner shall ensure that the S-3 Gas Turbine and S-4 HRSG are abated by the properly operated and properly maintained A-4 Selective Catalytic Reduction (SCR) System whenever fuel is combusted at those sources and the A-4 SCR catalyst bed has reached minimum operating temperature. (BACT for NO_x)

Verification: As part of the quarterly and annual compliance reports, the project owner 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-24 The project owner shall ensure that the S-5 Gas Turbine and S-6 HRSG are abated by the properly operated and properly maintained A-6 Selective Catalytic Reduction (SCR) System whenever fuel is combusted at those sources and the A-6 SCR catalyst bed has reached minimum operating temperature. (BACT for NO_x)

Verification: As part of the quarterly and annual compliance reports, the project owner 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-25 The project owner shall ensure that the Gas Turbines (S-1, S-3, & S-5) and HRSGs (S-2, S-4, & S-6) 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 S-1 Gas Turbine and S-2 HRSG after abatement by A-2 SCR System) shall not exceed 19 pounds per hour or 0.00723 lb/MM BTU (HHV) of natural gas fired. Nitrogen oxide mass emissions (calculated as NO_2) at P-2 (the combined exhaust point for S-3 Gas Turbine and S-4

HRSG after abatement by A-4 SCR System) shall not exceed 19 pounds per hour or 0.00723 lb/MM BTU (HHV) of natural gas fired.

Nitrogen oxide mass emissions (calculated as NO_2) at P-3 (the combined exhaust point for S-5 Gas Turbine and S-6 HRSG after abatement by A-6 SCR System) shall not exceed 19 pounds per hour or 0.00723 lb/MM BTU (HHV) of natural gas fired. (PSD for NO_x)

(b) The nitrogen oxide emission concentration at emission points P-1, P-2, and P-3 each shall not exceed 2.0 ppmv, on a dry basis, corrected to 15% O_2, averaged over any 1-hour period. (BACT for NO_x)

(c) Carbon monoxide mass emissions at P-1, P-2, and P-3 each shall not exceed 23.15 pounds per hour or 0.0088 lb/MM BTU of natural gas fired, averaged over any rolling 3-hour period. (PSD for CO)

(d) The carbon monoxide emission concentration at P-1, P-2, and P-3 each shall not exceed 4.0 ppmv, on a dry basis, corrected to 15% O_2, averaged over any rolling 3-hour period. (BACT for CO)

(e) Ammonia (NH_3) emission concentrations at P-1, P-2, and P-3 each shall not exceed 10-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-2, A-4, and A-6 SCR Systems. The correlation between the gas turbine and HRSG heat input rates, A-2, A-4, and A-6 SCR System ammonia injection rates, and corresponding ammonia emission concentration at emission points P-1, P-2, and P-3 shall be determined in accordance with permit condition 40. (TRMP for NH_3)

(f) Precursor organic compound (POC) mass emissions (as CH_4) at P-1, P-2, and P-3 each shall not exceed 6.64 pounds per hour or 0.00252 lb/MM BTU of natural gas fired. (BACT)

(g) Sulfur dioxide (SO_2) mass emissions at P-1, P-2, and P-3 each shall not exceed 1.84 pounds per hour or 0.0007 lb/MM BTU of natural gas fired. (BACT)

(h) Particulate matter (PM_{10}) mass emissions at P-1, P-2, and P-3 each shall not exceed 9 pounds per hour when the HRSG duct burners are not in operation. Particulate matter (PM_{10}) mass emissions at P-1, P-2, and P-3 each shall not exceed 11.5 pounds per hour when HRSG duct burners are in operation. (BACT)

(i) Compliance with the hourly NO_x emission limitations specified in condition 25(a) and 25(b) shall not be required during short-term excursions limited to a cumulative total of 10 hours per rolling 12-month period. Short-term excursions are defined as 15-minute periods designated by the project owner that are the direct result of transient load conditions, not to exceed four consecutive 15-minute periods, when the 15-minute average NO_x concentration exceeds 2.0 ppmv, dry @ 15% O_2. Examples of transient load conditions include, but are not limited to the following:

(1) Initiation/shutdown of combustion turbine inlet air-cooling;

(2) Initiation/shutdown of combustion turbine steam injection for power augmentation;

(3) Rapid combustion turbine load changes; and

(4) Initiation/shutdown of HRSG duct burners.

The maximum 1-hour average NO_x concentration for periods that include short-term excursions shall not exceed 30 ppmv, dry @ 15% O_2. All emissions during short-term excursions shall be included in all calculations of hourly, daily, and annual mass emission rates as required by this permit.

Verification: The project owner shall submit to the District and CPM, quarterly reports for the proceeding calendar quarter within thirty (30) days from the end of the quarter. The report for the fourth quarter can be an annual compliance summary for the preceding year. The quarterly and annual compliance summary reports shall contain the following information.

(a) Operating parameters of emission control equipment, including but not limited to ammonia injection rate, NO_x emission rate and ammonia slip.

(b) Total plant operation time (hours), number of startups, hours in cold startup, hours in warm startup, hours in hot startup, and hours in shutdown.

(c) Date and time of the beginning and end of each startup and shutdown period.

(d) Average plant operation schedule (hours per day, days per week, weeks per year).

(e) All continuous emissions data reduced and reported in accordance with the District approved CEMS protocol.

(f) Maximum hourly, maximum daily, total quarterly and total calendar year emissions of NO_x, CO, PM_{10}, VOC and SO_x (including calculation protocol).

(g) Fuel sulfur content (monthly laboratory analyses, monthly natural gas sulfur content reports from the natural gas supplier(s), or the results of a custom fuel-monitoring schedule approved by the District.

(h) A log of all excess emissions, including the information regarding malfunctions/breakdowns.

(i) Any permanent changes made in the plant process or production, which would affect air pollutant emissions, and indicate when changes were made.

(j) Any maintenance to any air pollutant control system (recorded on an as-performed basis).

In addition, this information shall be maintained on site for a minimum of five (5) years and shall be provided to District personnel on request.

AQ-26 The project owner shall ensure that the regulated air pollutant mass emission rates from each of the Gas Turbines (S-1, S-3, and S-5) during a start-up or a shutdown does not exceed the limits established below. (PSD)

Pollutant	Start-Up (Lb/start-up)	Shutdown (Lb/shutdown
Oxides of Nitrogen (as NO_2)	240	80
Carbon Monoxide (CO)	2,514	902
POC's (as CH_4)	48	116

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by Condition 25.

AQ-27 No more than one Gas Turbine (S-1, S-3, or S-5) shall be in start-up mode at any point in time. (PSD).

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by Condition 25 and report any instance in which more than one turbine has been in start-up mode.

Conditions for S-7 Auxiliary Boiler

AQ-28 The project owner shall fire the Auxiliary Boiler exclusively with natural gas. (BACT for SO_2 and PM_{10})

Verification: The project owner shall maintain, on a daily basis, a laboratory analysis showing the sulfur content of natural gas being burned at the facility. The daily sulfur analysis reports shall be incorporated into the quarterly compliance reports.

AQ-29 The project owner shall not operate the unit such that the heat input rate to S-7 Auxiliary Boiler exceeds 129 million BTU per hour, averaged over any rolling 3-hour period. (Cumulative Increase)

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQ-30 The project owner shall not operate the unit such that the daily heat input rate to S-7 Auxiliary Boiler exceeds 3,096 million BTU per day. (Cumulative Increase)

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQ-31 The project owner shall not operate the unit such that the combined cumulative heat input rate to S-7 Auxiliary Boiler exceeds 387,000 million BTU per consecutive twelve-month period. (Cumulative Increase)

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQ-32 The project owner shall ensure that S-7 Auxiliary Boiler exhaust gas is abated by A-7 Oxidation Catalyst and A-8 Selective Catalytic Reduction (SCR) System whenever fuel is combusted at S-7 and the A-8 SCR catalyst bed has reached minimum operating temperature. (BACT)

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on any major problem in the operation of the Oxidation Catalyst and the SCR systems for the boiler. The information shall include, at a minimum, the date, time, duration, and description of the problem, and the steps taken to resolve the problem.

AQ-33 The project owner shall ensure that S-7 Auxiliary Boiler complies with requirements (a) through (h) at all times, except during an auxiliary boiler start-up or shutdown. (BACT, PSD)

(a) Nitrogen oxide mass emissions (calculated as NO_2) at P-4 (the exhaust point for S-7 Auxiliary Boiler, after abatement by A-7 Oxidation Catalyst and A-8 SCR System) shall not exceed 0.0114 lb/MM BTU (HHV) of natural gas fired or 1.5 pounds per hour, averaged over any rolling 3-hour period. (PSD for NO_x)

(b) The nitrogen oxide emission concentration at P-4 shall not exceed 9.0 ppmv, on a dry basis, corrected to 3% O_2, averaged over any rolling 3-hour period. (BACT for NO_x)

(c) Carbon monoxide mass emissions at P-4 (the exhaust point for S-7 Auxiliary Boiler, after abatement by A-7 Oxidation Catalyst) shall not exceed 0.0386 lb/MM BTU (HHV) of natural gas fired or 5.0 pounds per hour, averaged over any rolling 3-hour period. (PSD for CO)

(d) The carbon monoxide emission concentration at P-4 shall not exceed 50 ppmv, on a dry basis, corrected to 3% O_2, averaged over any rolling 3-hour period. (BACT for CO)

(e) The precursor organic compound (POC) mass emission rates at P-4 shall not exceed 0.6 pounds per hour. (BACT for POC)

(f) The ammonia (NH_3) emission concentrations at P-4 shall not exceed 10 ppmv, on a dry basis, corrected to 3% 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-8 SCR System. The correlation between the auxiliary boiler heat input rates, A-8 SCR System ammonia injection rate, and corresponding ammonia emission concentration

at emission points P-4 shall be determined in accordance with permit condition 55. (TRMP for NH_3)

(g) Sulfur dioxide (SO_2) mass emissions at P-4 shall not exceed 0.09 pounds per hour or 0.0007 lb/MM BTU of natural gas fired. (BACT)

(h) Particulate matter (PM_{10}) mass emissions at P-4 shall not exceed 2.65 pounds per hour or 0.0205 lb/MM BTU of natural gas fired. (BACT)

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by Condition 25.

Conditions for All Sources

AQ-34 The project owner shall not allow total combined emissions from the Gas Turbines and HRSGs (S-1, S-2, S-3, S-4, S-5, and S-6), S-7 Auxiliary Boiler, S-9 Fire Pump Diesel Engine, and S-10 Emergency Generator, including emissions generated during Gas Turbine start-ups and shutdowns to exceed the following limits during any calendar day:

(a) 2,030.4 pounds of NO_x (as NO_2) per day (CEQA)

(b) 11,633.6 pounds of CO per day (PSD)

(c) 569.3 pounds of POC (as CH_4) per day (CEQA)

(d) 949.4 pounds of PM_{10} per day (PSD)

(e) 135.5 pounds of SO_2 per day (BACT)

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by Condition 25.

AQ-35 The project owner shall not allow cumulative combined emissions from the Gas Turbines and HRSGs (S-1, S-2, S-3, S-4, S-5, and S-6), S-7 Auxiliary Boiler, S-8 Cooling Tower, S-9 Fire Pump Diesel Engine, and S-10 Emergency Generator, including emissions generated during gas turbine start-ups and shutdowns to exceed the following limits during any consecutive twelve-month period:

(a) 263 tons of NO_x (as NO_2) per year (Offsets)

(b) 793.6 tons of CO per year (CumulativeIncrease/PSD)

(c) 73.7 tons of POC (as CH_4) per year (Offsets)

(d) 148 tons of PM_{10} per year (Offsets)

(e) 21.33 tons of SO_2 per year (Cumulative Increase)

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by Condition 25.

AQ-36 The project owner shall not allow the combined heat input rate to the Gas Turbines and HRSGs (S-1, S-2, S-3, S-4, S-5, and S-6) and Auxiliary Boiler (S-7) to exceed 190,450 million BTU per calendar day. (PSD, CEC Offsets)

Verification: he project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by Condition 25.

AQ-37 The project owner shall not allow the cumulative heat input rate to the Gas Turbines and HRSGs (S-1, S-2, S-3, S-4, S-5, and S-6) and Auxiliary Boiler (S-7) combined to exceed 61,487,064 million BTU per year. (Offsets)

Verification: he project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by Condition 25.

AQ-38 The project owner shall not allow the maximum projected annual toxic air contaminant emissions (per condition 41) from the Gas Turbines and HRSGs (S-1, S-2, S-3, S-4, S-5, & S-6) combined to exceed the following limits:

- formaldehyde--9,874.2 ppy;
- benzene--199.3 ppy;
- Specified polycyclic aromatic hydrocarbons (PAHs)--9.9 ppy

unless the following requirement is satisfied:

The project owner shall perform a health risk assessment to determine the total facility risk using the emission rates determined by source testing 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 project owner may request that the District and the CEC CPM revise the carcinogenic compound emission limits specified above. If the project owner demonstrates to the satisfaction of the APCO that these revised emission limits will not result in a significant cancer risk, the District and the CEC CPM may, at their discretion, adjust the carcinogenic compound emission limits listed above. (TRMP)

Verification: Compliance with condition 41 shall be deemed as compliance with this condition. In addition, approval by the District and the CPM of the reports prepared for condition 41 will constitute a verification of compliance with this condition.

AQ-39 The project owner shall demonstrate compliance with conditions 18 through 21, 25(a) through 25(d), 26, 27, 29, 30, 31, 33(a) through 33(d), 34(a), 34(b), 35(a), and 35(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, S-3 & S-4 combined, S-5 & S-6 combined, and S-7.

(b) Oxygen (O_2) Concentration, Nitrogen Oxides (NO_x) Concentration, and Carbon Monoxide (CO) Concentration at each of the following exhaust points: P-1, P-2, P-3, and P-4.

(c) Ammonia injection rate at A-2, A-4, A-6, and A-8 SCR Systems.

The project owner 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 project owner shall calculate and record the total firing hours, the average hourly fuel flow rates, and pollutant emission concentrations.

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

(d) Heat Input Rate for each of the following sources: S-1 & S-2 combined, S-3 & S-4 combined, S-5 & S-6 combined, and S-7.

(e) Corrected NO_x concentration, NO_x mass emission rate (as NO_2), corrected CO concentration, and CO mass emission rate at each of the following exhaust points: P-1, P-2, P-3, and P-4.

For each source, source grouping, or exhaust point, the project owner shall record the parameters specified in conditions 39(e) and 39(f) at least once every 15 minutes (excluding normal calibration periods). As specified below, the project owner shall calculate and record the following data:

a) total Heat Input Rate for every clock hour and the average hourly Heat Input Rate for every rolling 3-hour period.

b) on an hourly basis, the cumulative total Heat Input Rate for each calendar day for the following: each Gas Turbine and associated HRSG combined, the auxiliary boiler and all seven sources (S-1, S-2, S-3, S-4, S-5, S-6, & S-7) combined.

c) the average NO_x mass emission rate (as NO_2), CO mass emission rate, and corrected NO_x and CO emission concentrations for every clock hour and for every rolling 3-hour period.

d) on an hourly basis, the cumulative total NO_x mass emissions (as NO_2) and the cumulative total CO mass emissions, for each calendar day for the following: each Gas Turbine and associated HRSG combined, the auxiliary boiler, and all seven sources (S-1, S-2, S-3, S-4, S-5, S-6, & S-7) combined.

e) For each calendar day, the average hourly Heat Input Rates, Corrected NO_x emission concentration, NO_x mass emission rate (as NO_2), corrected CO emission concentration, and CO mass emission rate for each Gas Turbine and associated HRSG combined and the auxiliary boiler.

f) on a daily basis, the cumulative total NO_x mass emissions (as NO_2) and cumulative total CO mass emissions, for the previous consecutive twelve

month period for all seven sources (S-1, S-2, S-3, S-4, S-5, S-6, & S-7) combined.

(1-520.1, 9-9-501, BACT, Offsets, NSPS, PSD, Cumulative Increase)

Verification: At least thirty (30) days before first fire, the project owner shall submit to the CPM a plan on how the measurements and recordings required by this condition will be performed.

AQ-40 To demonstrate compliance with conditions 25(f), 25(g), 25(h), 26, 33(e), 33(g), 33(h), 34(c) through 34(e), and 35(c) through 35(e), the project owner 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 project owner shall use the actual Heat Input Rates calculated pursuant to condition 39, 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 seven sources (S-1, S-2, S-3, S-4, S-5, S-6, & S-7) combined.

(b) on a daily basis, the cumulative total POC, PM_{10}, and SO_2 mass emissions, for each year for all seven sources (S-1, S-2, S-3, S-4, S-5, S-6, & S-7) combined.

(Offsets, PSD, Cumulative Increase)

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by Condition 25.

AQ-41 To demonstrate compliance with Condition 38, the project owner shall calculate and record on an annual basis the maximum projected annual emissions of: Formaldehyde, Benzene, and Specified PAH's. Maximum projected annual emissions shall be calculated using the maximum Heat Input Rate of 61,100,064 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, and S-5 Gas Turbines and/or S-2, S-4, and S-6 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 rates during gas turbine start-up and minimum-load operation. The reduced annual heat input rate shall be subject to District review and approval. (TRMP)

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by Condition 25.

AQ-42 Within sixty (60) days of start-up of the EAEC, the project owner shall conduct a District-approved source test on exhaust point P-1, P-2, or P-3 to determine the corrected ammonia (NH_3) emission concentration to determine compliance with condition 25(e). The source test shall determine the correlation between the heat input rates of the gas turbine and associated HRSG, A-2, A-4, or A-6 SCR System ammonia injection rate, and the corresponding NH_3 emission concentration at emission point P-1, P-2, or P-3. The source test shall be conducted over the expected operating range of the turbine and HRSG (including, but not limited to, minimum and full load, and steam injection power augmentation mode) to establish the range of ammonia injection rates necessary to achieve NO_x emission reductions while maintaining ammonia slip levels. Source testing shall be repeated on an annual basis thereafter. Ongoing compliance with condition 25(e) shall be demonstrated through calculations of corrected ammonia concentrations based upon the source test correlation and continuous records of ammonia injection rate. Source test results shall be submitted to the District and the CEC CPM within 60 days of conducting the tests. (TRMP)

Verification: Approval of the source test protocols, as required in condition 16, and the source test reports shall be deemed as verification for this condition. The project owner shall notify the District and the 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 CPM within 60 days of the date of the tests.

AQ-43 Within ninety (90) days of start-up of the EAEC and on an annual basis thereafter, the project owner shall conduct a District-approved source test on exhaust points P-1, P-2, and P-3 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 25(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 25(c) and (d), and to verify the accuracy of the continuous emission monitors required in condition 39. The project owner 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. Source test results shall be submitted to the District and the CPM within sixty (60) days of conducting the tests. (BACT, offsets)

Verification: Approval of the source test protocols, as required in condition 16, and the source test reports shall be deemed as verification for this condition. The project owner shall notify the District and the 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 CPM within 60 days of the date of the tests.

AQ-44 The project owner shall obtain approval for all source test procedures from the District's Source Test Section and the CPM prior to conducting any tests. The project owner shall comply with all applicable testing requirements for continuous emission monitors as specified in Volume V of the District's Manual of Procedures. The project owner 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 project owner shall measure the contribution of condensable PM (back half) to the total PM_{10} emissions. However, the project owner 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: Submitting and getting approval of the source test procedures is the verification of this condition. The project owner shall notify the District and the 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 CPM within sixty (60) days of the date of the tests.

AQ-45 Within ninety (90) days of start-up (commercial operation) of the EAEC and on a biennial basis (once every two years) thereafter, the project owner shall conduct a District-approved source test on exhaust point P-1, P-2, or P-3 while the Gas Turbine and associated Heat Recovery Steam Generator are operating at maximum allowable operating rates to demonstrate compliance with Condition 36. 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 39 for any of the compounds listed below are less than the BAAQMD Toxic Risk Management Policy trigger levels shown, then the project owner may discontinue future testing for that pollutant:

- Benzene--≤ 6.7 ppy;
- Formaldehyde--≤ 33 ppy; and
- Specified PAHs--≤ 0.044 ppy. (TRMP)

Verification: The project owner shall notify the District and the 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 CPM within sixty (60) days of the date of the tests.

AQ-46 The project owner shall not allow the total combined sulfuric acid mist (SAM) emissions from S-1 through S-7 to exceed 7 tons totaled over any consecutive twelve-month period. The SAM emission rate shall be calculated using the total heat input for the sources and the highest results of any source testing conducted pursuant to condition 47. If this SAM mass emission limit is

exceeded, the project owner must utilize air dispersion modeling to determine the impact (in $\mu g/m^3$) of the sulfuric acid mist emissions pursuant to Regulation 2-2-306. (PSD)

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by Condition 25.

AQ-47 Within ninety (90) days of start-up (commercial operation) of the EAEC and on a semi-annual basis (twice per year) thereafter, the project owner shall conduct a District-approved source test on exhaust points P-1 through P-4 while each gas turbine, HRSG duct burner, and auxiliary boiler is operating at maximum heat input rates to demonstrate compliance with the SAM emission rates specified in condition 46. The project owner shall test for (as a minimum) SO_2, SO_3, and H_2SO_4. After acquiring one year of source test data on these sources, the project owner may petition the District to reduce the test frequency to an annual basis if test result variability is sufficiently low as determined by the District. Source test results shall be submitted to the District and the CEC CPM within sixty (60) days of conducting the tests. (PSD)

Verification: The project owner shall notify the District and the 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 CPM within sixty (60) days of the date of the tests.

AQ-48 The project owner of the EAEC 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: The project owner shall submit to the District and CPM the reports as required by procedures and time limits specified in the Rule, Regulation, Manual of Procedures, or Enforcement Division Policies & Procedures Manual.

AQ-49 The project owner of the EAEC shall maintain all records and reports on site for a minimum of 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 project owner 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 project owner shall make all records and reports available to the District, ARB, EPA or CEC staff.

AQ-50 The project owner of the EAEC 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 project owner 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 quarterly and annual compliance reports of Condition 25, the project owner shall include information on the dates when these violations occurred and when the project owner notified the District and the CPM.

AQ-51 The project owner shall ensure that the stack height of emission points P-1, P-2, and P-3 is each at least 175 feet above grade level at the stack base. (PSD, TRMP)

Verification: One-hundred twenty (120) days prior to the start of any site clearing or ground disturbance activities, the project owner shall provide the District and CPM an "approved for construction" drawing showing the appropriate stack height and location of sampling ports and platforms. The project owner shall make the site available to the District, EPA and CEC staff for inspection.

AQ-52 The project owner shall ensure that the stack height of emission point P-4 is at least one-hundred twenty (120) feet above grade level at the stack base. (PSD, TRMP)

Verification: One-hundred twenty (120) days prior to the start of any site clearing or ground disturbance activities, the project owner shall provide the District and CPM an "approved for construction" drawing showing the appropriate stack height and location of sampling ports and platforms. The project owner shall make the site available to the District, EPA and CEC staff for inspection.

AQ-53 The project owner of EAEC 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 comply with the District Manual of Procedures, Volume IV, Source Test Policy and Procedures, and shall be subject to BAAQMD review and approval. (Regulation 1-501)

Verification: One-hundred twenty (120) days prior to the start of any site clearing or ground disturbance activities, the project owner shall provide the District and CPM an "approved for construction" drawing showing the appropriate stack height and location of sampling ports and platforms. The project owner shall make the site available to the District, EPA and CEC staff for inspection.

AQ-54 Within one-hundred eighty (180) days of the issuance of the Authority to Construct for the EAEC, the project owner shall contact the BAAQMD

Technical Services Division regarding requirements for the continuous emission monitors, sampling ports, platforms, and source tests required by conditions 39, 42, 43, 45, and 60. All source testing and monitoring shall be conducted in accordance with the BAAQMD Manual of Procedures. (Regulation 1-501)

Verification: The project owner shall notify the CPM within 7 days of receiving the District's approval for the source testing and monitoring plan.

AQ-55 Prior to the issuance of the BAAQMD Authority to Construct for the EAEC, the Project owner shall demonstrate that valid emission reduction credits in the amount of 302.45 tons/year of Nitrogen Oxides, 84.755 tons/year of Precursor Organic Compounds, and 148 tons/year of PM_{10} 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: At least thirty (30) days prior to issuance of the District's Authority to Construct, the project owner shall provide valid emission reduction credit banking certificates to the District and the CPM for approval.

AQ-56 Prior to the start of construction of the EAEC, the project owner shall provide to the District valid emission reduction credit banking certificates in the amount of 302.45 tons/year of Nitrogen Oxides, 84.755 tons/year of Precursor Organic Compounds, and 148 tons/year of PM_{10} 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 start of construction, the project owner shall provide valid emission reduction credit banking certificates to the District and the CPM for approval.

AQ-57 Pursuant to BAAQMD Regulation 2, Rule 6, section 404.1, the project owner of the EAEC shall submit an application to the BAAQMD for a major facility review permit within 12 months of completing construction as demonstrated by the first firing of any gas turbine, HRSG duct burner, or auxiliary boiler. (Regulation 2-6-404.1)

Verification: The project owner shall submit to the CPM copies of the Federal (Title IV) Acid Rain and (Title V) Operating Permit within thirty (30) days after they are issued by the District.

AQ-58 Pursuant to 40 CFR Part 72.30(b)(2)(ii) of the Federal Acid Rain Program, the project owner of the EAEC shall submit an application for a Title IV operating permit to the BAAQMD at least 24 months before operation of any of the gas turbines (S-1, S-3, or S-5) or HRSGs (S-2, S-4, or S-6). (Regulation 2, Rule 7)

Verification: The project owner shall submit to the CPM copies of the Federal (Title IV) Acid Rain and (Title V) Operating Permit within thirty (30) days after they are issued by the District.

AQ-59 The EAEC shall comply with the continuous emission monitoring requirements of 40 CFR Part 75. (Regulation 2, Rule 7)

Verification: At least forty-five (45) days prior to any site clearing or ground disturbance activities, the project owner shall seek approval from the District for an emission monitoring plan.

AQ-60 The project owner shall take daily samples of the natural gas combusted at the EAEC. 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 years from the test date and shall be utilized to satisfy the requirements of 40 CFR Part 60, subpart GG. (Cumulative increase)

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by Condition 25.

Permit Conditions for S-8 Cooling Tower

AQ-61 The project owner shall properly install and maintain the cooling towers to minimize drift losses. The project owner shall equip the cooling towers 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 3,400 ppmw (mg/l). The project owner shall sample and test the cooling tower water at least once per day to verify compliance with this TDS limit. (PSD)

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by Condition 25.

AQ-62 The project owner 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 EAEC, the project owner 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 60 days of the initial operation of the cooling tower, the project owner shall perform an initial performance source test to determine the PM_{10} emission rate from the cooling tower to verify compliance with the vendor-guaranteed drift rate specified in condition 61. The CPM may, in years 5 and 15 of cooling tower operation, require the project owner to perform source tests to verify continued compliance with the vendor-guaranteed drift rate specified in condition 61. (PSD)

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by Condition 25.

AQ-63 S-1, S-3, and S-5 Gas Turbines shall each be equipped with air inlet filter(s) and lube oil vent coalescer(s). (BACT for PM_{10})

Verification: One hundred and twenty (120) days prior to start any site clearing or ground disturbance activities, the project owner shall provide the District and CPM an "approved for construction" drawing showing the appropriate air inlet filter and lube oil vent coalescers.

Permit Conditions for S-9 Fire Pump Diesel Engine

AQ-64 S-9 Fire Pump Diesel Engine is subject to the requirements of Regulation 9, Rule 1 ("Sulfur Dioxide"), and the requirements of Regulation 6 ("Particulate and Visible Emissions"). The engine may be subject to other District regulations, including Regulation 9, Rule 8 ("NO_x and CO from Stationary Internal Combustion Engines") in the future. (Regulation 9, Rule 1, Regulation 6)

Verification: During site inspection, the project owner shall make all records and reports available to the District, ARB, EPA or CEC staff.

AQ-65 The project owner shall ensure that S-9 burns no more than 1,420 gallons of diesel fuel totaled over any consecutive 12-month period for the purpose of reliability-related activities as defined by Regulation 9-8-232. (Offsets, BACT)

Verification: The project owner shall submit to the District and CPM the diesel fuel used in the quarterly and annual compliance reports as required by Condition 25.

AQ-66 The project owner may cause S-9 to burn an unlimited amount of diesel fuel for the purpose of providing power for the emergency pumping of water. (Regulation 9-8-330.1)

Verification: The project owner shall submit to the District and CPM the diesel fuel use in the quarterly and annual compliance reports as required by Condition 25.

AQ-67 The project owner shall equip S-9 with a non-resettable totalizing counter which records fuel use. (Cumulative increase)

Verification: One hundred and twenty (120) days prior to the installation of the fire pump diesel engine, the project owner shall submit to the District and CPM the manufacturer specifications for the fuel meter.

AQ-68 The project owner shall ensure that the sulfur content of all diesel fuel combusted at S-9 does not exceed 0.0015% by weight. (TRMP, TBACT)

Verification: The project owner shall submit to the District and CPM sulfur content of the diesel fuel in the quarterly and annual compliance reports as required by Condition 25.

AQ-69 The project owner shall maintain the following monthly records in a District-approved log for at least two (2) years and make such records and logs available to the District upon request:

a) total fuel use for S-9 for the purpose of reliability testing;

b) total fuel use for S-9 for the purpose of emergency pumping of water;

c) fuel sulfur content. (Cumulative increase)

Verification: During site inspection, the project owner shall make all records and reports available to the District, ARB, EPA or CEC staff.

Permit Conditions for S-10 Emergency Generator

AQ-70 S-10 Emergency Generator is subject to the requirements of Regulation 9, Rule 8 ("NO_x and CO from Stationary Internal Combustion Engines") and the requirements of Regulation 6 ("Particulate and Visible Emissions"). (Regulation 9, Rule 8, Regulation 6)

Verification: During site inspection, the project owner shall make all records and reports available to the District, ARB, EPA or CEC staff.

AQ-71 The project owner shall ensure that S-10 burns no more than 1,150 MM BTU (HHV) of natural gas totaled over any consecutive 12-month period nor 11.5 MM BTU (HHV) of natural gas per day for the purpose of reliability-related activities as defined by Regulation 9-8-232. (Offsets, BACT)

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by Condition 25.

AQ-72 The project owner may cause S-10 to burn an unlimited amount of natural gas for the purpose of emergency use as defined by Regulation 9-8-221. (Regulation 9-8-330.1)

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by Condition 25.

AQ-73 The project owner shall equip S-10 with a non-resettable totalizing counter, which records fuel use. (Cumulative increase)

Verification: One hundred and twenty (120) days prior to the installation of the emergency generator, the project owner shall submit to the District and CPM the manufacturer specifications for the fuel meter.

AQ-74 The project owner shall maintain the following monthly records in a District-approved log for at least two (2) years and make such records available to the District upon request:

a) total fuel consumption for S-10 for the purpose of reliability testing; and

b) total fuel consumption for S-10 for the purpose of emergency use. (Cumulative increase)

Verification: During site inspection, the project owner shall make all records and reports available to the District, ARB, EPA or CEC staff.

AQ-75 The project owner shall not operate both S-9 Fire Pump Diesel Engine and S-10 Emergency Generator on the same calendar day for the purposes of reliability-related activities. (PSD)

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by Condition 25.

B. PUBLIC HEALTH

The public health analysis supplements the previous discussion on air quality by examining potential public health effects from project emissions of toxic air contaminants. In this analysis, the Commission considers whether such emissions will result in significant adverse public health impacts that violate standards for public health protection.[60]

SUMMARY AND DISCUSSION OF THE EVIDENCE

Project construction and operation will result in routine emissions of toxic air contaminants (TACs).[61] TACs are categorized as noncriteria pollutants because there are no ambient air quality standards established to regulate their emissions.[62] A distinguishing factor between TACs versus criteria pollutants is that impacts from TACs tend to be highest in close proximity to the source and quickly drop off with distance. Therefore, levels of EAEC's TACs would be highest in the proposed project's immediate area and would decrease rapidly with distance. (Ex. 1, p. 5.7-1 & 7.) In this section, our focus is to determine whether such exposures would be at levels of possible health significance as established using existing assessment methods.

---

[60] This Decision addresses other potential public health concerns in the following sections. The accidental release of hazardous materials is discussed in the sections on 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 nonhazardous wastes are described in the Waste Management section.

[61] TAC's that were addressed by Applicant and Staff in the EAEC analysis with respect to non-cancer effects from inhalation were: ammonia from the use of the selective catalytic reduction (SCR) system for NO_x control; acetaldehyde; acrolein; arsenic; benzene; chromium; copper; ethyl benzene; formaldehyde; hexane; lead; mercury; naphthalene; nickel; polycyclic aromatic hydrocarbons (PAHs); propylene oxide; silver; toluene; xylene; zinc; and 1, 3-butadiene. The following were considered with regard to a possible cancer risk: acetaldehyde, arsenic, benzene, cadmium, chromium, formaldehyde, PAHs and propylene oxide, and 1, 3-butadiene. (Exs. 1, p. 5.7-7; 2, Vol. III, p. 8.6-1.)

[62] Criteria pollutants are discussed in our Air Quality section. They are pollutants for which ambient air quality standards have been established by local, state, and federal regulatory agencies. (Ex. 1, p. 5.7-1.)

In the absence of standards, state and federal regulatory programs have developed a health risk assessment procedure to evaluate potential health effects from TACs emissions.[63] 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. (Ex. 1, p. 5.7-1 4C, p. 44; Health and Safety Code, § 44360 et seq.)

1. Health Risk Assessment

Applicant performed a screening health-risk assessment that (SHRA) was reviewed by Staff and the BAAQMD. Applicant's risk assessment employed methodology that is consistent with the CAPCOA Guidelines and with methods developed by the California Office of Environmental Health Hazard Assessment (OEHHA) and BAAQMD's "Risk Management Procedure" Policy (May 1991). (10/21 RT 147:12-148:6; 355:10-15; 392: 11-20; 414:1-415:7; Exs. 1, p. 5.7–7; 2, pp. 8.1-42, & 8.6-4/8.)

This approach emphasizes worst case screening analysis to evaluate the highest level of potential impact to the maximally exposed individual (MEI),[64] as well as to indicate the potential for any adverse effects of non-carcinogenic compound emissions. (Exs. 1, p. 5.7–7; 2, Vol. III, pp. 8.1-42/44, & 8.6-3.)

Applicant included the following steps in its analysis:

---

[63] The health-risk assessment protocol is set forth in the Air Toxics Hot Spot Program Risk Assessment Guidelines ("Hot Spot Guidelines") developed by the California Air Pollution Control Officers Association (CAPCOA) pursuant to the Air Toxics Hot Spots Information and Assessment Act (Health and Safety Code, § 44360 et seq.). (See, Exs. 1, p. 5.7–7; 2, pp. 8.1-42-44, & 8.6-4-8.)

[64] The hypothetical MEI is an individual assumed to be located at the point where the highest concentrations of air pollutants associated with facility emissions are predicted to occur, based on air dispersion modeling. Human health risks associated with emissions from the proposed facility are unlikely to be higher at any other location than at the location of the MEI. If there is no significant impact associated with concentrations in air at the MEI location, it is unlikely that there would be significant impacts in any location near the facility. (Ex. 2, Vol. III, p. 8.6-3.)

- Hazard identification in which each pollutant of concern is identified along with possible health effects;

- Dose–response assessment in which the relation between the magnitude of exposure and the probability of effects is established;

- Exposure assessment in which the possible extent of pollutant exposures from a project is established for all possible pathways by dispersion modeling; and

- Risk characterization in which the nature and the magnitude of the possible human health risk is assessed. (Exs. 1, p. 5.7-1.)

The SHRA addresses three categories of health impacts: acute (short-term or 1 hour), chronic (long-term), and carcinogenic adverse health effects (long-term).[65] The SHRA results for EAEC are presented provided below. (**Public Health Table 1**.)

PUBLIC HEALTH TABLE 1
Screening Health Risk Assessment Results

Cancer Risk to Maximally Exposed Individual	0.19 in one million
Acute Inhalation Hazard Index	0.14
Chronic Inhalation Hazard Index	0.086
Chronic Noninhalation Exposure	Max. Dose/REL = 8.5E-6

Source: (Ex. 2, Vol. 3, p. 8.1-44.)

The SHRA results indicate that the acute and chronic hazard indices are well below 1.0, so are not significant. In addition, the maximum chronic noninhalation exposure is well below reference exposure levels (RELs) so is also considered insignificant. The cancer risk to a MEI is 0.19 in one million, well below the one in one million level. The SHRA results indicate that, overall, EAEC will not pose a significant health risk at any location.

SHRA results also demonstrated that EAEC's:

---

[65] Acute health effects result from 1-hour exposure to relatively high concentrations of pollutants, such as might occur in the event of an accidental spill. Acute effects are temporary in nature, and include symptoms such as irritation of the eyes, skin, and respiratory tract. Chronic health effects are those, which arise from long-term exposure to lower concentrations of pollutants. The exposure period is considered greater than 12 percent of a lifetime of seventy years. Thus, human exposures of greater than eight years are considered chronic exposures. Chronic health effects include diseases such as cancer, reduced lung function and heart disease. (Ex. 1, p. 5.7-4.)

- MEI location is at or near the project's fence line, which is less than one mile from the facility;
- Diesel fire pump engine will not cause a significant carcinogenic risk at any offsite location (maximum modeled cancer risk from the fire pump engine is 0.9 in one million, which is below the one in one million significance level. Therefore the fire pump is an exempt unit for BAAQMD permitting);
- risks to sensitive receptors within Staff's three-mile search radius will be even lower than the values summarized above in **Table 1**;
- If there is no significant impact associated with EAEC's ambient air noncriteria pollutants at the MEI location, it is unlikely that there would be significant impacts in any other location near the facility. (Ex. 2, Vol. III, pp. 8.1-44; 8.6-6 & Appendix Fig. 8.1D-1.)

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. A total hazard index is obtained after calculating the hazard indices for the individual pollutants and adding these indices together. For non-carcinogenic pollutants, a total hazard index of 1.0 or less is considered an insignificant effect. (Ex. 1, p. 5.7-6.)

Cancer risks are assumed to increase with duration of exposure, meaning for example, that the risk from longer exposures to carcinogens would be higher than the risk from shorter exposures. Theoretically, however, a single exposure to a carcinogen can cause cancer. Therefore, cancer is considered a more sensitive measure of potential adverse health effects than non-cancer risks. (Ex. 1, p. 5.7-5.)

For any source of specific concern, the risk of operations-related cancer is obtained by multiplying the exposure estimate by the potency factors for the individual carcinogens to be emitted. These potency factors are numerical values conservatively established to represent the cancer-causing potential of one carcinogen as compared to the others. After calculating these individual risk values, they are added together to obtain the total

incremental cancer risk estimate from operating the project over a period conservatively assumed to span the 70-year lifetime of the average individual. (Ex. 1, p. 5.7-5.)

Staff relied upon established state regulatory guidance to determine a cancer risk significance level.[66] For example, state standards specify that:

> [T]he risk level which represents no significant risk shall be one which is calculated to result in one excess case of cancer in an exposed population of 100,000, assuming lifetime exposure." This level of risk is equivalent to a cancer risk of ten in one million, or $10x10^{-6}$ (Title 22, Cal. Code of Regs., § 12703(b).)

In phase one (which is the screening phase), risk calculations are made using conservative, simplifying assumptions, which tend to overestimate rather than underestimate the cancer-risk. Where, as here, the estimate from this screening-level analysis is below 10 in a million, Staff regards the suggested cancer risk as insignificant and not warranting a refined analysis for delineating site-specific mitigation. (Ex. 1, p. 5.7-5/6.)[67]

2. Potential Impacts

EAEC's proposed location is an area of rural Alameda County that is sparsely populated, as it is zoned for agriculture, electric utility corridors (such as substations, transmission lines, and wind farms), highways, recreation uses, and water management projects, with the actual project site currently used for agriculture. (Ex. 1, p. 5.7-3.)

---

[66] The Air Toxics Hot Spots Guidelines and Proposition 65, the Safe Drinking Water and Toxic Enforcement Act of 1986 and its implementing provisions. (Health & Safety Code, §§ 25249.5 et. seq.)

[67] If the estimate is more than 10 in a million, Staff would perform phase two (refined analysis) using more situation-specific assumptions that might be necessary to assess the need for mitigation. In such a refined analysis. (Ex. 1, p. 5.7-6.)

Few residences are located near EAEC's proposed site, although there is one "sensitive receptor" within a three-mile radius of the project site: Mountain House Elementary School is located about one mile from the site.[68] (Ex. 1, p. 5.7-1.) (Ex. 1, p. 5.7-3.)

Construction

Possible construction-phase health impacts are those from human exposure to:

- windblown dust from site excavation, and grading, and
- emissions from construction-related equipment.

Dust-related impacts may derive from exposure to the dust itself as PM_{10}, or exposure to the toxic contaminants adsorbed on to it.[69] (Ex. 1, p. 5.7-6.)

Exhaust from diesel-fueled construction equipment has been established as a potent human carcinogen; thus, these emission levels should be regarded as possibly adding to a carcinogenic risk of specific concern. Applicant conservatively calculated the maximum cancer risk from the use of diesel-fueled equipment for EAEC's construction for the MEI to be 11 in a million. (Ex. 1, p. 5.7-6.)

Applicant's SHRA calculation was made without adjusting for the CARB-noted reduction in PM_{10} that result from the use of low-sulfur fuel (which is proposed for the project). Adjusting for such reduction would yield a maximum risk of 8.25 in a million, which would be much lower at the nearest residences in this sparsely populated area. Staff does not consider the SHRA calculation to warrant more mitigation than is specified in

---

[68] For purposes of a public health analysis, a sensitive receptor is an establishment that houses sensitive individuals (e.g., children, the elderly, and individuals with respiratory diseases), such as a school, hospital, a daycare facility, or a nursing home. The probability of health complaints increases when there are many sensitive receptor locations in a project area; Staff holds all projects to the same health standards whether proposed for a major population center or a sparsely populated area. The 3-mile radius is the area Staff recognizes as potentially significant in its analysis for the pollutant exposures of concern. (Ex. 1, p. 5.7-3.)

[69] Specific conditions are proposed to prevent worker or public exposure to soil-bound contaminants. Once implemented, the only construction-related PM_{10} impacts of potential significance would derive from possible PM_{10} impacts as a criteria pollutant. (*See our* **Conditions Waste Management**, *infra.*) As mentioned earlier, the potential for significant impacts arising from criteria pollutants is assessed in our section on **Air Quality**.

Applicant's Construction Mitigation Plan.[70] Staff considers these conditions as adequate for preventing the cancer and non-cancer risks. (Exs 1, p. 5.7-6/7; 4 H, p. 2.7-3.)

Operation

The emissions sources at the proposed EAEC project include:

- a fire pump diesel engine;
- an emergency generator;
- four simple-cycle gas turbines; and
- a cooling tower.

The relative contributions of EAEC's carcinogens sources are listed below in **Public Health Table 2.**

PUBLIC HEALTH TABLE 2
Relative Contributions of EAEC's Carcinogens Sources

Project Source	Potential Contribution to Total Cancer Risk
Gas turbines	0.00035 in a million
Auxiliary boiler	0.0475 in a million
Cooling tower	0.0000286 in a million
Emergency generator	0.0149 in a million
Fire pump engine	0.895 in a million
Total Cancer Risk	0.96 in a million

Source: (Ex. 1, p. 5.7-8.)

Staff validated Applicant's estimates of the EAEC's potential contribution to the area's carcinogenic and non-carcinogenic pollutants finding that the SHRA's estimates were obtained using well-established scientific protocol. (Ex. 1, p. 5.7-7/8.) Staff concluded that potential health impacts from EAEC's construction and operation would be appropriately mitigated by adoption of Staff's **Air Quality** conditions, and that additional **Public Health** conditions are unnecessary. We agree. (Ex. 1, p. 5.7-9/10.)

[70] Applicant's Construction Mitigation Plan will be implemented by our conditions. (*See* **Condition AQ-2**.)

On cross-examination of Staff's expert witness, Intervenor Sarvey attempted to correlate EAEC's construction and operation with already poor air quality conditions in the San Joaquin Valley to demonstrate the likelihood of increased health risks, particularly asthma. (10/21 RT 439:8-442:24.) Likewise, Intervenor CARE sought to establish, through cross-examination, a cause-and-effect relationship that might demonstrate a necessity for increased safety factors in the various analysis that determine public health risks to residents in the local area. CARE's focused its examination in terms of a "precautionary principle," which would ensure a great margin of error in the scientific testing in favor of public health in light of the uncertainties that now exist. (10/21 RT 443:3-446:6.)

Staff's expert witness recounted the "huge" regulatory conservative assumptions of the entrenched public health analysis. He testified that these assumptions are the very essence of the "precautionary principle" in that they are meant to offset to zero the uncertain cause-and-effect relationships that the scientific community now confronts. (10/21 RT 443:12-446:4.)

Cumulative Impacts

When toxic pollutants are emitted from multiple sources within a given area, the cumulative, or additive, impacts of such emissions could, in concept, lead to significant health impacts within the population, 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. Given the low cancer and non-cancer risks from all of EAEC's toxic emissions, coupled with the lack of other nearby toxic sources, Staff has determined that the EAEC project will not contribute significantly to any area toxic exposure in a cumulative nature. (Ex. 1, p. 5.7-8/9.)

COMMISSION DISCUSSION

The evidence of record fully supports the conclusion that the EAEC will not cause any adverse health effects to the surrounding area. We are persuaded that the extremely conservative nature of the methodology provides an abundant margin of error in favor of providing the maximum protection for the public's health. We find that Applicant has carried its burden of proof on this question.

FINDINGS AND CONCLUSIONS

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

1. Normal operation of the proposed project will result in the routine release of criteria and noncriteria pollutants that have the potential to impact adversely public health.

2. Emissions of criteria pollutants, which are discussed in the Air Quality section of this Decision, will be mitigated to levels consistent with applicable standards.

3. Applicant performed a screening health-risk assessment, using well–established scientific protocol, to analyze potential adverse health effects of noncriteria pollutants emitted by the proposed project.

4. The hypothetical maximum exposed individual is an individual assumed to be located at the point where the highest concentrations of air pollutants associated with facility emissions are predicted to occur, based on air dispersion modeling.

5. Human health risks associated with EAEC's emissions are unlikely to be higher at any other location than at the location of the maximum exposed individual.

6. If there are no significant impacts associated with EAEC's emissions of noncriteria pollutants at the maximum exposed individual location, it is unlikely that there would be significant impacts in any location near the facility.

7. EAEC's maximum exposed individual would be located less than one mile from the facility at or near its property line.

8. At the location of EAEC's maximum exposed individual, there is no significant change in lifetime risk to any person.

9. One sensitive receptor, Mountain House Elementary School, is located about one mile from the project site.

10. Mountain House Elementary School is within a 3-mile radius, which Staff in its analysis recognizes as potentially significant for the pollutant exposures of concern.

11. Acute and chronic non-cancer health risk from EAEC's emissions during construction and operational activities are insignificant.

12. The potential risk of cancer from EAEC's emissions is less than significant.

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

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

C. WORKER SAFETY AND FIRE PROTECTION

Industrial workers use process equipment and hazardous materials on a daily basis. Accidents involving relatively small amounts of material can result in serious injuries. This topical analysis assesses the completeness and adequacy of the measures proposed by the Applicant to comply with applicable worker health and safety requirements.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The project will rely on both onsite fire protection systems and local fire protection services. The onsite fire protection system provides the first line of defense for small fires. Elements of the fire protection and suppression systems include a carbon dioxide fire protection system (FM200) to protect the turbine, generator and accessory equipment, and fire detection sensors. In addition, onsite fire protection services will include fire alarms, detection systems, portable fire extinguishers, and fire hydrants and hose stations throughout the plant. EAEC will supply a dedicated water supply that will provide the facility with two hours of fire protection from the onsite worst-case single fire. (Exs. 1, p. 5.15-11; 4 A; p. 2.16-4; California Fire Code; 10/15 RT 82:6-21.)[71]

Applicant will be required to provide the written components of the Construction and Operations Safety and Health Programs to the CPM and to the Alameda County Fire Department (ACFD) prior to construction and operation of the project, to confirm the adequacy of the proposed worker safety and fire protection measures to meet or exceed all applicable LORS. Applicant has reviewed and is in agreement with the FSA's revised Conditions. Hence, there are no outstanding disputes between Applicant

[71] The California Fire Code contains general provisions for fire safety, including but not restricted to: 1) required road and building access; 2) water supplies; 3) installation of fire protection and life safety systems; 4) fire-resistive construction; 5) general fire safety precautions; 6) storage of combustible materials; 7) exits and emergency escapes; and 8) fire alarm systems. The California Fire Code reflects the body of regulations published at Part 9 of Title 24 (Health & Safety Code §18901 et seq.). (Ex. 1, p. 5.14-3.)

and Staff regarding the Conditions for Worker Safety and Fire Protection. (Exs. 1, p. 5.15-6/10; 1 A, pp. 2-3; 1 C, p. 23; 4 A, p. 2.16-3/4; 10/15 RT 115:17-116:8; Conditions **WORKER SAFETY 1**, **2**, & **3**.)

Fire Protection and Emergency Services

1. Applicant and Staff

Because the EAEC facility's proposed location is in Alameda County, initial fire support and emergency services to the site will be under the jurisdiction of the ACFD, with mutual aid provided by San Joaquin County's Tracy Fire Department (TFD). Mutual aid agreements require the nearest station to respond first on-scene, evaluate the situation, begin operations as appropriate, and then relinquish command and control to the fire-fighting team from the jurisdictional department upon their arrival. (Ex. 1, p. 5.15-4; 10/15 RT 84:19-86:15.)

According to Applicant, the TFD has both contractual and statutory obligations to provide mutual aid. TFD's contractual obligations are spelled out in a mutual aid agreement with Alameda County. TFD's statutory obligations to provide mutual aid arise from the 1991 East Bay Hills Fire. Senate Bill 1841, effective January 1, 1993, created the standardized emergency management system (SEMS). SEMS is a management system that provides an organizational framework and guidance for operations at each level of California's emergency management system. SEMS provides the umbrella under which all response agencies may function in an integrated function. The objective of SEMS is to improve the coordination of state and local emergency response. SEMS includes a system for obtaining additional emergency resources from non-affected jurisdictions, even jurisdictions in different counties. (Ex. 1, 5.14-4; 10/15 RT 98-99; Applicant's Opening Brief on Phase 1 topics, pp. 33-35, citing Government Code, § 8607.)

SEMS is mandated for all local governments to use in multi-jurisdictional or multi-agency emergency responses to be eligible for state reimbursement of response-related personnel costs. Applicant asserts that in the unlikely event that an emergency at the EAEC would require a multi-jurisdictional response, the SEMS system would draw upon the mutual aid of resources within San Joaquin County to include the TFD, notwithstanding protestations to the contrary. (Applicant's Opening Brief on Phase 1 topics, pp. 33-35, citing Gov. Code § 8607.1(e).)

AFCD's closest Fire Station to the site is Station No. 8, located at 1617 College Avenue in Livermore. Staff determined that the response time to the proposed project site is estimated to be 15 minutes. Fire Station No. 8 has:

- two (2) engines;
- three (3) squads; and
- services a response area of 280 square miles of open rangeland and freeway. (Ex. 1, p. 5.15-4; 10/15 RT 96:16-22; 113:5- 17.)

According to Staff, in the event of an EAEC fire emergency, Alameda County Central Dispatch would send Station 8 and contact the TFD to respond under the automatic aid agreement between the two counties. The TFD's estimated response time to the proposed EAEC facility is about 6 minutes. When the Mountain House Community Services District Fire Department (MHFD) is operational, it will be approximately 3.5 miles from EAEC's proposed location. (Ex. 1, p. 5.15-11; 10/15 RT 117:11-14.)

ACFD Station 4, located at 20336 San Miguel Avenue in Castro Valley, is the hazardous materials (HAZMAT) first responder. Response time for Station 4 to the EAEC is estimated to be 35 minutes. Firefighters from Station 8 and those provided by the TFD would secure the site until the Station 4 HAZMAT team arrived. Station 4 has 24-hour HAZMAT capabilities, a HAZMAT engine and at least six personnel on duty. (Exs. 1, p. 5.15-4; 4 A; p. 2.16-2; 10/15 RT 100:18-102: 24.)

In response to EAEC's construction, Alameda County is planning to relocate Station 8 from downtown Livermore to a location near Interstate 580 and Greenhill Road, which is closer to the EAEC site. The relocation will be completed prior to the start of EAEC's operations. Estimated response time from the Greenhill Road location to the EAEC would be 10 minutes. According to Fire Marshall Ferdinand, the relocation of Station 8 would enhance ACFD's firefighting capabilities in the rural area where the EAEC is proposed without any corresponding adverse effects on the ACFD's staffing. (Ex. 1, p. 5.15-4; 10/15 RT 78:1-24; 83:8-85:8; 113:18-114:14.)

Applicant has agreed to fund the move of Station 8 for $2,500,000 along with an additional amount of $500,000 to fund enhanced EMS. Although the precise nature of the emergency services has yet to be determined, Alameda County officials indicated that these funds might be used to purchase a helicopter for use on the East Side of Altamont Pass for structural and wildland fire-fighting as well as EMS response. (Exs. 1, p. 5.15-4/5; 1 A, pp. 3-4; 10/15 RT 83:8-85:8; 102; 25-103:10; Condition **WORKER SAFETY-3**.)

Staff reviewed and evaluated the adequacy of ACFD's response times both with and without the relocation of station 8. Staff found that response times:

- would vary from 10 minutes to as long as 30 minutes due to traffic;
- are consistent with times found to be adequate at other rural power plant locations within California;
- are necessarily longer in rural areas than urban response times due to distance between population centers where fire stations are usually located;
- are remediated by the existence of mutual aid agreements between the TFD and the ACFD;
- are remediated because power plants in general rarely require off-site fire fighting response,[72] and
- would be further remediated by a likely first response from the new MHFD. (Ex. 1, p. 5.15-4/5; 10/15 RT 82:22-83:8; 103:15-105:4; 109:17-111:13.)

---

[72] Staff has found that this is a result of the lack of burnable materials at a power plant, the safety precautions taken, the training of the on-site workers, and the presence of on-site automatic fire detection and suppression systems. (Ex. 1, p. 5.15-5; 10/15 RT 81:23-82:5).)

In addition, Staff found that, as with off-site fire services, the need for EMS response is also minimal. Applicant documented this finding by surveys of requests from several of its power plants in the western region for off-site fire fighting and EMS services. The survey found that for 13 power plants over the past 10 years, only two fire responses were requested, none for a major incident. During this identical period, a total of five EMS requests were made and only one of those was for a work-related injury. Staff found that the survey supports its conclusion that:

- off-site fire and EMS services are rarely requested or needed at power plants;
- should the TFD or the MHFD continue to provide services to Alameda County under the current mutual aid agreement, the resulting impacts on those fire departments from the EAEC would be insignificant;
- even without the existence of a Mutual Aid Agreement, fire-fighting and EMS response times for this project are no greater (and in some places far less) than for other California rural power plants;
- Alameda County's provision of EMS services alone (without a mutual aid agreement) would be sufficient to service the EAEC; and,
- the proposed EAEC will not result in any significant impacts to local EMS services. (Ex. 1, p. 5.15-5; 10/15 RT 85:6-87:19.)

2. ACFD

Alameda County Fire Chief Bill McCammon is responsible for the overall operations of the ACFD, a dependent special district, which reports directly to the Alameda County Board of Supervisors. Chief McCammon testified that even if the TFD were to decline to provide emergency response to the EAEC, Alameda County could sufficiently provide such response by itself. "So we believe that we can adequately serve this plant without the mutual aid agreement." (10/15 RT 87:12-90:3.)

3. TFD

At the May 28, 2002 workshop, the TFD expressed concerns about serving the EAEC with fire and emergency services (EMS), which they are obligated to provide under their current Mutual Aid Agreement with ACFD. At our evidentiary hearings, the TFD, represented in person by Battalion Chief Larry Fragoso, expressed frustration over the FSA's lack of any provision for mitigation to be provided to the TFD. The TFD is

expected to respond to emergencies at any power projects near the City of Tracy in both San Joaquin and Alameda County. (10/15 RT 105:22-107:5; 116:18-117:25; 163:9-168:12; Exs. 1, p. 5.15-4/5; 4 A; p. 2.16-2.)

Chief Fragoso provided public comment that over the past 24 years for emergencies near Tracy in Alameda County, TFD has provided automatic aid to the ACFD. According to Chief Fragoso, ACFD's failure to discuss appropriate mitigation for TFD has resulted in termination of all automatic aid into the area of Alameda County closest to the City of Tracy (Altamont/Midway Road areas). The TFD is the nearest emergency services resource (within three miles) for residences in the area. In addition, Chief Fragoso commented that the deteriorating relationship between the departments over appropriate mitigation for TFD threatens the counties past agreements for mutual aid. (10/15 RT 97:13-99-6; 163:9-168:12; Exs 1 G; 6 A 1& 6 A 2.)

4. Intervenor Sarvey

Intervenor Sarvey introduced a letter from TFD Fire Chief Terrell S. Estes. Chief Estes' letter states TFD's position that the current Mutual Aid Agreement between TFD and Alameda County does not mandate TFD's emergency response to the EAEC project. According to Chief Estes's letter, TFD's provision of fire services to the EAEC would follow response criteria existing without the Mutual Aid Agreement. (Ex. 6 A; Intervenor Sarvey Opening Brief on Phase 1 Topic Areas, pp. 1-5.)

Intervenor Sarvey made public comment to the effect that the CEC's position in not recommending Worker Safety and Fire Protection mitigation to San Joaquin County or the TFD is erroneous under CEQA. Intervenor Sarvey commented that the development of power plants in the region has driven a wedge between the ACFD and the TFD because the latter is not receiving its fair share of resources for increased services. (Pub. Res. Code, § 21000 et seq.; 10/15 RT 172:22-177:17.)

COMMISSION DISCUSSION

Applicant asserts that for the purposes of this proceeding, it is not necessary for us to determine whether the TFD will honor its mutual aid obligations because the record clearly establishes that the facility will receive an adequate level of fire and emergency services, even without the TFD's services. For example, Fire Chief McCammon testified that even if the City of Tracy Fire Department was to decline to provide emergency response to the EAEC, Alameda County could sufficiently provide such response alone.

Similarly, Staff found that even without the existence of a mutual aid agreement, firefighting and EMS response times by ACFD to the EAEC will be no greater (and in some places far less) than for California rural power plants, and thus would be sufficient to service the EAEC. Staff therefore concludes that even without the existence of a Mutual Aid Agreement, there will be no significant impacts.

Under these circumstances, the Committee must find that Applicant has carried its burden of proof.

FINDINGS AND CONCLUSIONS

Based upon the evidence of record regarding the topic of worker safety, we find and conclude as follows:

1. Applicant will be required to provide the written components of the Construction and Operations Safety and Health Programs to the CPM and to the Alameda County Fire Department (ACFD) prior to construction and operation of the project, to confirm the adequacy of the proposed worker safety and fire protection measures to meet all applicable LORS.

2. No construction or operation will commence on the EAEC project until all applicable training and risk management plans are implemented.

3. Because the EAEC facility's proposed location is in Alameda County, initial fire and emergency services support (EMS) to the site will be under the jurisdiction of the Alameda County Fire Department.

4. AFCD's closest Fire Station to the site is Station No. 8, located at 1617 College Avenue in Livermore. Staff determined that the response time to the proposed project site is estimated to be 15 minutes.

5. Alameda County is planning to relocate Station 8 from downtown Livermore to a location near Interstate 580 and Greenhill Road, which is closer to the EAEC site. The relocation will be completed prior to the start of EAEC's operations. Estimated response time from the Greenhill Road location to the EAEC would be 10 minutes.

6. Applicant has agreed to fund the move of Station 8 in the amount of $2,500,000 along with an additional amount of $500,000 to fund enhanced EMS.

7. Alameda County and San Joaquin County have executed automatic and mutual agreements for the San Joaquin County's Tracy Fire Department (TFD) to provide emergency services into the area of Alameda County closest to the City of Tracy (Altamont/Midway Road areas).

8. TFD's estimated response time to an emergency at the EAEC is about 6 minutes.

9. Alameda County's provision of EMS services alone (without a mutual aid agreement) would be sufficient to service the EAEC.

10. Compliance with existing applicable LORS will adequately assure protection of worker health and safety during EAEC's construction and operation phases.

11. In order to comply with applicable requirements, Applicant must prepare and submit safety and health programs for EAEC's construction and operation phases.

12. The Conditions of Certification below require the submission and review of safety and health programs for EAEC's construction and operation phases.

13. Assuming compliance with the Conditions of Certification contained in this Decision, the EAEC project will comply with all LORS intended to protect worker health and safety and identified in the appropriate portion of Appendix A of this Decision.

We therefore conclude that the EAEC project will adequately address worker safety and fire protection matters during the construction and operation phases.

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:

- Injury and Illness Prevention Program
- a Construction Safety Program;
- a Construction Personal Protective Equipment Program;
- a Construction Exposure Monitoring Program;
- a Construction Emergency Action Plan; and
- a Construction Fire Protection and Prevention Plan.

Protocol: The Safety Program, the Personal Protective Equipment Program, and the Exposure Monitoring Program shall be submitted to the CPM for review and approval concerning compliance of the program will all applicable Safety Orders. The Construction Fire Protection and Prevention Plan and Emergency Action Plan shall be submitted to the Alameda County Fire Department for review and comment prior to submittal to the CPM.

Verification: At least thirty (30) days prior to the start of construction, the project owner shall submit to the CPM for review and approval copy of the Project Injury and Illness Prevention Program. The project owner shall provide a letter from the Alameda County Fire Department stating that the department has reviewed and accepted the Construction Fire Protection and Prevention Plan and the Emergency Action Plan.

WORKER SAFETY–2 the project owner shall submit to the CPM a copy of the Project Operations and Maintenance Safety and Health Program containing the following:

- an Operation Injury and Illness Prevention Plan;
- an Emergency Action Plan;
- a Hazardous Materials Management Program;
- an Operations and Maintenance Safety Program;
- a Fire Protection and Prevention Program (8 CFR § 3221); and
- a Personal Protective Equipment Program (8 CFR § 3401-3411).

Protocol: The Operation Injury and Illness Prevention Plan, Emergency Action Plan, and Personal Protective Equipment Program shall be submitted to the Cal/OSHA Consultation Service for review and comment concerning compliance of the program with all applicable Safety Orders.

The Operation Fire Protection Plan and the Emergency Action Plan shall also be submitted by the project owner to the Alameda County Fire Department for review and acceptance.

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 Operations and Maintenance Safety & Health Program. It shall incorporate Cal/OSHA Consultation Service's comments, if any, stating that they have reviewed and accepted the specified elements of the proposed Operations and Maintenance Safety and Health Plan. The project owner shall provide a letter from the Alameda County Fire Department stating that they have reviewed and commented on the Operations Fire Protection and Prevention Plan and the Emergency Action Plan.

WORKER SAFETY–3 The project owner shall enter into an agreement with Alameda County for enhanced fire protection services. This agreement shall provide for the project owner to pay $2,500,000 for the relocation of Fire Station 8 and $500,000 for enhanced emergency response services.

Verification: At least thirty (30) days prior to the start of site preparation activities, the project owner shall submit to the CPM a copy of the final executed Agreement between Alameda County and the Project Owner.

D. HAZARDOUS MATERIALS MANAGEMENT

Public safety concerns may arise from the construction and operation of a proposed project such as the EAEC, especially with respect to the handling, transportation, and storage of hazardous materials. Therefore, the Commission examines each such power plant proposal to determine if the facility is designed to ensure the safe handling and storage of these materials. (Related issues are also addressed in the Waste Management, Worker Safety, and Traffic and Transportation portions of this Decision). A list of hazardous materials and a summary of special handling precautions to be used by Applicant may be found in the AFC. (Exs. 1, p. 5.4-1; 2, Table 8.12-3; as revised in 2B, Table HM-1.)

SUMMARY OF THE EVIDENCE

During project construction, hazardous materials to be used in relatively small quantities will include gasoline, diesel fuel, motor oil, hydraulic fluid, solvents, cleaners, sealants, welding flux, various lubricants, paint; and paint thinner. These materials will present no hazard for off-site consequences. (Ex. 1, p. 5.4-1/6-7; 10/16 RT 505:7-18.)

No acutely toxic hazardous materials will be used onsite during construction. None of the hazardous materials to be used during construction poses significant potential for off-site impacts due to the quantities on-site, their relative toxicity, and/or their environmental mobility. Therefore, we conclude that as to the construction phase, environmental impacts are likely to be less than significant. (Ex. 1, p. 5.4-6/7.)

The California Accidental Release Prevention Program (Cal-ARP) directs facility owners storing or handling acutely hazardous materials in reportable quantities, to develop a RMP.[73] (Health and Safety Code, § 25531.) RMP's must be submitted to appropriate

[73] The RMP 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

local authorities, the USEPA, and the designated local Administering Agency for review and approval. (Ex. 1, p. 5.4-2.)

If not for CEC jurisdiction, the Alameda County Environmental Management Department would be the issuing agency for the Consolidated Hazardous Materials Permit. The permit review and mitigation authority covers hazardous materials, hazardous waste, compressed gases and tiered treatment, the Hazardous Materials Business Plan, and the Risk Management Plan for anhydrous ammonia. (Ex. 1, p. 5.4-4.)

In regards to seismic safety issues, the site is located in Seismic Risk Zone 3. Therefore, Staff conducted an analysis of the codes and standards, which should be followed in adequately designing and building storage tanks, containment areas, and the natural gas pipeline in order to withstand a large earthquake. Staff notes that the proposed facility will be designed and constructed to the applicable standards of the:

- 1997 Uniform Building Code for Seismic Zone 3;
- 1998 California Building Code;
- CPUC General Order 112E;
- Title 49, California Code of Regulations, section 192; and
- Alameda County Building Code. (Ex. 1, pp. 5.4-4, 15.)

Applicant has proposed to store four hazardous materials at the EAEC in quantities exceeding the reportable quantity (RQ)[74] amounts defined in the California Health and Safety Code, section 25532 (j):

- anhydrous ammonia,
- sodium hydroxide,

---

indicated, and the accident history of the material. This new, recently developed program supersedes the California Risk Management and Prevention Plan (RMPP). (Ex. 1, p. 5.4-2.)

[74] Although not reportable, sodium hypochlorite will also be present in large quantities. Hydrochloric acid (HCl) will be present at the site in large quantities once every three to five years and at start-up, but is not stored on site. During the typical operating periods, HCl will be stored in quantities less than the RQ. (Ex. 1, p. 5.4-7.)

- sulfuric acid, and
- Hydrogen gas.[75] (Ex. 1, p. 5.4-1.)

Staff's and Applicant's analysis found that the use, the storage and the transportation of hazardous materials would result in no significant risk to the offsite public. (10/16 RT 504:7-9.)

Anhydrous Ammonia[76]

Anhydrous ammonia presents the greatest potential for off-site consequences because it will be stored on-site in two pressure vessel tanks, with a maximum of 10,200 gallons in each, at a relatively high vapor pressure.[77] Anhydrous ammonia has high internal energy when stored as a liquefied gas at elevated pressure; in an accidental release, its associated high internal energy could contribute to the formation of a gaseous cloud of anhydrous ammonia. Such an event would rapidly introduce large quantities to the ambient air where atmospheric transport could result in high down-wind concentrations.[78] (Ex. 1, p. 5.4-1/11.)

---

[75] Although no natural gas is stored, the EAEC project will involve the construction and operation of a natural gas pipeline and handling of large amounts of natural gas. Natural gas poses some risk of both fire and explosion. We find, however, that the risk of a fire and/or explosion on and off-site can be reduced to insignificant levels through adherence to applicable codes and development and implementation of effective safety management practices. Further, we find that only anhydrous ammonia and natural gas may pose a risk of off-site impacts. (Ex. 1, pp. 5.4-1/8-11; *see* **HAZ-6 & 7**.)

[76] Anhydrous ammonia has been identified by the USEPA as a hazardous material where special site security measures must be developed and implemented to ensure that unauthorized access is prevented. That agency published a Chemical Accident Prevention Alert regarding Site Security and a Chemical Safety Alert concerning precautions to take to prevent theft of anhydrous ammonia. Moreover, the U.S. Department of Justice published a special report on Chemical Facility Vulnerability Assessment Methodology. In order to ensure that the EAEC facility or a shipment of anhydrous ammonia is not the target of unauthorized access, e Staff' has proposed General Condition **COM-8**. Now adopted, it will require the project owner to prepare a Vulnerability Assessment and implement Site Security measures consistent with the above-referenced documents. (10/16 RT 511:23-516:21; Ex. 1, p. 5.4-16; 517:8-518:5.)

[77] Anhydrous ammonia is a gas at ambient temperature and therefore is stored under pressure. (Ex. 1, p. 5.4-11.)

[78] In an actual release, the resultant cooling of the ammonia in the tank due to reduced pressure and auto refrigeration would have the effect of lowering the temperature of the ammonia remaining in the containment vessel, limiting the ammonia release rate. However, pursuant to EPA and CAL ARP

Staff reviewed four "bench mark" concentration levels to assess the potential impacts associated with an accidental release of anhydrous ammonia:

- the lowest concentration posing a risk of lethality, or 2,000 PPM;
- the Immediately Dangerous to Life and Health (IDLH) level of 300 PPM;
- the Emergency Response Planning Guideline (ERPG) level 2 of 150 PPM, which is also the Risk Management Plan (RMP) level 1 criterion used by the U.S. Environmental Protection Agency (USEPA) and California; and
- the level considered by the Energy Commission staff to be without serious adverse effects on the public for a one-time exposure of 75PPM. (Ex. 1, p. 5.5-11.)

Staff evaluates the locations at which each of these benchmark concentration levels would be reached as part of its analysis of a potential release. Staff presumes a significant impact potential if an exposure at any public receptor associated with a postulated release exceeds 75 PPM. However, Staff may also conduct further analysis to refine its estimates and assess the probability of occurrence of the release and/or the nature of the potentially exposed population. Staff may, based on such analysis, ultimately determine that the likelihood and extent of potential exposure are not sufficient to support a finding of potentially significant impact.[79] (Ex. 1, p. 5.5-11.)

Applicant and Staff modeled the worst-case anhydrous ammonia release associated with a failure of the ammonia storage tanks so that it empties within 10 minutes.[80] Staff and Applicant conducted independent modeling, which demonstrated that off-site

---

guidelines, the worst-case off-site consequence analysis did not consider this mitigating effect and instead assessed a catastrophic release of the entire contents of the tank. (Ex. 1, p. 5.5-11.)

[79] Staff's detailed discussion of the exposure criteria considered and their applicability to different populations and exposure-specific conditions is provided in Appendix of the Hazard Materials Analysis. (Ex. 1, p. 5.5-26-29.)

[80] Staff and Applicant's alternative scenario analyzed a failure of a supply truck loading hose spilling a specified amount of anhydrous ammonia. In conducting these two analyses, it was assumed that spilled material would be contained in the covered basin below the storage vessel and below the tanker truck pad. In addition, the applicant assumed winds of 1.0 meter per second and atmospheric stability class F. The U.S. EPA SLAB air dispersion model was used to estimate airborne concentrations of ammonia. This model is designed to predict the maximum possible impacts based on distance from the storage tank without regard to specific direction of transport. (Ex. 1, p. 5.5-12.)

airborne concentrations of anhydrous ammonia would be above the CEC significance level (75 ppm), but only for a very short distance from the anhydrous ammonia storage tank or the facility fence line. (10/16 RT 507:14-508:10.)

Applicant estimated that a concentration of 75-PPM or greater would exist at a distance of 1,476 feet, an area which includes the open space (fields) to the east, south, and north of the facility, and slightly beyond Mountain House Road to the west of the facility. No sensitive receptor would experience this concentration unless working in the fields or driving past the facility at the precise time of the modeled catastrophic release. Staff found that the probability of a tank failure occurring at the same time farm workers are present, with low winds blowing in the direction of workers and F class atmospheric stability, is too low to be considered plausible. Mountain House Elementary School's (0.9 miles away) estimated airborne concentration was modeled at 10 PPM, a level that would not impact even sensitive people (such as asthmatic children) and which many people would not even smell. (Ex. 1, p. 5.5-12; 10/16 RT 523:3-525:3.)

Sodium Hydroxide

Sodium hydroxide is a strong base that is used in water treatment. It has a very low vapor pressure and therefore poses no risk of atmospheric transport off-site. Sodium hydroxide does pose a risk of soil and water contamination. However, it will be stored within an impervious secondary containment structure that will prevent such contamination. Staff concludes, and we concur, that EAEC's use of sodium hydroxide poses no risk of impacting surrounding populations in case of an accidental release. (Ex. 1, p. 5.4-7.)

Sulfuric acid

Sulfuric acid would not pose a risk of off-site impacts, because it has a relatively low vapor pressure and thus emissions from spills would be confined to the site. Because of public concern at another proposed energy facility in 1995, staff conducted a

quantitative assessment of the potential for impact associated with sulfuric acid use, storage, and transportation. Staff found no hazard would be posed to the public. However, should a fire occur in the immediate vicinity of the sulfuric acid tank, the potential exists for the tank to rupture and for sulfuric acid to become vaporized and migrate off-site. In order to protect against risk of fire causing such an accidental release, Staff has recommended an additional condition, which requires the project owner to ensure that no combustible or flammable materials would be stored or used within 100 feet of the sulfuric acid tank. (Ex. 1, p. 5.4-7/8; *see* **HAZ-5**.)

Hydrogen Gas

Hydrogen gas poses a risk of explosion, however, the amounts that will be present pose no risk of off-site blast effects because:

- Applicant has demonstrated that the proposed location for the hydrogen trailer would be about 75 feet from the combustion turbine generator of the eastern most generating unit;
- Our conditions will require storage of the hydrogen cylinders in an area isolated from combustion sources and away from potential damage of a turbine over speed event;
- tanks and piping that are near potential traffic hazards will be protected from vehicle impact by traffic barriers. (Exs. 1, p. 5.4-8; 2, Figure 8.12-1; **HAZ-11**.)

Transportation of Hazardous Materials

1. Applicant and Staff

Many hazardous materials including anhydrous ammonia, sulfuric acid, and sodium hypochlorite will be transported to the proposed EAEC via tanker truck. Staff concluded, based on their environmental mobility, toxicity, quantities transported, and frequency of delivery of the various chemicals, that:

- anhydrous ammonia poses the predominant transport risk; and
- risks associated with transportation of other hazardous materials do not significantly increase the risk of impact beyond that associated with transporting anhydrous ammonia. (Ex. 1, p. 5.5-12.)

If anhydrous ammonia were released from a delivery vehicle (i.e. a tanker truck) during transport, it could 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 cloud formed during the release. (Ex. 1, p. 5.5-12.)

On October 9, 2001, Applicant prepared a transportation risk analysis, which indicated that the risk associated with transportation of anhydrous ammonia to the EAEC would be insignificant. Staff agreed with Applicant's conclusion and focus on the surface streets within the project area after the delivery vehicle leaves the main highway. Likewise, Staff concluded that it is appropriate to rely on the extensive regulatory program that applies to shipment of hazardous materials on California highways, and driver competence, to ensure adequate safety and handling in transporting hazard materials. (Ex. 1, p. 5.5-13.)

Staff also evaluated the risk of impact associated with the transportation of anhydrous ammonia based on transport statistics developed by Davies and Lees (Lees 1996). Based on this data, the worst-case accident rate for transport by rural multi-lane undivided roads would be applicable to the EAEC project area. The maximum rate of accidental release per vehicle mile traveled on such roads is .36 in one million miles traveled (Lees 1996). The incidence of significant spillage per vehicle mile is estimated to be 1×10^{-7}(that is, one in every 10 million miles traveled). For vehicles transporting hazardous materials, about 10% of all accidents cause fatalities. Most of these fatalities occur in the immediate vicinity of the accident. Typically such fatalities are the result of injuries associated with the accident itself not accidental release of cargo. In fact, the average number of fatalities associated with release accidents is only 1% higher than the number of fatalities associated with accidents that did not result in release (Lees 1996). (10/16 RT 508:11-23; Ex. 1, p. 5.5-13.)

Most accidents involving significant release occur when the transport vehicle either leaves the road, overturns, or collides with a train. On average, there were about 10 fatalities per accident, regardless of release. However, as mentioned above, most of

these were the result of the accident rather than released materials. Based on differences between the number of fatalities in accidents with and without loss of cargo, Staff estimated that 1% of the average fatality rate is due to released materials and the rest are due to the physical injuries that occurred in the accident. Another estimate provided in (Lees 1996) is that for every 40 fatalities associated with hazardous materials transport one is due to release of the hazardous materials cargo. (10/16 RT 508:11-23; Ex. 1, p. 5.5-13.)

Further, the occurrence of fatalities and injuries as indicated by accident statistics does not imply that such impacts were on nearby populations. In fact, the population most often impacted by ammonia transport accidents is other road users. The potential for impacts on in-route populations near highways will be highly dependent on the proximity of in route populations at the accident location and on other factors present at the time of the accident, such as wind direction and potential for atmospheric dispersion. (Ex. 1, p. 5.5-13.)

Here, Staff found that the risk of impact (injury or fatality) to the populations along the transportation route would be at least one order of magnitude less than the risk of release by itself. Risk of impact is the product of release probability and concurrent probability of worst-case atmospheric dispersion conditions and presence of receptors in the area affected by hazardous concentrations. Staff has generally viewed risks with probabilities of less than 1 in 100,000 per year, for up to 10 potential fatalities, as insignificant. Based on the limited number of miles along the route that are in close proximity to proposed populated areas, Staff found that the potential risk per year of more that 10 fatalities associated with ammonia transportation for the EAEC project are well below 1 in 1,000,000 per year for in-route populations. (Ex. 1, p. 5.5-13/14.)

In addition, Staff addressed the potential effect of dense fog on the accident rate, a concern that was not adequately addressed in the available accident literature. Staff found that dense fog frequently occurs in the EAEC project area, and it has been associated with very serious accidents. (Ex. 1, p. 5.5-14.)

Staff concluded that:

- risks associated with transportation of anhydrous ammonia are insignificant during normal driving conditions;
- shipments should not occur when heavy fog is present on the delivery route because of the increased likelihood of an accident; and,
- involvement of an ammonia transport vehicle in such an accident could result in loss of cargo and that transport would potentially increase risk of impact to both in-route populations and road users.

Accordingly, Staff has proposed what we view as an appropriate condition, which will restrict delivery of when dense fog is present along the delivery route. (Ex. 1, p. 5.5-14; see Condition **HAZ-8**.)

Further, Staff evaluated the relative risk of transporting aqueous ammonia and anhydrous ammonia in light of the proposed development along Byron Bethany Road. Staff concluded that:

- aqueous ammonia use would likely increase the number of hazardous materials tanker truck vehicle miles traveled per year by more than three-fold;
- most fatalities associated with the transportation of hazardous materials such as ammonia are the result of the vehicular accident and not loss of cargo;
- risks of impact from the transportation of anhydrous ammonia are insignificant;
- it is readily feasible for the EAEC project to use aqueous ammonia;
- based exclusively on vehicle miles travel and number of trips taken, the use of aqueous ammonia arguably could possibly increase the risk to road users; and
- in the absence of a significant risk from the use of anhydrous ammonia at the proposed EAEC, Staff can find no basis for recommending a requirement based on transport risks to use aqueous ammonia. (10/16 RT 505:19-506:10; 508:11-510:25; 518:20-532:10; Ex. 1, p. 5.5-14.)

Applicant provided documentation in response to queries from Staff that the transportation route for the delivery of anhydrous ammonia to the EAEC site will be improved during the construction of the Mountain House Community. Road improvements will include

- road width expansion;
- adding left turn and merging lanes;

- adding raised medians; and,
- adding lanes in both directions. (Ex. 1, p. 5.4-14.)

Thus, the roads would be changed from the existing one-lane non-divided roads to a divided road with two lanes in each direction. Staff found that these road improvements greatly increase the safety of traffic flow and hence would significantly reduce the risk associated with transportation of hazardous materials to the proposed EAEC facility. (Ex. 1, p. 5.4-14.)

Applicant has detailed two routes for transportation of hazardous materials to the proposed EAEC, as follows:

- I-5 to I-205 to Grant Line Road to Byron Road to Mountain Home Road to the project; and
- I-5 to I-205 to Mountain House Parkway to Byron Road to Mountain Home Road to the project. (Ex. 1, pp. 5.4-14/15.)

Both of these routes would pass through the new Mountain House Community on Byron Road. The second route would also pass through the new community on Mountain House Parkway. Applicant also provided a detail description of the planned land uses along the route within the proposed Mountain House Community. Land uses along the route would include commercial and some residential, with most residences offset from the routes but within 1,000 feet. The closest school would be located just beyond 1,000 feet from the road. (Ex. 1, p. 5.4-15.)

To address the issue of tanker truck safety, Applicant and Staff have provided that anhydrous ammonia would be delivered to the EAEC facility:

- only in Department of Transportation certified Code MC-330 or MC-331 high integrity vehicles designed for hauling caustic materials under pressure such as anhydrous ammonia;
- with a design capacity of 7,500 gallons. (Ex. 1, p. 5.4-15; *see* Condition **HAZ-9**.)

Additionally, the project owner will be required to instruct vendors that only the CEC approved transportation routes are allowed. This requirement will also apply to the

transportation of hazardous wastes for disposal. Thus, no hazardous materials deliveries or hazardous waste transport will pass by the Mountain House School. (Ex. 1, p. 5.4-15; *see* Condition **HAZ-10**.)

2. Intervenor Sarvey[81]

Transportation of hazardous materials to the EAEC facility is of concern to the residents and workers in the surrounding community. In particular, Intervenor Sarvey and members of the public have expressed concern over emergency response times, security measures and the potential for an accident with off-site consequences involving a chemical spill during delivery. (Intervenor Sarvey Opening Brief on Phase Topics, pp. 6-9; Ex. 1, p. 5.4-12.)

Cumulative Impacts

Staff reviewed the potential for EAEC's operation combined with the existing Aqua Chlor facility located approximately seven miles from the project site. Staff concluded that the distance separating these facilities precludes the risk of both facilities effecting the same population. (Ex. 1, p. 5.4-16.)

COMMISSION DISCUSSION

Having reviewed the testimony, the Committee is persuaded that Applicant and Staff have fully addressed all of Intervenor Sarvey's concerns for public safety. The weight of the evidence demonstrates that Applicant and Staff have identified the regulatory body of plans and practices, which govern the transportation, storage and use of hazardous materials at the EAEC. In addition, Staff effectively addressed the public safety concerns raised by Intervenor Sarvey at our evidentiary hearings. Accordingly, we are satisfied that appropriate measures are in place to mitigate security, emergency

[81] CARE and Michael Boyd did not offer testimony in the area of Hazardous Materials. (10/16 RT 506:11-15.)

response and the transportation of hazards materials. We note that Intervenor Sarvey did not offer any evidence to contradict the findings of Staff and Applicant witnesses on these subjects. (10/16 RT 518:20-532:6; Applicant Opening Brief on Phase 1 Issues, p. 30.)

Staff has concluded that any potential adverse impacts from the transport of hazardous materials will be reduced to a level of insignificance through the Applicant's conformance with applicable LORS, reinforced by Staff's proposed mitigation. In addition, Staff believes that existing regulatory requirements are sufficient to reduce the risk of accidental release from the natural gas pipeline to insignificant levels. We concur. We conclude that as conditioned, the EAEC facility will cause no significant risk of offsite impacts.

FINDINGS AND CONCLUSIONS

Based on the evidence of record concerning the topic area of Hazardous Materials Management, we find and conclude as follows:

1. EAEC will use hazardous and acutely hazardous materials at the proposed EAEC facility.

2. The California Accidental Release Prevention Program (Cal-ARP) directs owners of facilities such as the EAEC that will store or handle acutely hazardous materials in reportable quantities, to develop a Risk Management Plan, which must be submitted to appropriate local authorities, the USEPA, and the designated local Administering Agency for review and approval.

3. The proposed EAEC and appurtenant facilities will be designed in accordance with applicable seismic area three codes and standards in order to withstand a large earthquake.

4. Hazardous materials (such as gasoline, diesel fuel, motor oil, hydraulic fluid, solvents, cleaners, sealants, welding flux, various lubricants, paint; and paint thinner) to be used during the construction phase of EAEC will pose a less than significant impact on the environment.

5. Acutely hazardous materials to be stored, handled and used in reportable quantities during the operation phase of EAEC include natural gas, anhydrous ammonia, sodium hydroxide, and sulfuric acid.

6. Staff conducted a quantitative assessment of the potential for impact associated with sulfuric acid use, storage, and transportation, and found that no hazard would be posed to the public.

7. The principal types of offsite potential public health and safety hazards associated with operational hazardous materials are the accidental release of ammonia gas, and fire and explosion from natural gas.

8. Applicant will store anhydrous ammonia on-site in two high-pressure vessel tanks each with a maximum allotment of 10,200 gallons.

9. A catastrophic release of anhydrous ammonia from on-site storage tanks would present an insignificant impact for off-site receptors.

10. EAEC's use of sodium hydroxide, sulfuric acid and hydrogen gas pose insignificant risks of impacting surrounding populations in case of an accidental release or explosion.

11. Many hazardous materials including anhydrous ammonia, sulfuric acid, and sodium hypochlorite will be transported to the proposed EAEC facility via tanker truck.

12. Risks associated with transportation of anhydrous ammonia and other hazardous materials to the EAEC site are insignificant.

13. The mitigation measures incorporated in the Conditions of Certification below will ensure that risks to public health and safety from hazardous materials are reduced to an insignificant level.

14. The proposed project will not contribute to a cumulative risk to the public health and safety.

15. Implementation of the Conditions of Certification below will ensure that the proposed project will comply with the laws, ordinances, regulations, and standards related to hazardous materials management as specified in the appropriate portion of Appendix A of this Decision.

We therefore conclude that the EAEC's use of hazardous materials will not create or contribute to any significant adverse public health and safety impacts from the handling or storage of hazardous materials.

CONDITIONS OF CERTIFICATION

HAZ-1 The project owner shall not use any hazardous material not listed in Appendix C, below, or in greater quantities than those identified by chemical name in Appendix C, below, unless approved in advance by the CPM.

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

HAZ-2 The project owner shall concurrently provide a Business Plan (BP) and a Risk Management Plan (RMP) to the Certified Unified Program Authority - CUPA (Alameda County Environmental Management Department) and the CPM for review at the time the RMP is first submitted to the U.S. Environmental Protection Agency (EPA). The project owner shall include in the Business Plan all hazardous materials at the site and at lineal facilities and shall reflect all recommendations of the CUPA and the CPM in the final BP and RMP documents. Copies of the final Business Plan and RMP, reflecting all comments, shall be provided to the CPM.

Verification: At least sixty (60) days prior to receiving any hazardous material on the site, the project owner shall provide a copy of a final Business Plan to the CPM. At least 60 days prior to delivery of ammonia to the site, the project owner shall provide the final EPA-approved RMP to the CUPA and the CPM.

HAZ-3 The project owner shall develop and implement a Safety Management Plan for delivery of ammonia. The plan shall include procedures, protective equipment requirements, training, and a checklist. It shall also include a section describing all measures to be implemented to prevent mixing of ammonia with incompatible hazardous materials.

Verification: At least sixty (60) days prior to the delivery of ammonia to the facility, the project owner shall provide a safety management plan as described above to the CPM for review and approval.

HAZ-4 The ammonia storage facility shall be designed to either the ASME Pressure Vessel Code (ANSI K61.6) or to API 620. In either case, a secondary containment basin capable of holding the storage volume of the largest tank plus the volume associated with 24 hours of rain assuming the 25-year storm. The final design drawings and specifications for the ammonia storage tank and secondary containment basins shall be submitted to the CPM.

Verification: At least sixty (60) days prior to delivery of ammonia to the facility, the project owner shall submit final design drawings and specifications for the ammonia storage tank and secondary containment basin to the CPM for review and approval.

HAZ-5 The project owner shall ensure that no combustible or flammable material is stored within 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 locations where combustible or flammable materials will be stored.

HAZ-6 The project owner shall require that the gas pipeline undergo a complete design review and detailed inspection after 30 years and every 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 plan to accomplish full and comprehensive pipeline design reviews in the future to the CMP for review and approval. This plan shall be amended, as appropriate, and submitted to the CPM for review and approval, not later than one year before the plan is implemented.

HAZ-7 After any significant seismic event in the area where surface rupture occurs within one mile of the pipeline, the gas pipeline shall be inspected by the project owner.

Verification: At least thirty (30) days prior to the initial flow of gas in the pipeline, the project owner shall provide a detailed plan to accomplish a full and comprehensive pipeline inspection in the event of a significant earthquake to the CMP for review and approval. This plan shall be amended, as appropriate, and submitted to the CPM for review and approval, at least every five years.

HAZ-8 The project owner shall direct all vendors delivering ammonia to the site during the months of November through April to verify that fog conditions do not exist along state roads used for the delivery by calling the CALTRANS Highway Information Network prior to commencing delivery. If fog conditions exist, then delivery of anhydrous ammonia to the site shall be postponed until such time that the fog conditions have abated

Verification: At least sixty (60) days prior to receipt of ammonia on-site, the project owner shall submit to the CPM for review and approval, a copy of the letter to be mailed to the vendors. The letter shall state the required policy for verification of road conditions.

HAZ-9 The project owner shall direct all vendors delivering ammonia to the site to use only tanker truck transport vehicles, which meet or exceed the specifications of DOT Code applicable to the type of ammonia used.

Verification: At least sixty (60) days prior to receipt of 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-10 The project owner shall direct all vendors delivering any hazardous material to, or hazardous wastes away from, the site to use only the routes approved by the CPM (Interstate 205 to Mountain House Parkway or I-205 to Grant

Line Road, and then to the Byron Bethany road to Mountain House Road to the facility). An alternate route may be used following approval by the CPM.

Verification: At least sixty (60) days prior to receipt of any hazardous materials on site, the project owner shall submit to the CPM for review and approval, a copy of the letter to be mailed to the vendors. The letter shall state the required transportation route limitation.

HAZ-11 The project owner shall ensure that the hydrogen gas storage cylinders are stored in an area out of area potentially affected by a turbine over-speed accident and that no combustible or flammable material is stored within 50 feet of the hydrogen cylinders.

Verification: At least sixty (60) days prior to receipt of hydrogen gas on-site, the project owner shall provide copies of the facility design drawings showing the location of the hydrogen gas cylinders and the locations where combustible or flammable materials will be stored.

HAZ-12 The project owner shall ensure that whenever the HRSG is cleaned with hydrochloric acid (HCl), a temporary berm shall be erected around the HCl storage vessel limiting the area of a spill to the smallest possible.

Verification: At least sixty (60) days prior to the initial receipt of HCl on site, the project owner shall provide copies of the temporary berm design drawings to the CPM for review and approval.

E. WASTE MANAGEMENT

In this subject area the Applicant and Staff witnesses presented assessments of issues associated with managing wastes generated from constructing and operating the proposed East Altamont Energy Center. These assessments evaluated the proposed waste management plans and mitigation measures designed to reduce the risks and environmental impacts associated with handling, storing, and disposing of project-related hazardous and nonhazardous wastes generated during facility construction and operation.

Summary of the Evidence

Applicant's witness in his testimony described the project setting and the types and quantities of wastes that would be generated during EAEC's construction and operation. To assess the potential for contamination and contaminated wastes to be generated prior to construction at the proposed site, the project owner commissioned a Phase I Environmental Site Assessment (ESA), in accordance with the ASTM Standard E 1527, Standard Practice for Environmental Site Assessments. The Phase I ESA was conducted on the entire 174-acre parcel of land under Applicant's control. The Phase I ESA revealed the following environmental conditions in the southwest corner of the 174-acre parcel resulting from present or past activities:

- the residence and barn at the southwest corner of the property contained typical farm equipment and chemicals;
- pesticide containers were present in the former chicken coop. It is not known if releases of hazardous substances are present in the vicinity of the chicken coop;
- releases of petroleum and lubricant products in the main yard equipment staging areas, near the lubricant dispensing stand and forklift parking area, and near the aboveground waste oil storage tanks; and
- an underground storage tank was removed from the site approximately 10 years ago. No documentation is available regarding the removal of the tank, the condition of the tank at the time of removal, or the potential presence of petroleum products or hazardous substances associated with gasoline. (Ex. 3K.)

The Phase I ESA did not identify any environmental issues within the approximately 40-acre portion of the 174-acre parcel upon which the East Altamont Energy Center will be located). (Ex. 3K, 2.14-2.)

Staff's testimony noted that the Applicant's waste management plan for the proposed EAEC will allow:

- compliance with LORS designed to minimize the potential for human health and environmental effects;
- will not cause a significant direct, or indirect, cumulative adverse impact; and
- compliance with Conditions **WASTE-1** and **WASTE-2** will ensure that if contaminated soils are encountered during construction, adequate measures are in place to properly manage wastes. (Ex. 1, p. 5.4-1/8.)

Construction Wastes

The types of hazardous wastes normally generated during construction include waste lubricating oil, cleaning solvents, paints, batteries, oily rags and absorbent, and welding materials. Additional wastes such as concrete and contaminated soil will be generated during demolition and removal of existing foundations. Applicant has provided a list of the types and quantities of wastes that may be generated during construction, as well as the proposed management method for each. All hazardous wastes generated during construction will be recycled or disposed of in a licensed hazardous waste treatment or disposal facility. (Exs. 1, p. 5.13-3/4; 2, Table 8.13-2.)

Hazardous wastes generated during facility operation include spent air pollution control catalyst, used oil, paint and thinner waste, batteries, cooling tower sludge, solvents, and turbine washwater. Applicant has provided a list of the types and quantities of hazardous wastes generated during operation of the facility, as well as the proposed management method for each (Exs. 1, p. 5.13-4; 2, Table 8.13-1).

Some of the hazardous wastes can be recycled, such as used oil, solvents, batteries, and the spent SCR catalyst. All hazardous wastes generated during construction and operation will be managed in accordance with federal and state laws and regulations.

The wastes will be properly characterized, and transported offsite to approved treatment, storage, or disposal facilities by licensed hazardous waste haulers. To help ensure the use of appropriate hazardous waste disposal facilities, Staff has proposed conditions **WASTE-3** and **WASTE-4**, which require the project owner:

- to obtain a hazardous waste generator number from the Department of Toxic Substances Control; and
- to notify Staff of any known enforcement actions against hazardous waste facilities or companies used for project wastes. (Ex. 1, p. 5.13-7.)

Staff concluded that there would be no significant impacts to the public or the environment from disposal of project-related hazardous wastes, because the Applicant's program for waste management will comply with all applicable LORS. Since final facility design and operational procedures may impact the amounts and types of wastes ultimately generated, the project owner will be required to submit waste management plans for construction and operation to Staff under Condition **WASTE-5**.

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, the Committee finds as follows:

1. The project will generate hazardous and non-hazardous wastes during construction and operation.
2. The Phase I ESA did not identify any environmental issues within the project boundary (i.e., the approximately 40 acre portion of the 174-acre parcel upon which the EAEC will be located). However, Conditions of Certification **WASTE-1** and **-2** ensure that should any contaminated soil be discovered during construction, it will be removed in accordance with applicable LORS.
3. The project will comply with all applicable laws, ordinances, regulations, and standards and wastes generated during construction and operation of the proposed project will be managed in an environmentally safe manner.
4. The management of all project wastes will comply with all applicable LORS.
5. Disposal of EAEC project wastes will not result in significant adverse impacts to existing waste disposal facilities.
6. The Conditions of Certification set forth below and waste management practices detailed in the Application for Certification will reduce all potential waste management impacts to a level of insignificance.

We therefore concludes that implementation of the Conditions of Certification below will not result in any significant adverse impacts from the management of wastes generated during construction and operation of the EAEC. We further conclude that the project will conform with all LORS relating to waste management in the pertinent portions as identified in Appendix A.

CONDITIONS OF CERTIFICATION

WASTE-1 The project owner shall provide the resume of a Registered Professional Engineer or Geologist, who shall be available for consultation during soil excavation and grading activities, to the Compliance Project Manager (CPM) for review and approval. The resume shall show experience in remedial investigation and feasibility studies.

The Registered Professional Engineer or Geologist shall be given full authority to oversee any earth moving activities that have the potential to disturb contaminated soil.

Verification: At least thirty (30) days prior to the start of site mobilization the project owner shall submit the resume to the CPM.

WASTE-2 If potentially contaminated soil is unearthed during excavation at either the proposed site or linear facilities as evidenced by discoloration, odor, detection by handheld instruments, or other signs, the Registered Professional Engineer or Geologist shall inspect the site, determine the need for sampling to confirm the nature and extent of contamination, and file a written report to the project owner and CPM stating the recommended course of action.

Depending on the nature and extent of contamination, the Registered Professional Engineer or Geologist shall have the authority to temporarily suspend construction activity at that location for the protection of workers or the public. If, in the opinion of the Registered Professional Engineer or Geologist, significant remediation may be required, the project owner shall contact representatives of the San Francisco Regional Water Quality Control Board, the Alameda County Department of Environmental Health, and the Regional Office of the California Department of Toxic Substances Control for guidance and possible oversight.

Verification: The project owner shall submit any reports filed by the Registered Professional Engineer or Geologist to the CPM within five (5) days of their receipt. The project owner shall notify the CPM within 24 hours of any orders issued to halt construction.

WASTE-3 The project owner shall obtain a hazardous waste generator identification number from the Department of Toxic Substances Control prior to generating any hazardous waste.

Verification: The project owner shall keep its copy of the identification number on file at the project site and notify the CPM via the Monthly Compliance Report of its receipt.

WASTE-4 Upon becoming aware of any impending waste management-related enforcement action by any local, state, or federal authority, the project owner shall notify the CPM of any such action taken or proposed to be taken against the project itself, or against any waste hauler or disposal facility or treatment operator with which the owner contracts.

Verification: The project owner shall notify the CPM in writing within ten (10) days of becoming aware of an impending enforcement action. The CPM shall notify the project owner of any changes that will be required in the manner in which project-related wastes are managed.

WASTE-5 The project owner shall prepare a Construction Waste Management Plan and an Operation Waste Management Plan for all wastes generated during construction and operation of the facility, respectively, and shall submit both plans to the CPM for review and approval. The plans shall contain, at a minimum, the following:

- A description of all waste streams, including projections of frequency, amounts generated and hazard classifications; and
- Methods of managing each waste, including treatment methods and companies contracted with for treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/reduction plans.

Verification: No less than thirty (30) days prior to the start of site mobilization, the project owner shall submit the Construction Waste Management Plan to the CPM.

The operation waste management plan shall be submitted no less than thirty (30) days prior to the start of project operation. The project owner shall submit any required revisions within twenty (20) days of notification by the CPM.

In the Annual Compliance Reports, the project owner shall document the actual waste management methods used during the year compared to the planned management methods.

VI. ENVIRONMENTAL ASSESSMENT

As part of its statutory mandate, the Commission must analyze a project's potential effect upon various elements of the human and natural environments. This analysis is a joint environmental document with the Western Area Power Administration (WAPA), which is mandated to review the EAEC according to the National Environmental Department of Energy (DOE) Floodplain/Wetland regulations. (Title 10, CFR, § 1022; & Executive Orders 11988 & 1990; Ex. 1, p. 5.2-1.)

As the lead federal agency, WAPA prepared the Biological Assessment, which considered the effects of the proposed project on federally protected species. Western determined that the proposed action will not affect any of the listed invertebrates, fish species, reptiles, the riparian woodrat or the riparian brush rabbit or designated Critical Habitat. (Ex. 1, p. 5.2-11 citing 50 CFR 402.14(b); **Biological Resource Table 1**, below.)

WAPA also determined that the proposed project may affect, but is unlikely to adversely affect, the bald eagle and mountain plover. Western's determination was based on discountable or insignificant effects due to the lack of habitat and evidence of usage of the project area by these birds. Staff concurs with WAPA's determination of no impact to riparian woodrat, riparian brush rabbit, and bald eagle. Staff found that the proposed project may adversely affect the California red-legged frog and the San Joaquin kit fox, and the California tiger salamander, a Candidate species, which would probably be affected by any actions that would affect the red-legged frog. (Ex. 1, p. 5.2-11.)

A. BIOLOGICAL RESOURCES

Our examination of biological resources focuses upon impacts to state and federally listed species, species of special concern, wetlands, and other areas of

critical biological interest in the project vicinity. Here we summarize the potential biological resources impacts due to the project and its related facilities, and address the adequacy of mitigation measures necessary to reduce any identified impacts to less than significant levels.

SUMMARY OF THE EVIDENCE

1. Local Setting

EAEC's project area is located east of the Altamont Hills at an elevation 40 feet above mean sea level. The Altamont Hills and surrounding mountain ranges provide important habitats for a diversity of species. Applicant's summary of special species that may potentially occur on-site and be adversely impacted by EAEC construction, operation, and maintenance is identified below. (Ex. 1, p. 5.2-1 & **Table 1**.)

The entire 174-acre project site has been heavily disturbed and cultivated over many decades, and does not support populations (or individuals) of special status plant species. However, the project site lies close to natural areas where some special status species may persist. (Ex. 1, p. 5.2-10.)

For example, many sensitive plant species are endemic to the vernal pool habitats or wetlands that are located south and west of the EAEC site, near the corner of Kelso and Bruns roads. Thus, impacts to these habitats and species must be avoided if project activities occur in these areas. Likewise, sensitive plant species have not been recorded on-site, and it is unlikely that any populations potentially persisting in the area will be significantly impacted by the proposed project's facilities. However, plant species such as big tarplant and showy Indian clover may grow along grassland portions of project linear features. (Ex. 1, p. 5.2-10; **Table 1**, below.)[82]

---

[82] **Table 1** lists 14 special-status plant species that may occur within the vicinity of the project site but many occur in habitat conditions (i.e. vernal pools, wetlands) that are not present on-site.

Biological surveys on the project site detected none of the special status species listed in **Table 1**. However, there is the potential for the special status species to occur within the project site because the EAEC property, and vicinity, provides foraging and dispersal habitats in an area that has become increasingly fragmented by human development. The U.S. Fish and Wildlife Service (USFWS) directed Applicant to assume a local presence of the federally endangered San Joaquin kit fox and to mitigate for habitat loss. There are other special status wildlife species, such as raptors, shorebirds, and songbirds that would benefit from the habitat mitigation established for the San Joaquin kit fox. (Ex. 1, p. 5.2-10.)

The California Department of Fish and Game (CDFG) identified a potential for the presence of sensitive species and natural communities not mentioned in the AFC. These include the:

- loggerhead shrike,
- golden eagle,
- vernal pool fairy shrimp,
- rose mallow,
- Mason's lilaeopsis, and
- valley sink scrub plant community.

These species and communities were evaluated and will be protected if nests, individuals, or habitats are found in areas impacted by EAEC facilities or linears. (Ex. 1, p. 5.2-8.)

Surveys for special-status plants confirmed that none of the species was growing on the 174-acre project site or within the 43.5-acre area proposed to contain the power plant. Long-term human management for intensive agriculture in the region has eliminated many of the local environmental conditions required for survival by these special-status plant species. (Ex. 1, p. 5.2-8.)

BIOLOGICAL RESOURCES Table 1
Resources Sensitive Species Potentially Occurring In the EAEC Project Area

Common Name	Scientific Name	Status
Plants		
Ferris' milkvetch	*Astragalus tener var ferrisiae*	FSC/1B
Alkali milkvetch	*Astragalus tener var. tener*	FSC/1B
Heartscale	*Atriplex cordulata*	FSC/1B
Brittlescale	*Atriplex depressa*	--/1B
San Joaquin saltbrush	*Atriplex joaquiniana*	FSC/1B
Big tarplant	*Blepharizonia plumosa ssp. plumosa*	--/1B
Hispid bird's-beak	*Cordylanthus mollis ssp. hispidus*	--/1B
Palmate-bracted bird's- beak	*Cordylanthus palmatus*	FE/SE/1B
Recurved larkspur	*Delphinium recurvatum*	--/1B
Diamond-petaled Calif.poppy	*Eschscholzia rhombipetala*	--/1B
Rose mallow	*Hibiscus lasiocarpus*	--/2
Mason's lilaeopsis	*Lilaeopsis masonii*	--/1B
Showy madia	*Madia radiata*	--/1B
Rayless ragwort	*Senecio aphanactis*	--/2
Showy Indian clover	*Trifolium amoenum*	FE/-
Caper- fruited tropidocarpum	*Tropidocarpum capparideum*	FSC/1A
Insects and Crustacea		
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT/-
Longhorn fairy shrimp	*Branchianecta longiantenna*	FE/
Vernal pool fairy shrimp	*Branchianecta lynchi*	FT/
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT/
Mammals		
San Joaquin pocket mouse	*Perognathus inornatus inornatus*	FSC/--
San Joaquin kit fox	*Vulpes macrotis mutica*	FE/ST
Riparian woodrat	*Neotoma fuscipes riparia*	FE/SSC
Riparian brush rabbit	*Sylvilagus bachmani riparius*	FE/SE
Reptiles and Amphibians		
California red-legged frog	*Rana aurora draytonii*	FT/--
Western pond turtle	*Clemmys marmorata*	FSC/SSC
California tiger salamander	*Ambystoma californiense*	FC/SSC
Fish		
Sacramento River winter-run chinook	*Oncorhynchus tshawytscha*	FE/SE
Central Valley spring-run chinook	*Oncorhynchus* tshawytscha	FT/ST
Central Valley steelhead	*Oncorhynchus mykiss*	FT/SSC
Delta smelt	*Hypomesus transpacificus*	FT/ST
Critical habitat for the delta smelt		
Sacramento splittail	*Pogonichthys macrolepidotus*	FT/SSC
Central Valley fall/late fall run chinook	*Oncorhynchus. tshawytscha*	FC/--
Birds		
Bald eagle	*Haliaeetus leucocephalus*	FT/SE/SFP
Golden eagle	*Aquila chrysaetos*	SFP/SSC
White-tailed kite	*Elanus leucurus*	--/SFP
Swainson's hawk	*Buteo swainsoni*	--/ST
Burrowing owl	*Athene cunicularia*	FSC/SSC
Short-eared owl	*Asio flammeus*	--/SSC
Northern harrier	*Circus cyanneus*	--/SSC
Loggerhead shrike	*Lanius ludovicianus*	-/SSC

California horned lark	*Eremophila alpestris actia*	--/SSC
Tricolored blackbird	*Agelaius tricolor*	FSC/SSC
Mountain plover	*Charadrius montanus*	FPT/SC

NOTES: FE = Federally listed as endangered. FT = Federally listed as threatened. FPE = Proposed endangered. FPT = Proposed threatened. FC = Candidate for listing as federal threatened or endangered. Proposed rules have not yet been issued because they have been precluded at present by other listing activity. FSC = Species of Special Concern threatened. SE = Species whose continued existence in California is jeopardized. ST = Species that although not presently threatened in California with extinction, is likely to become endangered in the foreseeable future. SC=State candidate for listing as threatened or endangered. SSC = California Department of Fish and Game Species of Special Concern (species with declining populations in California). SFP = Fully protected against take pursuant to the Fish and Game Code Section 3503.5. -- = No California or federal status. CNPS = California Native Plant Society Listing (does not apply to wildlife species). 1A = Plants presumed extinct in California. 1B = Plants, rare, threatened or endangered in California and elsewhere and are rare throughout their range. According to CNPS, all of the plants constituting List 1B meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection) of the California Department of Fish and Game Code and are eligible for state listing.

Source: (Ex. 1, pp. 5.2-8/9.)

Agricultural crops dominate the EAEC project site, while the surrounding areas are characterized by increasing levels of urban development. The proposed power plant will require approximately 43.5 acres within the 174-acre project site, which is rectangular, and bordered by irrigation ditches along the eastern and southern boundaries.[83] The ditch along the east side provides a corridor less than 5 feet wide of wetland vegetation. (Ex. 1, p. 5.2-5.)

Until recently, the parcel was used for agriculture, particularly crops such as alfalfa, which can be beneficial to wildlife. In general, the vegetative communities on the project site are classified as agricultural and/or ruderal, and the endemic natural plant and animal communities have been permanently altered, reduced, fragmented, and/or extirpated over the past decades.In addition, the San Joaquin Valley's agricultural landscape also provides open space, foraging, denning, and nesting habitats for wildlife. The agricultural products of the area include: alfalfa fields, hay, row crops, orchards, annual grasslands, cattle pasture, and dairies. (Ex. 1, p. 5.2-5.)

General habitats potentially affected by the proposed EAEC include annual grassland, alkaline meadows, emergent marsh, and riparian shrub, as well as

[83] The project site is also surrounded on three sides by paved 2-lane highways. A small residential area is located on adjacent lands to the south. (Ex. 1, p. 5.2-5.)

agricultural crops and irrigation ditches. The loss of natural and agricultural lands to housing and industrial uses has accelerated in recent years and it has become increasingly important to protect open space and habitats in the region. (Ex. 1, p. 5.2-5.)

Wetlands are sensitive habitats characterized by many uniquely adapted plant and animal communities.[84] EAEC will be avoiding these areas in most instances. If there are wetlands that cannot be avoided, specific permits would be required from the CDFG, and the U.S. Army Corps of Engineers (USACOE). Wetland review will also be required through WAPA per DOE Floodplain/Wetland review requirements. (Title 10, CFR § 1022; Ex. 1, p. 5.2-6.)

Vernal pools form on the surface above an impermeable soil layer such as a hardpan, claypan, or volcanic basalt. Vernal pool communities support highly co-evolved plants and animals that are endemic to these seasonally flooded depressions. In California, vernal pool communities have come under increasing pressures from human conversion of lands for urban uses. Endemic to vernal pools are many plants and animals such as fairy shrimp; there are 25 species of fairy shrimp in California, five of which have special status as threatened or endangered largely due to habitat destruction. The vernal pool fairy shrimp is a federally threatened species that potentially inhabits vernal pools near the proposed EAEC. (Ex. 1, p. 5.2-6.)

In addition, vernal pools commonly have low-growing and sparse plant cover around them that provide attractive hunting and breeding habitats for many species of wildlife, including the San Joaquin kit fox and burrowing owl. Vernal pool habitats are found in the project region but are not found on the EAEC project site. For example, the closest alkaline meadow habitat is located

---

[84] Federal and state laws provide special protection for wetlands because of their rarity and historic losses resulting from draining and filling, and because they provide a variety of valuable ecosystem benefits such as groundwater recharge, flood buffering, soil retention, and wildlife habitat. Wetlands are classified according to their soils, hydrology, and associated plant species. Emergent freshwater marshes exist south, west, and east of the project site. (Ex. 1, p. 5.2-5.)

northeast of the intersection of Bruns and Kelso roads, approximately 1 mile west of the project site. Applicant proposes to avoid vernal pool habitats completely. (Ex. 1, p. 5.2-6.)

California red-legged frog's Designated Core Habitat exists less than five miles south and southwest of the EAEC project site. The proposed project will avoid significant direct impacts to this protected habitat area. Applicant must avoid indirect and cumulative impacts caused by water use, degradation of connected riparian areas and drainages, and general habitat fragmentation in the area which may impact the local population.

Riparian habitats provide nesting, hunting, and roosting areas for diverse animal species and provide habitat for native plants. It is estimated that at least 90% of California's original riparian habitat has been removed and/or degraded by human activities, thus underscoring the importance of protecting and/or restoring remaining riparian habitats. Riparian habitat does not occur on the EAEC project site, but it is present in the vicinity. The EAEC project region contains riparian communities to the south, west, and east of the project site; a small area (0.2 acre) of willows, oaks, and non-native giant cane *(Arundo dona*x) exists where Mountain House Creek crosses Byron Bethany Road from southwest to northeast. EAEC will avoid or minimize impacts to riparian habitats.

In May and August 2001 and March 2002, Staff visited the proposed EAEC site project site and found its vegetation was fallow and tilled, although within the past 5 years the site has been used to cultivate oat-hay, alfalfa, tomatoes, and lima beans. No natural drainages or ponds exist on the EAEC project site, but there are agricultural drainage ditches along the southern and eastern borders. (Ex. 1, p. 5.2-6.)

Locally common and abundant wildlife species are important components of the ecosystem. Due to habitat loss, many of these species must continually adapt to

using agricultural, ruderal, and ornamental vegetation for cover, foraging, dispersal, and nesting. (Ex. 1, p. 5.2-7.)

Wildlife populations in the project area, both common and rare, are supported by agricultural and ruderal vegetation. For example, some commonly observed wildlife species may include:

- California ground squirrel (*Spermophilus beecheyi*);
- California vole (*Microtus californicus*);
- coyote (*Canis latrans*);
- raccoon (*Procyon lotor*);
- opossum (*Didelphis virginiana*);
- striped skunk (*Mephitis mephitis*);
- badger (*Taxidea taxus*);
- red-tailed hawk (*Buteo jamaicensis*);
- northern harrier (*Circus cyaneus*);
- American kestrel (*Falco sparverius*);
- white-tailed kite *(Elanus leucurus*);
- great-horned owl (*Bubo virginianus*);
- barn owl (*Tyto alba*);
- turkey vulture (*Cathartes aura*);
- American killdeer (*Charadrius vociferus*);
- long-billed curlew (*Numenius americanus*);
- gopher snake (*Pituophis melanoleucus*);
- garter snake (*Thamnophis* species);
- western fence lizard (*Sceloporus occidentalis*),
- many native insect species; and
- several variety of bat species.[85] (Ex. 1, p. 5.2-7.)

[85] Bats often feed on insects as they fly over agricultural and natural areas, and all bat species are state species of special concern. (Ex. 1, p. 5.2-7.)

2. Direct Impacts

If constructed, the EAEC would result in the permanent removal of approximately 43.5 acres of prime agricultural land that also provides wildlife habitat. The construction laydown area, natural gas, water supply pipelines, and transmission lines would also result in temporary habitat losses, which may impact special status species. Habitat acreage that the proposed EAEC will permanently and temporarily impact is summarized below. (Ex. 1, p. 5.2-10; **Table 2 below**.)

BIOLOGICAL RESOURCES Table 2
Acreage Impacts

	Permanent Impacts (acres)	Temporary Impacts (acres)*
Power plant footprint	43.5	0
Construction laydown areas	0	29.1
Transmission tower footprints	0.5	0
Transmission line	N/A	N/A
Fiber optic cable installation	0	50 ft. x 1000ft. Right-of-Way
Raw water pipeline (Route 3E)**	0	2.2
Water supply pump at Canal 45	0.2	0
Recycled water supply pipeline		4.6 miles x 75 feet within a highly disturbed Right-of-Way
Natural gas pipeline (new preferred route) including meter station	0.5	8.2
Total	44.7	39.5 (excluding Rights-of-Way)

*If the Right of Way is no longer graded and disked (highly disturbed) at the time of installation of the recycled water pipeline, biological surveys and mitigation for temporary impacts may be required in consultation with the USFWS and CDFG.

Source: (Ex. 1, p. 5.2-10.)

Staff found that the project area:

- constitutes important, occupied habitat for the dispersal, cover, foraging, and denning activities of the San Joaquin kit fox;
- the project linears follow road berms, rights-of-way, and levees that may be suitable for kit fox dens;
- these adverse impacts to the San Joaquin kit fox will be mitigated through the Biological Opinion, resulting from the section 7 consultation process between the USFWS and Western and

- CDFG participation in the consultation process will provide a Consistency Determination for the San Joaquin kit fox because it is also a state listed species.[86] (Ex. 1, p. 5.2-12/13.)

Staff concluded that the proposed project would remove or degrade habitats that are essential to the survival of the San Joaquin kit fox that will require habitat mitigation. (Ex. 1, p. 5.2-12.)

In addition, Staff found that the EAEC project could potentially create significant impacts for certain special status species without:

- avoidance of sensitive habitats; and
- the implementation of mitigation measures. (Ex. 1, p. 5.2-13/18.)

These species include the:

- California red-legged frog;
- California tiger salamander;
- Swainson's hawk;
- Western pond turtle;
- Burrowing owl;
- Golden eagle;
- White-tailed Kite;
- Short-eared owl;
- Northern harrier;
- Loggerhead shrike;
- California horned-lark;
- Tricolored blackbird;
- Mountain Plover; and
- Bats. (Ex. 1, p. 5.2-14.)

---

[86] Title 16, U.S. Code, § 1531 et seq., and Title 50, CFR, part 17.1 et seq., designate and provide for protection of threatened and endangered plant and animal species, and their critical habitat. Section 7 requires a consultation with the USFWS if a "take" may result during lawful project activities. WAPA was the lead agency in requesting the consultation. Unlike here, if no federal nexus exists for a project, a Section 10, Habitat Conservation Plan (HCP) may be required. (Ex. 1, p. 5.2-2.)

As to the foregoing species, they are known to inhabit the project vicinity. However, the proposed EAEC project will not significantly impact essential portions of their habitat or geographic range because no known nests or actively occupied territories were found for these species in the project area.[87] (Ex. 1, p. 5.2-13/14.)

Staff concluded that the following species will not be impacted (no Impacts or less than significant impacts) by the proposed project:

- the San Joaquin Pocket Mouse;
- the Delta's is critical habitat for many declining or endangered fish species, such as winter run chinook, delta smelt, and Sacramento splittail; and
- the Delta's habitats and population for fish of importance to sport fishermen. (Ex. 1, p. 5.2-18.)

The National Marine Fisheries Service (NMFS) has indicated to Staff that according to their review of the most up-to-date project information, the proposed EAEC would not result in significant adverse impacts to Delta fish.[88] Based on the available data and the EAEC's proposed water usage, Staff concurs with the NMFS determination of no significant impacts to special status Delta fish species. (Ex. 1, p. 5.2-19.)

Construction activities have the potential to disrupt and disturb foraging, nesting, and survival of sensitive animal and plant species. General impacts from construction which must be minimized or eliminated, include:

- dust and air pollution;
- erosion and water degradation;

---

[87] Staff found that the impacts to foraging or nesting habitat might be significant in a cumulative manner, due to the rapid urbanization occurring in the project region. In cases of habitat loss, Staff seeks to minimize impacts to all special status species consequently species in this category would benefit from habitat compensation mitigation provided for impacts to San Joaquin kit fox. (Ex. 1, p. 5.2-13/14.)

[88] As part of WAPA's section 7 consultation with the NMFS, NMFS evaluated the following species for impacts: the federally endangered Sacramento River winter-run chinook salmon

- excess noise; and
- damage or mortality of sensitive biological resources.[89] (Ex. 1, p. 5.2-21.)

Construction of the generating facility and linears will result in permanent loss of approximately 45 acres of habitat (43.5-acre power plant footprint including landscaping) as well as temporary disturbances to approximately 40 acres of habitat. The proposed construction laydown area will be compacted and overlain with a layer of gravel or other material. Upon completion of laydown, the site will be returned to agricultural use or restored as natural vegetation using plants approved by the CEC in consultation with the USFWS, WAPA, and CDFG. (Ex. 1, p. 5.2-21.)

Temporary disturbances will result from the installation of the transmission line, including a construction access road and laydown area comprising 0.5 acre of agricultural land. Staff concluded that:

- all of the foregoing impacts would be significant but may be mitigated to less than significant levels with appropriate habitat compensation and the implementation of avoidance and minimization measures; and
- adverse impacts of construction activities will be monitored and avoided, minimized and mitigated with its recommended Conditions of Certification. (Ex. 1, p. 5.2-21.)

Operation of the proposed project will result in HRSG emissions, cooling tower emissions, and noise and lights from plant operations, all of which may cause impacts to biological resources on the site and adjacent areas. Power plant facilities may also cause impacts from avian collisions with the HRSG stacks and transmission lines. Staff concluded that the EAEC's:

(*Oncorhynchus tshawytscha*), the threatened Central Valley spring-run chinook *salmon (O. tshawytscha*), and the threatened Central Valley steelhead (*O. mykiss*). (Ex. 1, p. 5.2-19.)

[89] See our Decision sections on Air Quality, Soil and Water Resources; Noise; and Traffic and Transportation for a discussion of how these impacts will be mitigated to a level of insignificance.

- HRSG's air pollutant emissions such as nitrogen oxide gases (NO_x), sulfur oxides (SO_x), and PM_{10} will not impact any plant communities found in the project vicinity;
- Maximum cooling tower drift from the cooling tower is not expected to change the microclimate of the area and therefore, no significant impacts will result;
- .Maximum cooling tower drift is not expected to have any significant impact on vegetation in surrounding areas within the maximum impact radius for the cooling tower drift;
- Maximum cooling tower drift is not expected to have an impact on either the California red-legged frog, California tiger salamander;
- Cooling tower drift impacts on sensitive vegetation or wildlife species near the project site are not expected to be significant.
- Applicant will be required to use Best Available Control Technology (BACT) to minimize all sources of air emissions and minimize biological impacts to an insignificant level;
- cooling tower effluent will create no biological impacts;
- avian collisions with stacks are not expected to cause significant numbers of bird collisions;[90]
- lighting levels do not indicate significant risk that operations will adversely impact wildlife;[91]
- noise levels do not indicate significant risk that long-term operations will adversely impact wildlife because highly sensitive reptiles, birds, or mammals are not expected to breed on-site or in adjacent agricultural fields, noise levels will be below 60 dBA., and
- Noise levels from construction will not cause significant adverse impacts to wildlife upon implementation of appropriate mitigation measures;[92] and

---

[90] Staff noted that if a collision problem is detected on the facility by the Designated Biologist, corrective action and/or monitoring should be implemented. (Ex. 1, p. 5.2-23.)

[91] Lighting will also be required on-site and any bright night lighting will disturb the resting, mating, or foraging activities of wildlife. Exterior lights may also make roosting or nesting birds more visible to predators, and may attract migratory birds to areas (if the lights are on tall buildings or HRSG stacks, collisions could occur). To reduce these effects, exterior lighting would be pointed downward to minimize impacts and the color of the lighting may be assessed and modified as appropriate. Staff concluded that the efficacy of this mitigation would be monitored using methods defined in the Biological Resources Mitigation and Implementation Monitoring Plan (BRMIMP) and that corrective action will be required as needed. (Ex. 1, p. 5.2-24; *see* Conditions **BIO-4, 5 & 12**.)

[92] Staff found that construction activities would temporarily increase noise levels more than plant operation levels. Construction equipment, such as concrete mixers, backhoes, jackhammers,

- maintenance impacts will include keeping vegetation clear of the fence line for fire control. An area approximately 10 feet wide around the fence line will be kept mowed and the use of all rodenticides, herbicides, and insecticides shall be consistent with USDA label requirements. (Ex. 1, p. 5.2-21/24.)

Staff considered impacts from EAEC's proposed linear facilities. A new 1.8 miles long natural gas pipeline originates from the EAEC site and terminates at the PG&E main pipeline. A 0.9-mile section running along the California Aqueduct would transect sensitive habitats such as those open habitats used by San Joaquin kit fox and burrowing owl. In addition, EAEC's gas pipeline may impact three wetlands. These three areas are Byron Bethany Irrigation District (BBID) operated Canals 70, 120 and 155). The canals are packed-earth or concrete-lined, seasonally dry, and lack aquatic or riparian vegetation. Staff concluded that constructing in these areas when canal flow is not present and the use of best management construction practices as set forth in the BRMIMP will prevent adverse impacts to water quality and will be sufficient to mitigate significant adverse impacts to sensitive species. (Ex. 1, p. 5.2-24/25.)

Operation impacts gas pipeline will not impact the area's biological resources unless a leak occurs that results in a fire. Maintenance of the gas pipeline will involve weed control, and ecologically sound maintenance techniques performed by a trained employee who is aware of sensitive biological resources in the area, In addition all maintenance will be performed in accordance with any permits required by state and federal agencies. Staff concluded that no significant impacts resulting from pipeline maintenance are expected unless the pipeline maintenance requires ground disturbance; at such a time, the USFWS and CDFG should be consulted. (Ex. 1, p. 5.2-25/26.)

---

and drills can produce noise levels that can range from 78 to 98 dBA. Such activities frighten wildlife away, disrupt their nesting, roosting, or foraging activities, or prevent them from using the habitats available around the EAEC. Many species of wildlife are able to adapt to construction noise once they associate it with non-threatening activities. Staff concluded that noise impacts from construction would need to be mitigated with appropriate technology and avoidance of sensitive resources. (Ex. 1, p. 5.2-23/24.)

There are two water supply linear water pipelines to provide process makeup and reclaimed water to the project site. The process makeup (raw) water will be conveyed from the new pump station at Bruns Road and Canal 45 to the site by a buried pipeline. The alignment will cross primarily pastureland, a gravel farm road, and vineyards. It will cross the existing Canal 45 in the roadbed, and will cross under the Delta-Mendota Canal by the Horizontal Directional Drill construction method, thus avoiding impacts to this waterway. Impacts to pastureland and open agricultural fields will be similar to those described for the project site. The alignments will be surveyed for potential occurrence of special-status plant and animal species, but based on the dominant habitat type (vineyards, row crops, and pasture) and field surveys in 2000 and 2001, the potential for their occurrence is low. (Ex. 4 E, p. 2.2-6.)

Recycled water will be conveyed to the site by a buried pipeline from the Mountain House Community Services District Wastewater Treatment Plant. The pipeline will be sited in the already disturbed land in agricultural fields south of Byron Bethany Road. The habitat in this area is similar to that described for the project site and supports similar species. The route was cleared of nearly all vegetation during waterline installation for the Mountain House community in 2001, and therefore lacks significant natural features. There are two wetland areas in this alignment where Mountain House Creek and an unnamed drainage cross Byron Bethany Road. The portion of Mountain House Creek within the alignment has been substantially modified by the Mountain House community infrastructure construction. The unnamed drainage is an abandoned farmpond that would be crossed by the Horizontal Directional Drill or jack and bore construction method and therefore be left undisturbed. (Ex. 4 E, p. 2.2-6; *see* Condition **BIO-11**.)

Biological resources that could potentially occur along the water supply linear alignments are the same as those that could occur on the project site. Site-

specific surveys of these alignments in 2001 and 2002 did not detect sensitive species. Additional preconstruction surveys will be employed prior to construction to confirm that sensitive species are not present; measures will be implemented to avoid impacts if necessary. (Ex. 4 E, p. 2.2-6.)

Fiber optic cable will be installed from the EAEC switchyard west across Mountain House Rd. along an existing dirt road and into the north side of the Tracy Substation. WAPA requested the installation of an 8-inch fiber optic cable conduit, which will have a linear distance less than 1,000 feet, and a width of 50 feet. The fiber optic cable will provide a second communication path between the EAEC switchyard and the Tracy Substation. The installation of this cable via trenching will temporarily disturb ruderal vegetation. With appropriate construction avoidance and mitigation measures, adverse impacts will be insignificant. Operation of the cable will not result in biological impacts. (Ex. 1, p. 5.2-29.)

Transmission lines will interconnect the EAEC to the Modesto Irrigation District and Turlock Irrigation District (MID/TID)'s 230-kV transmission line running along Kelso Road approximately 0.5 miles south of the project site. The MID/TID line will be routed into and out of the EAEC switchyard in a north/south orientation on separate transmission poles that will be approximately 260 feet apart. EAEC's transmission lines will be only 0.5 miles long; they will exist within an area of high migration and daily movement of birds, especially waterfowl and raptors. (Ex. 1, p. 5.2-29.)

Electrocution may result in serious impacts to bird populations and typically occurs when a bird simultaneously contacts two conductors of different phases or contacts a conductor and a ground. If there is not sufficient clearance between these elements, electrocutions may occur. In general, transmission lines larger than 65 kV have sufficient clearance between these elements to protect large birds from electrocution. Installation of transmission lines and related facilities

according to appropriate guidelines will provide a means to eliminate most potential impacts associated with electrocution. (Ex. 1, p. 5.2-29; *see* Condition **BIO-5** & **11**.)

Collisions of birds with EAEC transmission lines may be a measurable problem because the EAEC project area attracts many bird species. However, the impacts may not be limited to EAEC facilities, but rather, may be occurring on adjacent transmission lines. There has been a documented problem with bird electrocution and "nuisance" perching at the Tracy Substation, which is located directly (west) across Mountain House Road from the EAEC. Ultimately, the EAEC has the potential to create an increase in avian collisions with the new transmission lines. Therefore, Staff has recommended implementation of a short-term (one year) monitoring program to quantify avian collisions, and electrocutions. (Ex. 1, p. 5.2-29/30; see Condition **BIO-12**.)

Transmission line construction impacts will include the permanent removal of approximately 0.5 acres of agricultural vegetation on the south side of the Kelso Road near the WAPA Substation. The same area under the towers would be temporarily disturbed by equipment (flatbed and crane) during construction. Maintenance impacts may include increased traffic and the storage of equipment during repairs. Impacts should be minimal when best management practices are implemented. Operation of EAEC's electric transmission lines are not expected to cause a significant increase in avian collisions with the conductor wires, causing electrocution or collision death, because the lines are not located in a major flyway and transmission lines are designed to "raptor proof" guidelines. (Exs. 1, p. 5.2-30; 4 E, p.2.2-9.)

3. Cumulative Impacts[93]

[93] The CEQA Guidelines define cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." (14 Cal. Code of Regs., § 15355; (Ex. 1, p. 5.2-30.)

The proposed EAEC will permanently remove approximately about 45 acres of wildlife habitat. The CEC has one energy project under review and one recently approved energy project close to the EAEC. The Tesla Power Project (TPP) is proposed as a 1,120 MW combined cycle facility located on a 160-acre parcel in Alameda county, less than 10 miles from EAEC. The approved Tracy Peaker Project (Tracy) is a simple cycle 169 MW facility within a 40-acre parcel near the City of Tracy. (Ex. 1, p. 5.2-30.)

In addition, the new town of Mountain House has been approved less than one-mile southeast of the proposed EAEC. Mountain House is projected to achieve maximum build-out by the year 2024 and have a population of at least 40,000 people. *(Ibid.)*

The foregoing projects will result in potentially significant cumulative adverse impacts to terrestrial habitats for special status species, such as the San Joaquin kit fox. These projects may also use freshwater in a manner that causes potentially significant cumulative adverse impacts to endangered populations of native fish species. Staff concluded that the EAEC project:

- would contribute to the cumulative loss and degradation of habitats essential to the persistence and recovery of special status wildlife species; but that
- Applicant's proposed terrestrial mitigation will mitigate impacts to less than significant levels and avoid contributing to potentially significant cumulative terrestrial impacts. (Ex. 1, p. 5.2-30/31.)

4. Proposed Mitigation

Applicant developed mitigation measures during informal and formal consultations with the USFWS, CDFG, and the CEC to reduce impacts to biological resources to less than significant. A Biological Opinion was issued by the USFWS and docketed on September 19, 2002. The Project Owner will comply with the mitigation measures identified in the Biological Opinion for the federally listed species (San Joaquin Kit Fox and California red-legged frog).

Applicant has also applied to the CDFG for a 2081 permit for state special status species affected by the project (Swainson Hawk, California red-legged frog, western pond turtle, California tiger salamander, and burrowing owl). (Exs. 2 RR; 4 E, pp. 2.2-10/11.)

Mitigation measures with which the project owner will comply are summarized below, as follows:

- To mitigate for temporary and permanent impacts associated with the EAEC's construction, Applicant has obtained and will preserve in perpetuity 151 acres of mitigation land (referred to as the Gomes Farms property) located approximately one mile from the project site. This land possesses many invaluable biological characteristics, which make it ideal mitigation property. These characteristics include 1) habitat suitability, 2) connectivity, 3) rare or unique habitat features, 4) adequate size and 5) diversity of habitats and communities. The parcel is adjacent to land owned or under the control of the CDFG that it operates as preserves or refuges for burrowing owls, tiger salamander, and red-legged frog. The parcel obtained by the Applicant will significantly increase the size of the preserve already created by CDFG. The USFWS, CDFG, and CEC concur that the 151-acre Gomes Farms Property mitigates temporary and permanent impacts associated with the EAEC. (Condition **BIO-13**; 10/16 RT 412:21-413:24.)
- Applicant will provide worker environmental awareness training for all construction personnel that identifies the sensitive biological resources and measures required to minimize project impacts during construction and operation. (Condition **BIO-4**, **6**, **11** & **12**.)
- Provide mitigation construction monitoring by a qualified Designated Biologist during construction activities near sensitive habitats. (Condition **BIO-1-3**.)
- Prepare a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) that outlines how the project owner will implement the mitigation measures developed to ensure that any action authorized, funded, or carried out by state or federal lead agencies is not likely to jeopardize the continued existence of endangered or threatened species. (Condition **BIO-5** & **12**.)
- Avoid sensitive habitats and species during construction by developing construction exclusion zones and silt fencing around sensitive areas. (Condition **BIO-11** & **12**.)

- Conduct additional preconstruction surveys for sensitive species in impact areas during the spring before construction begins, especially near the Delta-Mendota Canal. (Condition **BIO-11** & **12**.)
- Prepare construction monitoring and compliance reports, which will analyze the effectiveness of the mitigation measures. (Condition **BIO-11** & **12**.)
- Applicant has submitted a revised landscape plan for the proposed EAEC project. The landscaping will lie within the 43.5-acre footprint. Therefore, additional habitat compensation was not proposed. The revised plan incorporates several measures designed to decrease biological impacts including: 1) locating the vegetation closer to the project fence, 2) increasing the use of native species, 3) decreasing the use of large trees, and 4) proposing to maintain shrubs and trees with a 3 foot clearance from the ground. (Condition **BIO-14**; *see also* **VIS-3**.)
- Applicant shall comply with conditions set forth through USFWS, CDFG, and USACOE permits, which may be required for the project. In addition, Western may require the Applicant to prepare a Wetland Assessment, per the requirements in Title 10, Code of Federal Regulations, section 1022. (Condition **BIO-5 7-10** & **15**.)
- The EAEC project will comply with all LORS. (10/16 RT 404:20-23; (Ex. 1, pp. 5.2-41/42.).)
  (Exs. 1, pp. 5.32/33; 4 E, pp. 2.2-10/11.)

5. Intervenors Sarvey and CARE

Dr. K, Shawn Smallwood presented testimony on behalf of Intervenors Sarvey and CARE. Dr. Smallwood argues that the CEC's CEQA equivalent proceedings is flawed and that Staff's FSA lacks sufficiency for a host of reasons. (10/16 RT 431:6-470:10; Ex. 7 A, p. 1.)

COMMISSION DISCUSSION

The Committee has examined the evidentiary record and we are satisfied that biological impacts to the project area, including ancillary pipelines and facilities, have been properly evaluated and mitigated under CEQA. The Committee appreciates Dr. Smallwood's presentation and the points, which he raised in opposition to the proposed facility. On the other hand, Applicant, Staff, WAPA, USFWS, USACOE, NMFS, and CDFG all concur that the EAEC will not

adversely affect and special status species. Likewise, the relevant regulatory bodies agree that the Gomes Farms property provides plenary mitigation and an opportunity to enhance and restore habitat for special status species in particular and wildlife in general. Finally Staff and Applicant agree that the EAEC project will not result in any significant cumulative impacts and complies with all applicable LORS.

Accordingly, the Committee finds that there is no substantial evidence in the record to support the assertions of CARE and Intervenor Sarvey.

FINDINGS AND CONCLUSIONS

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

1. The proposed power plant will require approximately 43.5 acres that are situated within a 174-acre parcel, which is rectangular, and bordered by irrigation ditches along the eastern and southern boundaries.

2. The 43.5-acre site and the 174-acre parcel are surrounded on three sides by paved 2-lane highways; a small residential area is located on adjacent lands to the south.

3. Sensitive plants and animals exist in the project area, as the Altamont Hills and surrounding mountain ranges of the region provide important habitats for a diversity of protected species.

4. The loss of natural and agricultural lands to housing and industrial uses has accelerated in recent years and it has become increasingly important to protect open space and habitats in the Altamont Hills region where the EAEC is proposed to be located.

5. There are no wetlands or sensitive plant species recorded on EAEC's proposed site and it is unlikely that any populations potentially persisting in the area will be significantly impacted by the proposed project's facilities.

6. However, plant species such as big tarplant and showy Indian clover may grow along grassland portions of project linear features.

7. The entire 174-acre project site has been heavily disturbed and cultivated over many decades, Until recently, the EAEC parcel was used for

agriculture, particularly crops such as alfalfa, which can be beneficial to wildlife.

8. EAEC if constructed will result in the permanent loss of 43.5 acres of prime agricultural land that also provides wildlife habitat.

9. The USFWS issued a Biological Opinion for the EAEC project and it is part of our Evidentiary Record.

10. Construction and operation of the EAEC project, if not adequately mitigated, could create adverse impacts to the sensitive biological resources in the project area.

11. The EAEC project would contribute to the cumulative loss and degradation of habitats essential to the persistence and recovery of special status wildlife species such as the San Joaquin kit fox.

12. Applicant's proposed terrestrial mitigation will mitigate impacts to less than significant levels and avoid contributing to potentially significant cumulative terrestrial impacts.

13. Applicant shall comply with conditions set forth through USFWS, CDFG, and USACOE permits, which may be required for the project. In addition, Western may require the Applicant to prepare a Wetland Assessment, per the requirements in Title 10, Code of Federal Regulations, section 1022.

14. The mitigation measures contained in the Conditions of Certification set forth below were developed in cooperation and consultation with the United States Fish & Wildlife Service and with the California Department of Fish and Game.

15. The Conditions of Certification assure that the EAEC Project will cause no significant unmitigated adverse impacts to biological resources in the project area.

16. The Conditions of Certification, if properly implemented, ensure that the EAEC Project will comply with applicable LORS, which are set forth in the pertinent portion of Appendix A of this Decision.

We therefore conclude that construction and operation of the EAEC Project will not create any significant direct, indirect, or cumulative adverse impacts to biological resources.

CONDITIONS OF CERTIFICATION

Selection of the Designated Biologist

BIO-1 The project owner shall submit the resume, including contact information, of the proposed Designated Biologist to the CPM for approval.

Verification: The project owner shall submit the specified information at least 60 days prior to the start of any site (or related facilities) mobilization. Site and related facility activities shall not commence until an approved Designated Biologist is available to be on site. Should emergency replacement of the designated specialist become necessary, the project owner shall immediately notify the CPM to discuss the qualifications of the proposed replacement specialist

The Designated Biologist must meet the following minimum qualifications:

1. Bachelor's Degree in biological sciences, zoology, botany, ecology, or a closely related field;
2. Three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society;
3. At least one year of field experience with biological resources found in or near the project area; and
4. An ability to demonstrate to the satisfaction of the CPM the appropriate education and experience for the biological resources tasks that must be addressed during project construction and operation.

If a Designated Biologist needs to be replaced, then the specified information of the proposed replacement must be submitted to the CPM at least ten working days prior to the termination or release of the preceding Designated Biologist.

Duties of the Designated Biologist and Biological Monitors

BIO-2 The project owner shall ensure that the Designated Biologist performs the following during any site (or related facilities) mobilization, ground disturbance, grading, construction, operation, and closure activities. These duties also pertain to the Biological Monitors.

1. Advise the project owner's Construction/Operation Manager, supervising construction and operations engineer on the implementation of the biological resources Conditions of Certification;
2. Be available to supervise trained and approved Biological Monitors, supervise or conduct mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance

or containing sensitive biological resources, such as wetlands and special status species or their habitat;

3. The Designated Biologist and Biological Monitors and shall be thoroughly familiar with the Biological Conditions of Certification and the BRMIMP;
4. Clearly mark sensitive biological resource areas and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions;
5. Inspect active construction areas where animals may have become trapped prior to construction commencing each day. At the end of the day, inspect for the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (parking lots) for animals in harms way;
6. Notify the project owner and the CPM of any non-compliance with any biological resources Condition of Certification; and
7. Respond directly to inquiries of the CPM regarding biological resource issues.

Verification: The project owner shall ensure that the Designated Biologist maintains written records of the tasks described above, and summaries of these records shall be submitted in the Monthly Compliance Reports. Qualified Biological monitors shall be approved by the CPM and training shall be verified according to procedures established in the BRMIMP including familiarity with the Conditions of Certification. During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report.

Authority of the Designated Biologist and Biological Monitors

BIO-3 The project owner's Construction/Operation Manager shall act on the advice of the Designated Biologist and Biological Monitors to ensure conformance with the biological resources Conditions of Certification.

If required by the Designated Biologist or Biological Monitors, the project owner's Construction and Operation Manager shall halt all site mobilization, ground disturbance, grading, construction, and operation activities in areas specified by the Designated Biologist.

The Designated Biologist and Biological Monitors shall:

1. Require a halt to all activities in any area when determined that there would be adverse impact to biological resources if the activities continued;
2. Inform the project owner and the Construction/Operation Manager when to resume activities; and
3. Notify the CPM if there is a halt of any activities, and advise the CPM of any corrective actions that have been taken, or will be instituted, as a result of the halt.

Verification: The project owner shall ensure that the Designated Biologist notifies the CPM immediately (and no later than the following morning of the incident, or Monday morning in the case of a weekend) of any non-compliance or a halt of any site mobilization, ground disturbance, grading, construction, and operation activities. The project owner shall notify the CPM of the circumstances and actions being taken to resolve the problem.

Whenever corrective action is taken by the project owner, a determination of success or failure will be made by the CPM within five working days after receipt of notice that corrective action is completed, or the project owner will be notified by the CPM that coordination with other agencies will require additional time before a determination can be made.

Worker Environmental Awareness Program

BIO-4 The project owner shall develop and implement a CPM approved Worker Environmental Awareness Program (WEAP) in which each of its employees, as well as employees of contractors and subcontractors who work on the project site or any related facilities during site mobilization, ground disturbance, grading, construction, operation and closure are informed about sensitive biological resources associated with the project. The training may be presented in the form of a video.

The WEAP must:

1. Be developed by or in consultation with the Designated Biologist and consist of an on-site or training center presentation in which supporting written material is made available to all participants;
2. Discuss the locations and types of sensitive biological resources on the project site and adjacent areas;
3. Present the reasons for protecting these resources;
4. Present the meaning of various temporary and permanent habitat protection measures;
5. Provide an understanding of the duties and authority of the Designated Biologist and Biological Monitors;

6. Identify whom to contact if there are further comments and questions about the material discussed in the program;
7. Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines; and
8. The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist.

Verification: At least sixty (60) days prior to the start of any site (or related facilities) mobilization, the project owner shall provide to the CPM two (2) copies of the WEAP and all supporting written materials prepared or reviewed by the Designated Biologist and a resume of the person(s) administering the program.

The project owner shall provide in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date. The signed training acknowledgement forms shall be kept on file by the project owner for a period of at least six months after the start of commercial operation.

During project operation, signed statements for active project operational personnel shall be kept on file for six months, following the termination of an individual's employment.

Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP)

BIO-5 The project owner shall submit to the CPM for review and approval a copy of the BRMIMP and shall implement the measures identified in the approved BRMIMP. Any changes to the approved BRMIMP must also be approved by the CPM in consultation with CDFG, the USFWS and appropriate agencies to insure no conflicts exists.

The final BRMIMP shall identify:

1. All biological resources mitigation, monitoring, and compliance measures proposed and agreed to by the project owner;
2. All Biological Resource Conditions of Certification identified in the Commission's Final Decision;
3. All biological resource mitigation, monitoring and compliance measures required in federal agency terms and conditions, such as those provided in the USFWS Biological Opinion ;
4. All biological resources mitigation, monitoring and compliance measures required in other state agency terms and conditions, such as those provided in the CDFG Take Permit and Streambed Alteration Agreement and ACOE permits;

5. All biological resources mitigation, monitoring and compliance measures required in local agency permits, such as site grading and landscaping requirements;
6. All sensitive biological resources to be impacted, avoided, or mitigated by project construction, operation and closure;
7. All required mitigation measures for each sensitive biological resource;
8. Required habitat compensation strategy, including provisions for acquisition, enhancement, and management for any temporary and permanent loss of sensitive biological resources;
9. A detailed description of measures that will be taken to avoid or mitigate temporary disturbances from construction activities;
10. All locations on a map, at an approved scale, of sensitive biological resource areas subject to disturbance and areas requiring temporary protection and avoidance during construction;
11. Aerial photographs, at an approved scale, of all areas to be disturbed during project construction activities - one set collected prior to any site or related facilities mobilization disturbance and one set collected subsequent to completion of mitigation measures. Include planned timing of aerial photography and a description of why times were chosen;
12. Duration for each type of monitoring and a description of monitoring methodologies and frequency;
13. Performance standards to be used to help decide if/when proposed mitigation is or is not successful;
14. All performance standards and remedial measures to be implemented if performance standards are not met;
15. A discussion of biological resources related facility closure measures;
16. A process for proposing plan modifications to the CPM and appropriate agencies for review and approval; and
17. A copy of all biological resources obtained permits.

Verification: At least sixty (60) days prior to start of any site or related facility mobilization activities, the project owner shall provide the CPM with two copies of the BRMIMP for this project, and provide copies to the CDFG and the USFWS.

The CPM, in consultation with the CDFG, the USFWS and any other appropriate agencies, will determine the BRMIMP's acceptability within forty-five (45) days of receipt.

The project owner shall notify the CPM no less than five (5) working days before implementing any modifications to the approved BRMIMP to obtain CPM approval.

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 items are still outstanding. If there are any permits that have not yet been received when the BRMIMP is first submitted, these permits shall be submitted to the CPM, CDFG, and USFWS as addendum to the BRMIMP within ten (10) days of their receipt.

Closure Plan Measures

BIO-6 The project owner shall incorporate into the planned permanent or unexpected permanent closure plan and the BRMIMP, measures that address the local biological resources.

The planned permanent or unexpected permanent closure plan shall address the following biological resources related mitigation measures:

1. Removal of transmission conductors when they are no longer used and useful;
2. Removal of all power plant site facilities and related facilities;
3. Measures to restore wildlife habitat to promote the re-establishment of native plant and wildlife species; and
4. Revegetation of the plant site and other disturbed areas utilizing appropriate seed mixture.

Verification: At least twelve (12) months prior to commencement of closure activities, the project owner shall address all biological resources related issues associated with facility closure which is incorporated into the BRMIMP 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.

Incidental Take Permit

BIO-7 The project owner shall acquire an Incidental Take Permit from the California Department of Fish and Game (CDFG) (per Section 2081(b) of the Fish and Game Code; California Endangered Species Act) and/or a Consistency Determination (per Section 2080) and incorporate the terms and conditions into the project's BRMIMP.

Verification: At least thirty (30) days prior to the start of any site or related facilities mobilization activities, the project owner shall submit to the CPM a copy of the final CDFG Incidental Take Permit and/or a Consistency Determination.

Streambed Alteration Agreement

.

BIO-8 The project owner shall acquire a Streambed Alteration Agreement from the CDFG, and incorporate the terms and conditions into the project's BRMIMP. If a Streambed Alteration Agreement is not needed for the project, the Project Owner shall submit a letter from CDFG stating their intention to not require the permit.

Verification: At least thirty (30) days prior to the start of any site or related facilities mobilization activities the project owner shall submit to the CPM a copy of the final CDFG Streambed Alteration Agreement, or a letter from CDFG stating their intention to not require the permit. Federal Biological Opinion.

BIO-9 The project owner shall provide final copies of the Biological Opinion and any amendment addressing project changes from the U. S. Fish and Wildlife Service. The terms and conditions contained in the Biological Opinion shall be incorporated into the project's BRMIMP.

Verification: At least thirty (30) days prior to the start of any site or related facilities mobilization activities the project owner shall submit to the CPM a copy of the U. S. Fish and Wildlife Service's Biological Opinion and any amendment.

U.S. Army Corps of Engineers Section 404 Permit

BIO-10 Upon final design of the project linear facilities, such as the recycled water line, the need for a U.S. Army Corps of Engineers (ACOE) Section 404 permit shall be determined. The project owner shall provide a final copy of the U.S. Army Corps of Engineers Section 404 permit or a letter from the ACOE stating that the Section 404 permit is not required. If the ACOE 404 permit is required, the biological resources related terms and conditions contained in the ACOE 404 permit shall be incorporated into the project's BRMIMP.

Verification: At least thirty (30) days prior to the start of any site or related facilities mobilization activities, the project owner shall submit to the CPM a copy of the U.S. Army Corps permit, or a letter from the ACOE stating that the Section 404 permit is not required.

Preventative Design Mitigation Features

BIO-11 The project owner shall modify the project design to incorporate all feasible measures that avoid or minimize impacts to the local biological resources.

Measures that shall be implemented as appropriate include:

1. Design transmission line poles, access roads, pulling sites, and storage and parking areas to avoid identified sensitive resources;
2. Avoid loss of wetland and riparian habitats; and
3. Design and construct transmission lines and all electrical components to reduce the likelihood of electrocutions of large birds.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP.

Construction Mitigation Management to Avoid Harassment or Harm

BIO-12 The project owner shall manage their construction site, and related facilities, in a manner to avoid or minimize impacts to the local biological resources.

The project owner shall comply with the following measures:

Biological Mitigation Measures Proposed by Staff:

1. Appropriate avoidance and minimization measures shall be in place before site mobilization of a particular area, or activity that may impact sensitive biological resources;
2. Conduct pre-construction surveys for special status plant and animals according to USFWS, and CDFG survey requirements and recommendations, and in consultation with the CEC and Western. The Applicant has explicitly listed some surveys that are listed below and detailed in the text of the FSA. The timing and duration of the surveys shall be reviewed, agreed upon and provided in the BRMIMP;
3. Clearly mark construction area boundaries with stakes, flagging, silt fencing, and/or rope or cord to minimize inadvertent degradation or loss of adjacent habitat during facility construction/modernization;
4. All equipment storage shall be restricted to designated construction zones or areas that are currently not habitat for special status species;
5. Traffic is restricted to existing roads, designated access roads, construction storage and staging areas, and parking areas;
6. Restrict construction within all drainages, excluding Horizontal Directional Drilling (HDD) to daylight hours in order to avoid impacts to special status reptiles, amphibians, and mammals;

7. There shall be temporary fencing and wildlife escape ramps for construction areas that contain steep walled holes, or trenches if outside of an approved, permanent exclusionary fence. The temporary fence shall be hardware cloth or similar materials that are approved by USFWS and CDFG;
8. Open trenches in active construction areas shall be inspected for wildlife each morning prior to start of daily construction activities. Within active construction areas, inspect all construction pipes, culverts, or similar structures with a diameter of 4-inches or greater for sensitive species (such as kit foxes) prior to pipe burial. Any wildlife observed shall be allowed to escape on its own if possible prior to commencement of construction. Otherwise, the Designated Biologist shall contact the appropriate agency for assistance;
9. To prevent entrapment of listed species, or other animals during construction, all excavated, steep-walled holes or trenches more than 2 feet deep shall either be covered at the close of each working day by plywood or provided with one or more escape ramps (3:1) constructed of earth fill or wooden planks. For all open trenches, an escape ramp shall be constructed at a minimum of every 0.25-mile;
10. Setbacks and buffers shall be established for the protection of special-status wildlife species. Distances shall be determined through consultation with the USFWS and CDFG prior to construction;
11. Pipes to be left in trenches overnight shall be capped;
12. Use of rodenticides shall be according to USDA label standards on-site, at the construction laydown area, and along linears. Use of rodenticides that are enclosed or otherwise protect kit fox, birds of prey, and other non-target species from becoming inadvertently poisoned;
13. Report all inadvertent deaths of sensitive species to the appropriate project representative. Injured animals shall be reported to CDFG, and the Project Owner shall follow instructions that are provided by CDFG;
14. Successfully revegetate all linears, construction, staging, temporary parking, and equipment storage areas with CPM-approved plant species;
15. Implement pre-construction surveys for raptor nests and all sensitive and special status species of animals and plants that are potentially on the project site, along linears, and at the construction laydown area within 14 days prior to commencement of any construction activities. The timing of surveys shall be based upon the season in which the construction activities are to occur; and
16. Implement a monitoring program for avian electrocution and collisions for 12 months to determine if mitigation, such as the installation of

bird-flight diverters, is necessary. The monitoring plan shall be included in the BRMIMP and developed in consultation with the USFWS, Western, and CDFG.

Specific Mitigation Measures Proposed by the Applicant

17. Implement pre-construction surveys for big tarplant;
18. Implement nest surveys for Swainson's hawk within ½ mile of project features to determine use by Swainson's hawk. If project features are within ½ mile of Swainson's hawk nesting, avoid construction within ½ mile during nesting season if feasible. If construction cannot avoid active nests by ½ mile, an incidental take agreement (CDFG Section 2080.1) shall be obtained;
19. Implement pre-construction surveys for burrowing owl on the EAEC site, along linears, and the construction laydown area, followed by avoidance or passive relocation (per 1993 California Burrowing Owl Consortium Guidelines), if owls are observed;
20. Perform surveys at the appropriate time of year to identify locations of potential California Horned Lark nests within 100 feet of project features. Construction shall be avoided in the vicinity of nests;
21. Implement pre-construction surveys for tricolored blackbird within 100 feet of project features and avoid construction in the vicinity of nests;
22. Conduct pre-construction surveys for California red-legged frog and California tiger salamander and implement mitigation measures to avoid impacts to habitats for these species;
23. For San Joaquin kit fox: Obtain and comply with the conditions of a section 7 authorization for incidental take of this species. Conduct pre-design surveys for all areas potentially affected by the project. Set and enforce speed limits in the construction area at 20 miles per hour or less;
24. Implement the pre-construction surveys for San Joaquin kit fox, and construction practices and mitigation measures as outlined in *Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance* (USFWS 1999);
25. Provide safety lighting that points downward on the HRSG stacks to reduce avian collisions; and
26. Implement a red fox control program.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP. The Project Owner shall provide a post-construction compliance report, within thirty (30) calendar days of completion of the project, to the Energy Commission CPM.

Compensation for Loss of Habitat

BIO-13 Prior to the start of site mobilization for the project and any related facilities, the project owner shall provide a conservation easement on the 151-acre Gomes Farms parcel. The Gomes Farms habitat provides suitable habitat for the San Joaquin kit fox, burrowing owl, Swainson's hawk, California tiger salamander, and California red-legged frog. If the project owner causes impacts to additional acres of habitat during construction or operation of the project they shall be required to mitigate for those impacts with additional habitat compensation, at a ratio of 3:1 for permanent impacts and 1:1 for temporary impacts, at the Haera mitigation bank or other location to be approved by the CPM in consultation with the USFWS, CDFG, and Western.

The conservation easement on the Gomes Farms parcel shall be approved through CDFG or an entity approved by CDFG and will remain in effect in perpetuity. CDFG or an entity approved by CDFG will hold the conservation easement and the endowment. The project owner shall provide a Property Assessment Report (PAR) analysis for establishment of an endowment to provide for the long-term management of the habitat lands. The third party management agency shall receive the endowment funds through CDFG or an entity approved by CDFG. Selection of the third party management agency and management procedures for the conservation easement lands must be approved by the CPM in consultation with the USFWS, CDFG, and Western.

Verification: At least thirty (30) days prior to the start of site mobilization on the project site or any related facilities, the project owner shall provide the CPM with a copy of the complete conservation easement agreement pursuant to this Condition of Certification. Upon completion of the acquisition and transfer, if applicable, of the habitat lands (include county parcel #) to the approved recipient(s), the project owner shall provide the CPM with copies of all title transfer records or records verifying other approved transactions. The Project Owner must provide to the CPM for approval, the name of the management entity, and written verification that the appropriate endowment fund (determined by the PAR analysis) has been received by the approved management entity.

Each month, the project owner shall provide information on additional planned or unplanned impacts to habitats that will be permanently or temporarily by the project. The project owner shall provide information at least 30 days prior to incurring the impacts for planned impacts and within 30 days of incurring the impacts for unplanned impacts. Each month, the Designated Biologist shall prepare, as part of the monthly compliance report, a detailed description and evaluation of any additional habitat impacts. The report shall include appropriately scaled and detailed maps, the number of acres to be impacted or already impacted, the types of habitat(s) impacted and any impacts to special status species. Within thirty (30) days of the completion of construction, the project owner shall submit a final report on all additional acres impacted, if any. In this report, the project owner shall provide evidence of consultation with the

CPM, USFWS, and CDFG to confirm the location and acreage of habitat compensation to be provided at the approved mitigation ratio. If no additional habitat acres are impacted, then no additional habitat mitigation shall be required.

Refuge Burrows for San Joaquin Kit Fox

BIO-14 The Project Owner's Landscape Plan submitted on April 3, 2002 shall be approved after licensing and implemented as approved (refer to Condition of Certification **VIS-3**). The final landscaping design shall be approved by Energy Commission staff in consultation with the USFWS, CDFG, and Western. In order to protect San Joaquin kit fox from predators and competitors that may benefit from the landscaping, and to generally minimize adverse impacts to the kit fox, the Project Owner shall install artificial refuge dens underneath the landscaping and around the perimeter of the facility. The spacing and size of the dens shall be determined in consultation with CDFG and USFWS and shall be included in the BRMIMP. A monitoring plan concerning the use of the dens shall also be developed and implemented in consultation with CDFG, USFWS, and Western and shall be included in the BRMIMP.

Verification: The approved Landscaping Plan and San Joaquin kit fox den installation and monitoring plan shall be attached to the BRMIMP and shall be submitted to the CPM for approval at least sixty (60) days prior to the start of any site or related facility mobilization activities.

Wetland Assessment per Title 10, Code of Federal Regulations, Section 1022

BIO-15 Upon final design of the project linear facilities, the need for a Wetland Assessment, per the requirements in Title 10, Code of Federal Regulations, section 1022 , shall be determined by Western. The project owner shall provide a final copy of the Wetland Assessment that shall be reviewed and approved by Western. The biological resources related terms and conditions contained in the Wetland Assessment shall be incorporated into the project's BRMIMP. If the Wetland Assessment is not required, the project owner shall provide the CPM with a letter from Western stating that the assessment is not required.

Verification: At least forty-five (45) days prior to the start of any site or related facilities mobilization activities, the project owner shall submit to the CPM a copy of the Wetland Assessment, or a letter from Western stating that the Wetland Assessment is not necessary.

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.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Soils

a. Applicant

The 174-acre site being acquired by the Applicant is currently in active agricultural production. All of the land is classified as prime farmland, as is most of the surrounding area.[94] Within the 40-acre portion proposed for development, the EAEC site is gently sloped, naturally decreasing in elevation in a diagonal direction to the northeast. It ranges in elevation up to about 40 feet above mean sea level (msl) in the southwest corner to as low as 31 feet msl in the northeast corner. (Ex. 1, p. 5.14-6.)

Rincon Clay Loam is the primary soil type covering the entire EAEC site. Soil types for the linear facilities tend to be similar to Rincon Clay Loam, primarily consisting of San Ysidro Loam for the raw water pipeline, Stomar Clay for the recycled water pipeline and Rincon Clay Loam for the natural gas pipeline, fiber optic cable, and transmission line. This well-drained soil is formed in alluvium from sandstone and shale on nearly level valleys and fans. Shrink-swell potential is moderate to high, which will require consideration in design and construction of equipment foundations. (Ex. 1, p. 5.14-6; see ***Soils & Water Table 1***, below.)

---

[94] Currently, the site is being used for grazing, and to farm oats, alfalfa, and hay crops, and occasionally row crops like tomatoes. (Ex. 1, p. 5.14-5.)

Soils & Water Table 1

Soil Types Affected & Characteristics

Project Element	Primary Soil Name	Slope Class %	Depth Range	USDA Texture	Parent Material	Water Erosion Hazard	Permeability	Drainage	Revegetation Potential
EAEC Plant	Rincon Clay Loam (RdA)	0 – 3%	0 – 16 in.	Clay Loam	Alluvium from sedimentary rocks	Slight	Slow	Well Drained	Very Good
Water Line	San Ysidro Loam (Sc)	0 – 2%	0 – 15 In.	Loam	Alluvium from sedimentary rocks	Slight	Very Slow	Moderatel y Well Drained	Fair
Recycled Water Line	Stomar Clay Loam (252)	0 – 2%	0 – 17 in.	Clay Loam	Alluvium from sedimentary rocks	Slight	Slow	Well Drained	Good
Natural Gas Line	Rincon Clay Loam (RdB)	3 – 7%	0 – 16 in.	Clay Loam	Alluvium from sedimentary rocks	Slight	Slow	Well Drained	Very Good
Fiber Optic Line	Rincon Clay Loam (RdA)	0 – 3%	0 – 16 in.	Clay Loam	Alluvium from sedimentary rocks	Slight	Slow	Well Drained	Very Good
Transmissi on Line	Rincon Clay Loam (RdA)	0 – 3%	0 – 16 in.	Clay Loam	Alluvium from sedimentary rocks	Slight	Slow	Well Drained	Very Good

Source: (Ex. 1, p. 5.14-6.)

Although erosion potential from water is slight, the area is subject to moderate winds that could contribute to erosion of loose soils during grading and excavation activities of construction. (Ex. 1, p. 5.14-6.)

Steve Long testified on behalf of the Applicant, sponsoring section 2.9-1—Soil Resources (Ex. 3J) and Section 8.9 of the Application for Certification (Ex. 2) into evidence to support his conclusion that the project, with implementation of the Conditions of Certification included below, will comply with relevant LORS and will have no adverse impact on soil resources. (Ex. 3J, pp. 2.9-4 & 2.9-5).

b. Staff

Staff witnesses Lorraine White, John Scroggs, Jim Henneforth, and John Kessler conducted the analysis for the Staff. (Ex. 1, pp. 5.13-1 through 5.13-53) The proposed project will result in both temporary and permanent land disturbances (grading, excavation, trenching, paving, etc).

The power plant site and associated laydown area(s) will disturb nearly 80 acres of prime agricultural lands and permanently remove from production the 40 acres required for the plant facilities. Linear facilities consisting of the supply pipelines for water, recycled water and natural gas are generally proposed to run along roads or in previously developed utility right-of-ways in order to minimize new disturbance to prime farmlands. The new transmission lines will require the placement of transmission line structures on prime agricultural land, but will not prevent current uses. (Ex. 1, 5.14-13; 5.14-42.)

Construction "best management practices" (BMPs) will be required to control wind and water erosion and storm water drainage. Although water erosion potential is slight, the area is subject to moderate winds that could erode loose soils during grading and excavation construction activities. Wind erosion will be controlled by watering the loose soil until final soil placement and compaction is achieved. Excavation and grading may also be suspended during periods of high winds. Other general BMPs employed during construction include the use of temporary drains and swales, silt fencing, hay bale barriers, and sandbag barriers as appropriate. (Ex. 1, p. 5.14-13; 5.14-42.)

Stormwater discharge will pass into the existing drainage channel along the eastern boundary of the EAEC site. The drainage channel flows northerly into the intake channel of the Delta-Mendota Canal. Storm water will be managed in accordance with the Storm Water Pollution Prevention Plans (SWPPP's) prepared for construction and industrial activities, under the General NPDES Permit for Discharges of Storm Water Associated with Construction and Industrial Activity respectively. These NPDES Permits are administered by the Central Valley – Sacramento Office of the Regional Water Quality Control Board. (Ex. 1, p. 5.14-16; 5.14-42; **Condition SOILS & WATER-1 & 2**.)

Moreover, EAEC will be required to comply with the NPDES requirements that regulate storm water by establishing effluent limitations and monitoring and

reporting requirements for construction activities storm water, low-threat or short duration discharge, and the industrial activities (operational) dictated by the storm water general permit. The draft SWPPP will need to be revised to be site specific and comply with the guidelines provided in Water Quality Order 99-08-DWQ and 97-03-DWQ. In addition, staff is recommending that stormwater flows be directed to the cooling process to conserve fresh water resources. (Ex. 1, p. 5.14-44; **Condition SOILS & WATER-12**.)

Staff notes that if appropriate BMPs are implemented through compliance with the recommended Conditions then no significant adverse impacts to soils are expected because of EAEC's construction and operation. (Ex. 1, p. 5.14-16; see **Conditions SOILS &WATER 1-3**.)

2. Soils and Water Contamination

A Phase I Environmental Site Assessment (Phase I ESA) was prepared for the EAEC site. The Phase I ESA identified three recognized environmental conditions of potential concern associated with previous agricultural activities near an existing house and maintenance yard located on the southwest portion of the 174-acre parcel. They include the:

a. former location of the underground gasoline tank adjacent to the maintenance shed where there is no documentation of contamination to soil or groundwater, although the property owner recalls there may have been some leakage around the pipefittings;

b. pesticide container storage in the former chicken coop where 5-gallon containers of apparent pesticide and herbicide appear to be leaking and in poor condition; and

c. waste oil/fuel storage area, where two above ground tanks and buckets of waste oil are located and releases to the soil are visible. (Ex. 1, p. 5.14-7.)

During the September 6, 2001 Data Response Workshop in Livermore, the Applicant clarified that none of these recognized conditions were located in the

vicinity where disturbance was planned for construction of the EAEC. (Ex. 1, p. 5.14-7.)

No ground water is to be used by the project and staff is requiring proper review and approval of the proposed septic system for groundwater protection (Ex. 1, p. 5.14-43; *see* **Condition SOILS & WATER-4**.)[95]

3. Water Supply

a. Applicant

(1) Fresh or Raw Water[96]

Typically, EAEC will require approximately 4,600-acre feet per year (afy) of process water. In peak demand years, water use could be as high as 7,000 afy.[97]

EAEC anticipates using fresh (raw) water from the California Aqueduct to cool the facility. Applicant contends that the use of water for "wet-cooling" is essential to the project's high-density power design, which incorporates a substantial amount of duct firing within the heat recovery steam generators (HRSG's). This in turn increases cooling demands in the surface condenser of the steam turbine. Byron-Bethany Irrigation District (BBID) is the jurisdictional water purveyor in the area and it proposes to supply EAEC's process and potable water needs.[98]

---

[95] The EAEC is to be operated as a zero-liquid discharge (zld) facility thereby eliminating the need to obtain a NPDES permit other than for storm water discharges. (Ex. 1, p. 5.14-43.)

[96] The terms fresh and raw are interchangeable; potable suggests that some minor treatment might be necessary before the water is consumed. (10/16 RT 234:14-236-22.)

[97] Although Applicant states that its own calculation show this "is a pretty extreme case," Staff points out that Applicant has not agreed to be limited to any amount less than 7,000 afy. (*Cf.* 10/16 RT 155:13-157-25 & 234:4-7.)

[98] BBID has projected that recycled water will be available from the future production of wastewater by the development of the Mountain House Community Services District (MHCSD) and the new town development of Mountain House. (10/16 RT 132:3-4; Ex. 4D, p. 2.15-8.)

As proposed in the AFC, EAEC will initially draw exclusively from BBID's fresh water supply originating from the California Delta. The Delta is a highly managed and regulated environment; a complex body of federal and state regulatory law controls water diversions from the Delta. (Exs. 4D, p. 2.15-16; 8 C - E.)[99]

Once BBID makes recycled water available, water makeup into the cooling towers will preferentially be received from recycled water supplies and fresh water will only be used for potable and service demands, makeup of steam demands in excess of brine concentrator production and as a supply for cooling tower demands in excess of the available flow of recycled water. (10/16 RT 169:10-17; Exs. 4D, p. 2.15-8; 8, p. 5.)[100]

(2) Reclaimed/Recycled Water

EAEC will incorporate recycled water from its purveyor, the Byron-Bethany Irrigation District (BBID). The EAEC will be designed and constructed to utilize recycled water when it becomes available from BBID. In the AFC, Applicant identified specific routes for a recycled water pipeline extending from the MHCSD's treatment facility to the EAEC; Applicant also acknowledged therein that BBID could make recycled water available to EAEC by the year 2005. (10/16 RT 175:14-181-1; see **SOILS & WATER Table 2,** following.)

---

[99] The Central Valley Project (CVP), operated by the U.S. Bureau of Reclamation, transports approximately 20 percent of the state's developed water. CVP supplies water to its agricultural, municipal, and wildlife refuge customers throughout the Central Valley. The Department of Water Resources (DWR) operates the State Water Project (SWP) to provide urban and agricultural water to its contracted customers. The SWP delivers water to two-thirds of California residents; seventy percent of SWP customers are urban users. (10/16 RT 28:13-24; Exs. 1, p. 8.14-2; 8, p. 8-14-2.)

[100] More than 95 percent of the water demand for the project is consumed by evaporation of water from a mechanical draft-cooling tower used to cool water that is circulated through the surface condenser of the steam turbine. The remainder is consumed in boiler makeup, combustion turbine air fogging, steam injected into the combustion turbines for power augmentation and potable and service water needs. (Ex. 4D, p. 2.15-7)

Applicant estimated the quantities of recycled water that could be supplied to EAEC from MHCSD's future production of wastewater, based upon BBID's planning projections. Applicant's estimate indicates that initially only fresh water will be available to the EAEC. Upon full development of the Mountain House community, however, up to approximately 2,860 afy of recycled water (or about 62% of the EAEC's total needs could be supplied with recycled water. Applicant's projections are shown below in **Table 2**. (Ex. 4D, p. 2.15-9.)

Soils & Water Table 2

Applicant's Projections on the Availability of MHCSD Recycled Water

(Acre-Feet Per Year)				
	2005	2010	2015	2020
Total Wastewater	1,483	2,965	4,448	5,930
Potentially Available to EAEC	500	1,645	2,197	2,861

Source: (Ex. 4D, p. 2.15-9.)

We note that Applicant, BBID, and Staff agree on the estimates provided in **Soils & Water Table 2**. The parties' point of departure rests on numbers pertaining to excess supply that may exist during certain winter months, and other uses within the MHCSD for the recycled water. (10/16 RT 186:11-187:19.)

Applicant contends that the FSA overestimates the amount of recycled water that will be available to EAEC in year 2020, by incorrectly assuming that all wastewater production from the MHCSD will be available to serve the EAEC,[101] and that:

[101] Applicant asserts that the actual manner by which BBID chooses to allocate recycled water supplies among its customers would be in an equitable, efficient and environmentally sound manner. (Applicant's First Opening Brief (on Phase 1 issues), p. 7.)

- the FSA projection does not account for potential uses of recycled water within the MHCSD;[102]

- nor does it account for the seasonal fluctuations in supply and demand of recycled water;

- and the effect of such fluctuation on facility sizing. (10/16 RT 189:25-190-6; Ex. 4D, p. 2.15-9.)

On July 9, 2002, Applicant and BBID executed a Memorandum of Understanding (MOU) wherein the parties agreed to develop recycled water to the maximum feasible extent. In terms of recycled water, the MOU also:

- sets design parameters for EAEC to preferentially utilize recycled water;
- provides that the EAEC will own and operate an on-site potable water facility to serve the project's domestic water needs; and
- provides for engineering, financing and scheduling requirements. (Ex. 8L; 10/16 RT 32:15-25.)

The FSA here recommends that 10 conditions of certification be adopted to address water resources issues. Applicant accepts Conditions 4, 8, 9, 11, 12, and 13 are acceptable; Applicant disagrees with Conditions 5, 6, 7, and 10, and requests that these conditions be modified.[103] In some manner, Applicant's objectionable Conditions all deal with the subject of recycled water. (Ex. 4 D, pp. 2.15-6/7.)

Staff's proposed **Condition SOILS & WATER-5** would, *inter alia,* (1) require that all recycled water produced by the MHCSD be allocated to EAEC, (2) require the construction of facilities to convey 100% of the effluent produced by MHCSD prior to commercial operation, and (3) limit raw water use to 38 % of annual

---

[102] **SOILS & WATER Table-13**, *infra*, shows an allocation whereby the remaining recycled water not distributed to the EAEC would be used within the MHCSD.

[103] Staff has withdrawn Proposed **Condition SOIL & WATER-10**, which no longer needs to be addressed. (Ex. 1 M.)

demands in any year after 2020. (Applicant's Opening Brief, (on Phase 1 issues) p. 9.)

Applicant proposes that **Condition SOILS & WATER-5** be modified:

- to provide that the project owner will use 100 % of the tertiary treated water that is **made available** to EAEC from the MHCSD;
- recycled water will be utilized for cooling tower makeup and landscape irrigation requirements, rather than referring to all nonpotable water requirements;
- to delete certain language regarding adversely impacting water supplies; and
- to change the peak flow to 9.2 mgd, which change was adopted by Staff. (10/16 RT 134:1-136-16; Exs. 4D 1; 1 M; Applicant's Opening Brief, (on Phase 1 issues) p. 9 & Att. E.)

Proposed **Condition SOILS & WATER-6** would require, *inter alia*, that the project owner to initiate a written request to BBID under Water Code section 13580.7 enter into a Water Supply agreement specifying the rate and conditions for fresh and recycled water supply. Staff's condition would also impose a requirement that:

- EAEC get first priority for allocation of recycled water; and
- Applicant verify that a recycled water pipeline has been built and is capable of conveying no less than 5,900 gpm to EAEC. (Applicant's Opening Brief (Group 1 issues), p 10; Closing Brief, pp. 9-10.)

Applicant finds **Condition SOILS & WATER-6** objectionable because:

- construction of the recycle water pipeline prior to commercial operation is not feasible,[104] and

---

[104] In its closing brief, Applicant asserts that Staff's requirement that EAEC construct the pipeline before project operation commences is economically and technically impractical and that CEQA neither requires nor recommends imposing such unreasonable mitigation requirements. According to Applicant, premature construction would (1) require the outlay of capital years before any beneficial return, (2) prevent generating the data necessary to construct a pipeline that would provide optimal use for both Mountain House and EAEC, and (3) accurate water quality data would not be available before construction. (Applicant's Closing Brief, pp. 11-12.) We disagree as discussed more fully in our Discussion, *infra.*

- the condition serves as an improper restriction on BBID's authority to manage its supplies. (10/16 RT 136:22-138-1; Exs. 4D 1; 1 M; Applicant's Opening Brief, p. 10 & Att. E.)

Proposed **Condition SOIL & WATER-7** imposes the objectionable requirements that Applicant:

- size the recycled water pipeline based upon the peak demands (5,900 gpm) of the EAEC;[105]
- include10 million gallons of on-site storage; and
- recycle water from the storm water basin. (10/16 RT 138:2-139-18; Ex. 4 D, pp. 2.15-6/7.)

In addition, Applicant's witnesses testified to the uncertainty surrounding MHCSD's provision of recycled water to the EAEC, including the San Joaquin County Board of Supervisor's opposition to the EAEC. (10/16 RT 146:8-151-14; 190:7-192:7.)

b. BBID

BBID is a multi-county special district established under the California Irrigation District Law. As a public agency operating under the California Water Code, BBID's jurisdiction encompasses approximately 19,000 acres, with lands in Alameda, Contra Costa and San Joaquin Counties. (Water Code Section 20500 *et seq.;* Exs. 8, p. l; 8O; 10/16 RT 74:9-11.)

BBID's water distribution system is divided into two divisions: the Byron Division (north of the SWP Intake Channel) and the Bethany Division (south of the SWP Intake Channel). (Ex. 1, p. 5.14-9; 10/16 RT 28:1-8; Exs. 8O; 9; see **Figure 1** below.)

---

[105] Applicant asserts that the record does not support a condition requiring Applicant to construct a recycled water pipeline sized to this flow. We disagree. Applicant's own MOU with BBID states precisely such a requirement. (10/16 RT 115:14-116:18; 184:18-185:6; Staff Closing Brief, p. 6.)

BBID maintains two diversions within the SWP Intake Channel, located between the Skinner Fish Screen and Harvey Banks Pumping Plant, with one each dedicated for supplying the Bethany Division and the Byron Division. Open canals and pump stations makeup the primary distribution system, with some pipelines for supply to BBID customers. The original point of diversion was from Italian Slough, a tributary to Old River. (Ex. 1, p. 5.14-9.)

Under agreement with DWR dated May 4, 1964, BBID's point of diversion was changed from Italian Slough to the intake channel of the California Aqueduct because SWP's development was going to displace the previous point of diversion. BBID's normal maintenance schedule for their canals requires them to be shut down from November through March for cleaning of aquatic weeds and canal bank reshaping. To facilitate a more continuous operation of BBID's facilities, concrete canal lining and a water control structure will be used in the section of BBID's Canal 45 that is used for water supply to EAEC. (Exs. 1, p. 5.14-9; 8 C.)

(1) Fresh or Raw Water

SWP facilities are located approximately two miles west of the proposed project site. DWR operates the SWP to provide urban and agricultural water to its contracted customers.[106] The SWP delivers water to two-thirds of California

[106] The SWP draws its water from the Clifton Court Forebay, through the Skinner Fish Screen into the intake channel and the water is then pumped into the Californaia Aqueduct via the Banks Pumping Plant. From a separate point of diversion, the CVP also draws its water from Clifton Court Forebay through the Tracy Fish Screen into its intake channel and the water is then pumped into the Delta-Mendota Canal via the Tracy Pumping Plant. These aqueducts, supported by various storage reservoirs, convey nearly 6,000,000 acre-feet/year of municipal, industrial and agricultural water to the southern portion of California and play a significant role in the movement of water throughout the state. Because of its high quality and ready access, surface water is extensively used in the project area. An estimated 1,700,000 afy of water from the Delta is diverted by local water users. For example, in its comments at the evidentiary hearing, the Contra Costa Water District (CCWD) notes that the Delta is the sole source of CCWD's water supply for 430, 000 people. (Exs. 1, pp. 5.14-9; 4 D 2, p. 1.)

residents or twenty-million people; seventy percent of SWP customers are urban users. (10/16 RT 28:13-24; Ex. 1, p. 8.14-2; 5.14-40.)

BBID has two pumping plants off the intake channel of the California Aqueduct. BBID's pumping plants are downstream of the Harvey O. Banks (Banks) Pumping Plant's Intake and the State Skinner Fish Screen. Another SWP facility, the Clifton Court Forebay, is the most prominent surface water body near the site. All of these SWP facilities are approximately two miles west of the proposed project site. (10/16 RT 28:13-24; Exs. 2, pp. 1-2 & 8.14-2; see **Figure 1** following.)

DWR is the sole downstream diverter potentially affected by the BBID's diversions. The timing and the amount of diversions made by the SWP also influence BBID's pumping. Because of the close proximity of their diversions, BBID and DWR have been attempting for a number of years to coordinate their operations and to define their relative rights and responsibilities. (Ex. 8, pp. 3-4.)

On August 13, 2002, BBID's Board of Directors authorized the execution of an agreement with DWR. The resulting agreement expressly acknowledges the District's position that all water diverted by BBID is done under its pre-1914 water rights. In exchange for the certainty given in the agreement that DWR would not challenge its water rights, BBID agreed to limit its use of Delta raw water to 50,000 afy. The agreement: further provides that:

- BBID may expand its diversion capacity to a maximum of 300 cubic feet per second (cfs);
- BBID's present water rights are neither enlarged nor restricted;
- DWR recognizes BBID's ability to divert water on a year-around basis for agricultural, municipal and industrial use;
- DWR will not disturb or challenge BBID's water uses under the agreement, and

BBID will not claim any right against DWR in conflict with provisions in the agreement so long as it remains in full force and effect. (Exs. 8 D-E; 10/16 RT 29:6-31-3; 59:23-60:10.)

FIGURE 1

DISTRICT DIVERSIONS RELATIVE TO DWR FACILITIES

In light of the new DWR agreement, the District reevaluated its water supply and demands, and reviewed changes in proposed projects. The results of the revised water supply analysis concluded sufficient supplies exist without having to augment existing supplies with recycled water.[107] (10/16 RT 31:13-19; Ex. 8 O, pp. 3-4.)

Part of the District's statutory responsibility is to manage its water resources for the benefit of all of its landowners. As a landowner within BBID's jurisdiction, EAEC is entitled to a ratably apportioned share of BBID's water supply, which was originally appropriated for public use.[108] In January 2001, based upon its evaluation of its water supply and projected annual demands, BBID provided Applicant with a "will serve" letter. (10/16 RT 31:4-12; Ex. 8 F.)

(2) Reclaimed/Recycled Water

In July 2001, BBID issued a Recycled Water Feasibility Study that evaluated sources of recycled water within and in the immediate area surrounding BBID's service boundaries. The study concluded that the MHCSD, which is within the District's service boundary and in close proximity to the proposed facility, was the

---

[107] BBID also considered potential impacts to the Delta. However, BBID's diversions are screened by the SWP's Skinner fish screen facility. Consequently, BBID's diversions do not result in any impacts to threatened or endangered species. (10/16 RT 31:20-32-4; Exs. 8 H, I & 8 O, pp. 6-7.)

[108] For example, in the 1990s, the District, along with ten other public agencies, participated in the regional evaluation of water resources for the East Contra Costa County area for the purpose of developing, evaluating and recommending alternatives for providing cost-effective and reliable water supplies to the area. The East County Water Supply Management Study ("East County Study") focused on evaluating water supply options for meeting the needs of the eastern Contra Costa County area through 2040. As part of the East County Study, the District provided its projection of agricultural and municipal/industrial demands within their service area for the planning periods of 2000, 2010, 2020, 2030 and 2040. Subsequently, the District has reevaluated and assessed its water supplies both in terms of its availability and its demands. The District is constantly examining its ability to maximize its water supply for the greatest public good. (Ex. 8, pp. 4-5; 8 O; 9, p. 2; 10/16 RT 35:6-38-12.)

best available and only feasible source of recycled water.[109] (Exs. 8, p. 8; 8 I, p. 6; 10; 10/16 RT 52:11-23; 75:77:10.) A summary of the study's finding is set forth below in ***Table 3.***

Soils & Water Table 3
Available Recycled Water Supplies

Alternative Water Supply	Reason for Excluding from Analysis	Basis
Tracy	External to District Prohibitive Costs	External supplies to the District have increased institutional issues associated with development. Additional conveyance costs are approximately $20 to $25 million.
Brentwood	External to District Prohibitive Costs	See Tracy. Additional conveyance costs are in excess of $15 to $20 million.
Discovery Bay	External to District Prohibitive Costs	See Tracy. Additional conveyance costs are in excess of $10 to $15 million.
Byron	Low supplies Lacking wastewater infrastructure	Available supply much less than 1,000 acre-feet per year. Insufficient treatment capability.
Tracy Hills	No supply available	All recycled water supplies from Tracy Hills are to be reused in the development.

Source: (Ex. 9, p. 9.)

On November 13, 2001, BBID's Board of Directors of adopted a Recycled Water Policy through Resolution 2001-20. The policy promotes the beneficial use of recycled water to enhance the total water supply available to the District, provided the use of recycled water:

- does not result in the diminution of BBID's pre-1914 water rights;
- does not degrade water quality within the District;
- is not injurious to the environment;
- can be furnished at a reasonable cost to the BBID's users; and
- is provided exclusively by BBID within its service area. (Ex. 9, pp. 8-9; 10/16 RT 51:22-54:11.)

BBID's conclusion in the feasibility study appears to be at odds with Staff's finding in the FSA that there is a potential to develop additional recycled water

[109] BBID concluded that recycled water from the MHCSD was most feasible for its customers in terms of cost of service and utilization of supplies generated within BBID's geographical boundaries. (Exs. 8 I, p. 6; 10.)

supplies for BBID's use.[110] The FSA also reaches the conclusion that all of the recycled water developed by MHCSD and delivered to BBID for use by its customers should be allocated to the EAEC. As a matter of water resource planning, BBID contends that Staff's approach is flawed. (Ex. 9, pp. 9-11; 10/16 RT 52:24-54:11.)

The City of Tracy, within 10 miles of the proposed facility, is outside the BBID's service boundary. By the year 2005, the City of Tracy anticipates having a surplus of tertiary treated wastewater for which it will be seeking appropriate beneficial uses. (*Cf.* Exs. 11 & 10 to 8 J.) BBID, in reviewing the City's proposals to provide recycled water to the proposed project has identified a number of legal and practical impediments. In short, BBID's states:

> BBID intends to be the sole purveyor of recycled water within its service area and will seek to recover its stranded fixed costs from any agency that duplicates the service provided by BBID. (Ex. 8 J, p. 4.)

On July 9, 2002, consistent with its Recycled Water Policy, BBID and EAEC executed a MOU, which states that the former will attempt to reduce fresh water demands by providing recycled water to the EAEC as it becomes available within the MHCSD.[111] At the October 16, 2002, Evidentiary Hearing, BBID's General Manager Richard Gilmore testified that:

- once EAEC is licensed, BBID will negotiate with MHCSD;
- MHCSD is solely in control and responsible for the discharge and recycling of water within the community;

---

[110] When discussing proposed changes to **Condition SOILS & WATER-5**, BBID acknowledges that other tertiary treated water sources may be developed. (10/16 RT 72:21-73-12.) On cross-examination by Staff, Mr. Gilmore restated BBID's position that any allocation of recycled water brought into the district's service area would be allocated at the district's discretion with a preference not to have it concentrated in a single user. In addition, Mr. Gilmore testified that BBID's feasibility study identified approximately 1155 afy of Mountain House community needs for recycled water. (10/16 RT 68:3-17; 112:12-119:2.)

[111] Mr. Gilmore testified that the MOU, in paragraph 3, provides that recycled water facilities shall be designed to provide a maximum rate of 5,900 gallons per minute from BBID to EAEC. (10/16 RT 111:9-112-11.)

- the master developer of Mountain House has no role in the management of recycled future recycled water supplies; and

- in order to provide recycled water to an industry within BBID's service area, MHCSD must contract with BBID for such distribution. (10/16 RT 32:22-33-18; Ex. 8 N, p.2.)

Mr. Nuss provided a more detailed view of BBID's intent with respect to recycled water, as follows:

> How might allocation of recycled water to East Altamont be determined by the District? Well, first of all, it's the District's opinion and my opinion that the use of recycled water within Mountain House should be considered. The demands that we have for Mountain House assume that there's virtually no use of recycled water.
>
> It makes planning sense to use recycled water in the area it's developed, in greenbelts, parks, golf courses. So we would probably focus on using recycled water within Mountain House, because that reduces the amount of raw water that we show in our table that would have to be delivered down to Mountain House. Basically those two water supplies would be passing themselves in two pipelines if it were mandated.
>
> Also by having Mountain House use recycled water, it increases the urban conservation within the Mountain House community. Use of recycled water in an urban environment is a best management practice recognized by the State of California for using recycled water. And they are emphasizing the development of urban water conservation within all new developments in the state. So recycled water would be favorably looked at from their standpoint. (10/16 RT 53:11-54-11.)

San Joaquin County, however, is on record as opposed to the EAEC. San Joaquin County's Board of Supervisors (Board) serves as the Board of Directors for the MHCSD, which must contract with BBID for the provision of Mountain House recycled water to EAEC. (Exs. 1, p. 5.14-40; 8, p. 9; *cf.* 8 M, pp. 2-3 & 8N; 10/16 RT 33:10-18; 64: 12-65:1.)

Intervenor Sarvey, on cross-examination of Mr. Gilmore, established that the Board acts as MHCSD's governing body until the Mountain House community reaches 1,000 voters, at which time voters could elect to have their own independent body absent the Board. Staff's cross-examination suggested that the Mountain House community would have 1,000 homes constructed in year 2003. (10/16 RT 77:23-78:1; 92:4-12.)

(3) BBID's Total Water Supply and Demand

BBID has completed the revised water supply and demand evaluations referenced in the FSA, and demonstrated below in ***Table 4***. The information summarized in ***Table 4*** shows the average supplies and demands expected for all uses within the BBID, including the requirements of the EAEC. Thus, BBID has determined that it has adequate supplies of fresh (raw) water, even aside from any MHCSD recycled water, to meet the needs of its customers. (Ex. 8 O; 10/16 RT 38:13-33-11; 80:22-83:19.)

Accordingly, BBID disputes Staff's conclusion in the FSA that:

- BBID has insufficient supplies to meet the demands of both their existing and projected customers and the EAEC; and
- BBID is required to develop recycled water supplies to mitigate the water supply impacts to BBID resulting from the EAEC. (Ex. 9, p. 2; ***Table 4***, below.)

Recycled water supply in ***Table 4*** below:

- reflects the total estimated supply available from MHCSD; it does not reflect any reductions for use within the community of Mountain House;
- is representative of an annually available amount; it does not reflect a comparison of the monthly availability of recycled water to the monthly need for water supply from a specific user of recycled water.[112] (10/16 RT 54:12-56-8; Exs. 8 O; 9, p. 3; ***Table 4***, below.)

[112] We agree with BBID that this approach is valid for the purposes of establishing a total water supply assessment for the District. The assessment of recycled water use by a specific customer requires an assessment of the monthly availability and demand patterns.

Mr. Nuss's testimony and the demonstrative evidence purports to demonstrate that EAEC's demand for water is in a different alignment than what MHCSD can provide in the way of recycled water, absent some ability by EAEC to store recycled water during winter periods when there supply exceeds demand. (10/16 RT 54:18-56-8; Exs. 8 O; 9, pp. 10 - 11.)[113]

During peak power production conditions, the EAEC demand will increase to 7,000 acre-feet (as noted previously). BBID's ability to serve EAEC demands in a peak power production condition during average hydrologic years is not readily apparent in ***Table* 4**, below. Under these conditions, the EAEC demand would increase an additional 2,384 acre-feet (7,000 – 4,616). The resulting total water demand would increase for each planning period, as follows:

- 2010 49,241 acre-feet;
- 2020 51,949 acre-feet;
- 2030 52,200 acre-feet;
- 2040 52,549 acre-feet. (Ex. 9, p. 6.)

Even so, according to BBID, with the development of recycled water supplies, under the full use assumptions associated with average hydrologic year conditions, sufficient supplies would be available. If recycled water supply was not available, BBID contends that it would still be able to meet the demands of the EAEC in peak power production conditions. (10/16 RT 49:8-51-21; Ex. 9, pp. 7-8.)

[113] Staff notes that BBID's recycled water variability chart assumes recycled water use within the Mountain House community and thus its depiction of shortages is misleading, and that the supply demand difference is much closer. (10/16 RT 245:8-246-2; 8 O.)

Soils & Water Table 4
--BBID's Projected Average Annual Demands (acre-feet per year)

Demand Type	2000	2010	2020	2030	2040
Total District Water Right	50,000	50,000	50,000	50,000	50,000
Supply from Recycled Water(1)		2,372	5,337	5,930	5,930
Total Water Supply	50,000	52,372	55,337	55,930	55,930
Agricultural Use	31,400	35,400	31,028	31,028	31,028
Identified Municipal and Industrial Use					
Mountain House (RWSA 1)		4,641	9,415	9,415	9,415
East Altamont Energy Center (2)		4,616	4,616	4,616	4,616
Tracy Hills (RWSA 2)		1,700	3,006	3,006	3,006
Subtotal-- Identified M&I Use		10,957	17,037	17,037	17,037
Predicted Additional M&I Use (3)					
Unimin Industrial Use	125	500	500	500	500
East County Airport			500	750	1,000
Byron			500	600	600
Subtotal-- Predicted Additional M&I Use	125	500	1,500	1,850	2,100
Subtotal-- Predicted+ Identified M&I Use	125	11,457	18,537	18,887	19,137
Subtotal-- Agricultural + Identified and Predicted M&I Use	31,525	46,857	49,565	49,915	50,165
Available Supplies	18,475	5,515	5,772	6,015	5,765

(1) From June 20, 2002, letter to CEC from MHCSD
(2) From March 2001 AFC for East Altamont Energy Center
(3) Placeholder for future unknown demand
Source: (Exs. 8 O; 9, pp. 3-; 9B; 9 C.)

In reviewing the combined data, comparison of the total projected demand in the planning period of 2040 (50,165 afy), with only BBID's pre-1914 fresh (raw) water right (50,000 afy), absent any recycled water supply, shows demand exceeding supply in both average year conditions and dry year conditions. BBID contends that the supply shortfall is offset by the generally conservative nature of its analysis.[114] (Exs. 8 O; 9, p. 7; 10/16 RT 45:5-51-21; ***Table 4***, above.)

For example, BBID contends that the water demand requirement estimated for agricultural uses (31,028) are based on its governing board's direction that planning-level analyses reflect maintenance of supplies to deliver water to all of BBID's irrigable acres. In actual practice, however, the full irrigation of stand-by lands in any given year is an extraordinary condition. Examination of the historical record of irrigation use indicates that this condition has not occurred. Therefore, BBID's contends that the needs of its customers can be met by using portions of the stand-by acreage supplies on an annual case-by-case basis. This allocation of supplies reflects the management decisions that will be made by BBID's General Manager in any given year, incorporating the needs of its customers on a yearly basis with the available supplies. (Ex. 9, p. 7; 10/16 RT 47:1-48:4; ***Table 4***, above.)

In addition, BBID contends that as a holder of pre-1914 water rights, its water supply source is not affected by hydrologic year conditions. Mr. Nuss testified that BBID has and never will experience a reduction in water rights due to a hydrologic condition. Mr. Nuss also testified that water resources planning recognize that recycled water supplies are essentially drought-proof. The

---

[114] Both Staff and Intervenor Sarvey dispute BBID's claim of the conservative nature of its analysis. In fact, Staff has identified a potential for a significant adverse impact from the project's use of fresh water. Staff cites to historical data, which shows great variability (up to 30%) in the actual demand for fresh water in the BBID service area, particularly during dry hydrologic years. Such variability was not taken into consideration by BBID's testimony. (10/16 RT 258:3-259:13; Ex. 1, p. 5.14-44; Staff Closing Brief, p. 6.)

planning assumptions for the MHCSD supply reflect this high-degree of reliability and availability of recycled water supplies. (Ex. 9, p. 7; 10/16 RT 47:19-48-11.)

According to Mr. Nuss, in a dry hydrologic year, water conservation will occur within BBID's boundaries. Based on the planning assumptions of the developers for the two new urban areas within the District (Mountain House and Tracy Hills), water demands will reduce by a minimum of 10-percent (1,200 ayf) from the values shown above in ***Table 4***. (Ex. 9, p. 7; 10/16 RT 49:7.)

Some reduction of agricultural demands from ***Table 4*** values is expected in dry hydrologic year conditions. Even though the per acre crop demand is expected to increase in a dry year condition (reflecting a reduced amount of stored soil moisture from winter rains), less acreage is typically brought into production in these conditions (as reflected by experience at the District). In addition, the lands that are irrigated in dry year conditions reflect a conservation ethic of the District's agricultural customers, with increased attention provided to water management by the irrigators in these conditions. (Ex. 9, p. 7; 10/16 RT 47:19-48-11.)[115]

Based upon BBID's updated water supply and demand analysis described in ***Table 4***, Mr. Nuss, in his testimony provided revisions to the tables Staff offered in the FSA. BBID's revisions are shown in underlined text. (Ex. 9, pp. 12-14; **SOILS & WATER-Tables 5, 6 & 7**, below.)

[115] Based upon its review of BBID's historical patterns of use, Staff came to the opposite conclusion: that BBID's water use for agricultural customers rose over 30% under dry year hydrological conditions. (10/16 RT 257:22-261-6; 304:18-306:14; 307:14-313:12.)

Soils & Water Table 5
BBID's Projected Average Annual Water Demands, 2000 - 2040 (afy)
(Using the Applicant's Projected Estimates of EAEC's Fresh Water Demands & Recycled Water Availability)[116]

Demand Type	2000	2010	2020	2030	2040
Agricultural Use	**31,400**	**35,400**	**31,028**	**31,028**	**31,028**
Municipal & Industrial Use					
Discovery Bay West		0	0	0	0
Unimin Industrial Use	125	500	500	500	500
Mountain House	-	4,641	9,415	9,415	9,415
Tracy Hills	-	1,700	3,006	3,006	3,006
East County Airport	-	0	500	750	1,000
Byron	-	0	500	600	600
Subtotal – Municipal & Industrial Use	**125**	**6,841**	**13,921**	**14,271**	**14,521**
Total–Agric., Muni. & Indus. Use	**31,525**	**42,241**	**44,949**	**45,299**	**45,549**
Plus Average Annual Raw Water Use by EAEC* (based on 4,616 afy water demands)	**-**	**4,616**	**4,616**	**4,616**	**4,616**
BBID's Projected Demands based on EAEC Average Water Demands	**-**	**46,857**	**49,565**	**49,915**	**50,165**
Peak Annual Raw Water Use by EAEC* (based on 7,000 afy water demands)	**-**	**7,000**	**7,000**	**7,000**	**7,000**
BBID's Projected Demands based on EAEC Peak Water Demands	**31,525**	**49,241**	**51,949**	**52,299**	**52,549**

Assumes some recycled water use by EAEC as Applicant proposed in the AFC, **Soils and Water Table 7.**

Shaded areas denote demands projected to exceed BBID's fresh water resources of 50,000 afy.
Source: (Ex. 9 D.)

Soils & Water Table 6
BBID's Projected Average Annual Water Demands, 2000-2040 (afy)
(Assuming 100% Fresh Water for Supply to EAEC)[117]

Demand Type	2000	2010	2020	2030	2040
Other BBID Agric, Muni. & Indus. Use	**31,525**	**42,241**	**44,949**	**45,299**	**45,949**
Plus Average Annual Raw Water Use by EAEC* (based on using only fresh water)		**4,616**	**4,616**	**4,616**	**4,616**
BBID's Total Projected Demands based on EAEC Average Water Demands		**46,857**	**49,565**	**49,915**	**50,165**
Peak Annual Raw Water Use by EAEC* (based on using only fresh water)		**7,000**	**7,000**	**7,000**	**7,000**
BBID's Total Projected Demands based on EAEC Peak Water Demands		**49,241**	**51,949**	**52,299**	**52,549**

Shaded areas denote demands projected to exceed BBID's fresh water resources of 50,000 afy.
Source: (Ex. 9 E.)

---

[116] BBID's Revised Table 10 from the FSA. (10/16 RT 58:3-59-7.)

[117] Revised Table 11 from the FSA. (10/16 RT 59:8-12; Ex 8 O.)

Soils & Water Table 7
BBID's Projected Average Annual Water Demands, 2000 - 2040 (afy)
(Resulting From EAEC's Full Utilization of MHCSD's Recycled Water)[118]

Demand Type	2000	2010	2020	2030	2040
Other BBID Agric, Muni. & Indus. Use	31,525	42,241	44,949	45,299	45,949
Plus Average Annual Raw Water Use by EAEC* (based on 4,616 afy water demands)		2,224	0	0	0
BBID's Total Projected Raw Water Demands based on EAEC Average Water Demands		44,465	44,949	45,299	45,949
Peak Annual Raw Water Use by EAEC* (based on 7,000 afy water demands)		4,628	1,663	1,070	1,070
BBID's Total Projected Raw Water Demands based on EAEC Peak Water Demands		46,898	46,612	46,369	47,019

* Assumes some recycled water use by EAEC as proposed by MHCSD in Soils & Water Table 12.
Shaded areas denote demands projected to exceed BBID's fresh water resources of 50,000 afy.
Source: (Ex. 9 F.)

In terms of Staff's proposed **Condition SOILS & WATER-5, 6 & 7,** BBID as does the Applicant, challenges their propriety. (Exs. 8, pp. 9/10; 9, pp. 11/12.) BBID argues that it has the statutory duty to develop its water resources and allocate its water supply among its customers in an equitable, efficient and environmentally sound manner. BBID's decisions regarding the allocation of its water resources must be done comprehensively taking into consideration the needs of all of its customers. While Staff's proposed **Conditions 5, 6, and 7** are directed to the Applicant, they would effectively usurp BBID's authority in operating, maintaining and allocating its water resources and would specifically override its exercise of judgment on the sizing and staging of future capital construction. (10/16 RT 33:25-34-3; 56:9-58:14; Ex. 80.)

Moreover, BBID argues that mandating the construction of significant water delivery facilities proposed **Condition SOILS & WATER-7** a decade before it can be placed into service is inconsistent with good planning practices. The

[118] Revised Table 13 from the FSA. (10/16 RT 59:13-21; Ex. 80.)

infrastructure requirements are not fully known at this time. Decisions made based on incomplete information are likely to increase the cost of service to the District's customers. (Exs. 8, pp. 9/10; 80; 9, pp. 11/12.)

In particular, proposed **Condition SOILS & WATER-6** directly interferes with the District's ability to negotiate its own agreement for recycled water. The CEC cannot override the District's authority to negotiate commercial terms and conditions, which are in the best interest of the overall District. **Condition 6** imposes an artificial deadline on BBID for completing the negotiations of a water supply service agreement. The risk associated with developing an agreement based on incomplete information regarding the availability of recycled water and costs will be shifted to BBID and its other customers. It would be inappropriate and unacceptable for the CEC to interfere with the lawful operations of the District by adopting Staff's recommendations regarding Conditions 5 and 6. From a financial standpoint as well as from the standpoint of the agency that has to manage and allocate its water resources, BBID is the only agency that can accurately assess whether the commercial terms are acceptable and whether it makes sense for BBID to enter into such an agreement at the time it is negotiated. (Exs. 8, pp. 9/10; 8 O; 9, pp. 11/12.)

c. Staff

Water use for the proposed EAEC is divided into four main levels based on the quality required:

(1) water for the circulating or cooling water system;

(2) service water for the plant, which includes all other miscellaneous uses;

(3) demineralized water for makeup to the HRSG's and auxiliary boilers; and

(4) potable water for drinking and lavatory use. (Ex. 1, p. 5.14-3.)

Ninety-nine percent of the project's overall water demand during normal operations) is cooling water, which will be raw (fresh) water or recycled water

(tertiary treated) as-is without further treatment. Service water for the plant, including fire water, will be obtained from the cooling tower blowdown stream after filtration and water softening. A dedicated fire water supply will be contained in the reverse osmosis feed water storage tank sufficient for a 2-hour worse case fire. Demineralized water for makeup to the HRSG's and auxiliary boilers will be obtained from treatment of the cooling tower blowdown reject stream, utilizing distillate from the brine concentrator with additional polishing from the mixed bed demineralizer. Domestic potable water will be generated on-site from raw water delivered by BBID using a package treatment plant unit (US Filter Water Boy pre-engineered package plant with microfiltration and UV disinfection or equivalent). (Ex. 1, p. 5.14-3.)

Summarized below are the use of water for EAEC operations, and the discharge of wastewater associated with the proposed EAEC.

Soils & Water Table 8
1. EAEC Facility Water Balance

Component Stream	Average Day (gpm)	Peak Day (gpm)
Turbine Injection Water	0	*122* (See Note 3)
Cooling Tower Makeup	3,264	6,822
Brine Concentration Distillate fed to HRSG's/ Steam Cycle	*50* (See Note 3)	647
Reuse in Cooling Tower of Liquid Waste Streams	- 451	- 1,058
Demin. Water from Storage	0	*218* (See Note 3)
HRSG Stack	0	*776* (See Note 3)
Total Water Consumption (Net)	**2,813**	**6,411**
Blowdown HRSG's	Recycled To Cooling Tower	Recycled To Cooling Tower
Blowdown Cooling Tower	Recycled to Cooling Tower	Recycled to Cooling Tower
Plant Drainage	Recycled to Cooling Tower	Recycled to Cooling Tower
Brine Concentrator	Recycled to Cooling Tower & HRSG's	Recycled to Cooling Tower & HRSG's
Sanitary Wastewater	To Leach Field	To Leach Field
Total Wastewater (Net)	**0**	**0**

Source: (Ex. 1, p. 5.14-4.)

Notes:
1. Blowdown from the cooling tower assumes 7 cycles of concentration.
2. Flow rates reflect conditions using 100% fresh water.
3. Denotes quantity already accounted for in other Component Streams of the water balance.

(1) Fresh or Raw Water

BBID's fresh water supply is of high quality that varies according to season and hydrologic conditions in the Delta, and is characterized in the ranges set forth below in ***Table 9***.[119] (10/16 RT 234:19-236-22.)

Currently, BBID primarily supplies raw water to agricultural water users in its service area, with one current industrial user-Unimin Corporation-using water for aggregate mining and processing. During year 2000, the water put to beneficial use (as defined by the RWQCB)[120] by BBID was 31,711 acre-feet. Applicant has represented that BBID, through conservation and recent reductions in agricultural customer diversions, has reduced its water use from historic highs, and that use by EAEC combined with use by BBID's other customers, would be within historic patterns of use. (Ex. 1, p. 5.14-10.)

According to Staff, however, Applicant has not provided any quantified data of BBID's historic water savings accomplished through conservation and or agricultural customer reduction measures. (10/16 RT 261:11-25; Ex. 1, p. 5.14-10; Staff Opening Brief on Phase 1 Topics, p. 10.)

---

[119] CCWD advises us that the water quality information presented by Staff is not entirely representative of the highly variable water quality found in the California Aqueduct, where BBID draws its water supply. For example, monthly samples taken from the Banks Pumping Station over the past 16 years show ranges of 10 mg/L to 116 mg/L for chlorides, and 101 mg/L to 475 mg/L for total dissolved solids (tds), which is within drinking water standards of a maximum 500 mg/L. Water quality in the Delta is the worst in October and November, months when BBID is proposing to increase its water diversions to supply the EAEC. (10/16 RT 235:19-236-1; Ex. 4 D 2, p. 2.)

[120] In California, The Porter-Cologne Water Quality Control Act of 1967, Water Code Section 13000 et seq., requires the State Water Resources Control Board (SWRCB) and the nine RWQCBs to adopt water quality criteria to protect state waters. Those criteria include the identification of beneficial uses, narrative and numerical water quality standards and implementation procedures. Water quality criteria for the project area are contained in the Water Quality Control Plan for the Central Valley Region (CVRWCB). This plan sets numerical and/or narrative water quality standards controlling the discharge of wastes to the state's waters and land. Those standards are applied to the proposed project through the Waste Discharge Requirements (WDRs) permit issued by the CVRWQCB. (Ex. 1, p. 5.14-1/-2.)

Soils & Water Table 9
BBID's Fresh Water Quality

CONSTITUENT	RANGE OF WATER QUALITY (MG/L)
Total Dissolved Solids	110 to 300
Alkalinity	40 to 95
Arsenic	0.001 to 0.003
Boron	<0.1 to 0.4
Bromide	0.04 to 0.21
Calcium	11 to 25
Total Organic Carbon	3 to 7
Chloride	18 to 67
Copper	<0.005 to 0.02
Hardness	48 to 118
Magnesium	2 to 14
Selenium	<0.001 to 0.001
Sodium	17 to 65
Sulfate	14 to 59

Note: Data based on monthly grab sample data collected from the SWP Intake Channel during 1995, 1996, and 1997 (through August). Data supplemented with grab sample data collected from SWP Intake Channel in July 1999
Source: (Ex. 1, p. 5.14-10.)

BBID's entitlement to fresh (raw) water is under a Pre-1914 Appropriative Water Right, established originally by its predecessor, the Byron-Bethany Irrigation Company, by filing a Notice of Appropriation of Water in Contra Costa County on May 18, 1914. Since publication of the PSA, BBID and DWR negotiated an agreement that defines BBID's right to divert 50,000 afy, at a rate not to exceed 300 cubic feet per second (cfs), without causing injury to the SWP.[121] Although From 1969 to 2000, BBID's historic diversions are summarized as follows below in ***Table 10***.

[121] DWR is responsible for maintaining Delta water quality consistent with the initiatives developed under CalFed, particularly during the most critical period of summer as typically occurs between late June through early September. The agreement to limit BBID's fresh water diversion to no more than 50,000 afy appears to be more in line with BBID's historic use. Not considering the demands by EAEC, BBID's projected average annual water demand is expected to approach if not exceed the agreed limit of 50,000 afy within the life of the EAEC project. (Ex. 1, p. 5.14-18.)

Soils & Water Table 10
BBID's Historic Annual Diversions, 1969–2000

YEAR	ANNUAL QUANTITY OF WATER DIVERTED (ACRE-FEET)
1969	32,404
1970	31,487
1971	39,222
1972	47,024
1973	38,437
1974	41,378
1975	41,408
1976	55,387
1977	52,517
1978	39,503
1979	43,897
1980	39,238
1981	40,390
1982	33,683
1983	24,023
1984	39,369
1985	32,405
1986	30,067
1987	35,438
1988	41,126
1989	37,355
1990	42,963
1991	37,214
1992	38,507
1993	33,175
1994	38,657
1995	25,060
1996	30,065
1997	35,368
1998	28,637
1999	33,003
2000	31,711

Note: Annual historic diversion data as supplied by BBID to DWR.
Source: (Ex. 1, p. 5.14-11.)

Applicant and BBID claimed earlier in this proceeding that BBID was entitled to divert up to 60, 000 afy, the DWR/BBID agreement caps this diversion amount at 50,000 afy. (Ex. 1, p. 5.14-11/12;10/16 RT 29:6-31-31.)

Once acquired, an appropriative water right is maintained only by continuous beneficial use of the water. Regardless of the amount claimed in the original notice of appropriation or at the time diversion and use first began, the amount which can at any time be rightfully claimed under an appropriative right initiated prior to December 19, 1914, becomes fixed by actual beneficial use as to both amount and season of diversion. (Ex. 1, p. 5.14-16.)

Defining amount and season of diversion can be accomplished by specifying water volumes or ranges of flow diverted by month. The conditions under which an appropriative water right can be forfeited in whole or in part include "due to nonuse" or failure to put water to beneficial use for a period of several years. Current law defines this period as five years or more. (Water Code § 1241; *Smith v. Hawkins* (1895) 110 Cal. 122.)

In order to assess if the EAEC will create any significant change in the historic patterns of use, Staff reviewed a summary of BBID's average monthly use of water over a 32-year period between 1969–2000, along with projections of initial fresh water use by EAEC below in **Soils & Water Table 11**.

In reference to BBID's historic demands, it appears that water supply to EAEC will change BBID's existing and historical patterns of water use, particularly during the months of November–February each winter.[122]

---

[122] The Committee notes that because of the agreement with DWR, BBID will increase its historical usage from an average of 37,113 afy up to 50,000 afy, a potential difference of up to 12, 887 afy. (*Cf.* Tables 10 & 11.)

Soils & Water Table 11

2. BBID's 1969–2000 Historic Average Monthly Water Demands with Projected Supply to EAEC (Acre-Feet)

Month	BBID's Avg. Historic Demands	Initial Supply To EAEC (2005)	Total–BBID Demands with EAEC (2005)	% Increase from Historical Demand due to EAEC
January	163	306	469	188%
February	292	276	568	95%
March	1,268	306	1,574	24%
April	3,460	296	3,756	9%
May	6,077	306	6,383	5%
June	7,223	545	7,768	8%
July	7,305	564	7,869	8%
August	6,516	564	7,080	9%
September	3,871	545	4,416	14%
October	1,131	306	1,437	27%
November	41	296	337	721%
December	29	306	335	1,055%
Total	37,113	4,616	41,729	12%

Source: (Ex. 1, p. 5.14-17.)

The AFC indicates BBID's normal maintenance schedule for their canals requires them to be shut down from November through March for cleaning of aquatic weeds and canal bank reshaping, which explains why BBID's historic use during these months is so low. If BBID were to supply EAEC with fresh water year-round, it would result in a drastic change in BBID's water deliveries for these winter months. (Ex. 1, p. 5.14-17.)

During normal and wet hydrologic conditions, the change in BBID's season of use to higher diversions in winter could be viewed as a positive result, because generally water is available for diversion in excess of natural flows in the Delta. (Ex. 1, p. 5.14-17.)

Nevertheless, during dry hydrologic conditions, even winter flows in the Delta may not be adequate to meet all demands of existing water users and their entitlements. Staff testified that BBID's water projection calculations do not provide for the full variability that BBID has experienced historically under dry hydrologic conditions. Under such conditions, Staff pointed to evidence showing

over a 30 percent higher differential in water use, primarily to serve its agricultural users. (10/16 RT 257:22-261-6; Ex. 1, p. 5.14-17.)

However, with implementation of Staff's recommendations for full use of recycled water by EAEC (see below), Staff believes that any concerns regarding a potential change in the season of use caused by EAEC are moot. (Ex. 1, p. 5.14-17.)

During year 2000, BBID served approximately 31,000-acre-feet to its agricultural customers, and 700 acre-feet to its industrial customer, for a total supply of 31,700 afy. Excluding EAEC, BBID either has committed or is planning to commit fresh water supply to new customers as shown below in **Soils & Water Table 13**. BBID's projected demands show an increase in the annual quantity of water to be used in the district, primarily as the result of an increase in municipal and industrial customers. (Ex. 1, p. 5.14-18.)

Staff has inquired as to the status of development of the two largest new customers, Mountain House and Tracy Hills. Mountain House is initiating residential construction of the first of twelve phases. The proposed Tracy Hills development, which has been annexed by the City of Tracy, is included in the City's approved General Plan, its EIR has been certified under CEQA, and a specific development plan has been approved by the City of Tracy. Staff also understands that BBID has annexed the approximately 2,000 acres for the proposed Tracy Hills development into its service area. BBID would supply raw water to City of Tracy for treatment and distribution to Tracy Hills. (Ex. 1, p. 5.14-19; *see also* **SOILS & WATER Table 20**, *infra.)*

Applicant requested and Staff considered impacts associated with EAEC using 100 percent raw water and no recycled water. The effect on BBID's total system demands is shown below in **Soils & Water Table 12**.[123]

Soils & Water Table 12
4. BBID's Projected Average Annual Water Demands, 2000 - 2040 (afy)
(Assuming 100% Fresh Water for Supply to EAEC)

Demand Type	2000	2010	2020	2030	2040
Other BBID Agric, Muni. & Indus. Use	31,700	48,541	50,615	47,815	45,015
Plus Average Annual Raw Water Use by EAEC* (based on using only fresh water)		4,616	4,616	4,616	4,616
BBID's Total Projected Demands based on EAEC Average Water Demands		53,157	55,231	52,431	49,631
Peak Annual Raw Water Use by EAEC* (based on using only fresh water)		7,000	7,000	7,000	7,000
BBID's Total Projected Demands based on EAEC Peak Water Demands		55,541	57,615	54,815	52,015

Shaded areas denote demands projected to exceed BBID's fresh water resources of 50,000 afy.
Source: (Ex. 1, p. 5.14-20.)

Under this scenario, and assuming EAEC's **average** annual demands, BBID's total system demands are projected to exceed supply by about:

- 3,157 afy in 2010;
- 5,231 afy in 2020; and
- 2,431 afy in 2030.

Under a scenario where EAEC's **peak** annual water demands are met entirely with fresh water, BBID's total system demands are projected to exceed supply by about:

- 5,541 afy in 2010;
- 7,615 afy in 2020;

[123] See Table 6, *infra,* where BBID adjusted Staff's Table with downward estimates in recalculating its water demand projections because of the agreement between DWR and BBID, that BBID may divert only 50,000 afy. At the time of the FSA, Staff had relied on the information provided earlier in this proceeding by Applicant and BBID to determine EAEC's possible impact on BBID's fresh water supplies. (Exs. 1, p. 5.14-19; 8 D.)

- 4,815 afy in 2030; and
- 2,015 afy in 2040. (Ex. 1, p. 5.14-20.)

When EAEC's proposed raw water demand is added to BBID's other demand projections, Staff found in the AFC that that there is insufficient fresh (raw) water supplies to serve all of BBID's demands as early as 2010 and thereafter for essentially the balance of the life of the project (the next 25 years) for both average and peak annual. If EAEC's proposed use of raw water is approved, without the use of recycled water, Staff found that BBID together with the proposed project would:

- diminish local fresh water supplies;
- deprive BBID's other customers of fresh water supplies; or
- result in inadequate supply to the EAEC project itself; and
- be a wasteful and unreasonable use of high quality, fresh inland water. (10/16 RT 232:8-25; Ex. 1, p. 5.14-20.)[124]

Staff reviewed BBID's revised (because of the agreement with DWR limiting fresh (raw) water withdrawals from the Delta to 50,000 afy) projected average annual demands on its water supply. BBID's revised projections did not alter Staff's conclusion, in particular during peak demand: that BBID would exhaust its water supply within the life of the EAEC project, were BBID to rely solely on its fresh (raw) water supply from the California Delta. (10/16 RT 233:4-234-3; *see* ***SOILS & WATER*** **Tables 5-7**; *supra,* Ex. 8 D.)

Staff contends that this effect is in conflict with CEQA guidelines as specified under Appendix G–Environmental Checklist Form, Section XVI – Utilities and Service Systems, posing the question, "(w)ould the project: d) Have sufficient

[124] Staff Opening Reply Brief on Phase 1 Topics, p. 7.

water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed"? (Ex. 1, p. 5.14-20.)

Because BBID may be overcommitted in the near future, it is likely that without maximum use of local recycled water, there would not be enough water to serve EAEC and BBID's other customers. This would then result in significant adverse impacts to water supplies and to other users of this supply.

(a) Reclaimed/Recycled Water

To reduce the use of fresh water over time, Applicant proposes to use tertiary treated, recycled wastewater from the MHCSD wastewater treatment plant to meet a portion of its demand if it becomes available through BBID on terms and conditions acceptable to EAEC. Applicant has proposed to construct the EAEC so that it is physically capable of using recycled water. Staff testified that it knows of no physical constraints that could preclude Applicant's 100% use of recycled water. (10/16 RT 242:11-207-3; Ex. 1, p. 5.14-12.)

> **MS. DeCARLO**: And are there any physical constraints that would bar the use of 100 percent recycled water for cooling tower purposes at the plant?
>
> **MR. KESSLER**: Not that we're aware of.
>
> **MS. WHITE**: And I just want to point out that currently there's no infrastructure in place to serve either raw water or recycled water to the project. Those conveyance facilities and pump stations were included as part of facilities defined as EAEC. So staff at least ruled out a conveyance constraint related to getting water to the project once it's produced by Mountain House or as an increased diversion by BBID. So physical constraints were taken into consideration, but since a part of the proposal we found that there were no environmental problems associated with those, those have been analyzed; they're consistent with LORS; and they would accomplish what the applicant has suggested.
>
> **MS. DeCARLO**: And who would be producing the recycled water?

> **MS. WHITE**: The Mountain House Community Services District wastewater treatment facility.
>
> **MS. DeCARLO**: Do you have any indication of how much water they're willing to supply to the East Altamont Energy Center?
>
> **MR. KESSLER**: They have indicated they're willing to supply 100 percent, and they're also entitled to do that without any regulatory restrictions. (10/16 RT 242:16-243-23.)
>
> **MS. WHITE**: You have a--whether it's in 2020 or 2040, BBID approaching or exceeding their 50,000 raw water limit. Limited information on other resources available for development by BBID, they have looked at Tracy, they have looked at other recycled water sources. Mountain House tends to be the most economic. They have pointed to Mountain House as being where they want to start their program first. The applicant has suggested that Mountain House has to use a portion of the recycled water they generate. Mountain House has told us they don't. That, in fact, if they could get to a point where an agreement was reached, they could commit to providing all of the water to the project. (10/16 RT 250:7-22.)

MHCSD has completed construction of a water treatment plant and a wastewater treatment. MHCSD will treat raw water it receives from BBID to potable quality before supplying it to its residents, and will treat its wastewater to Title 22 tertiary standards. Both the water treatment and wastewater treatment facilities are expected to begin providing services by December 2002. (Ex. 1, p. 5.14-12.)[125]

Conservative growth projections have the Mountain House development fully built out by 2020. As the community develops, the MHCSD treatment facility will produce an increasing amount of recycled water, estimated at approximately 2,965 afy by 2010, 4,448 afy by 2015, and 5,930 afy by 2020 or earlier, with a peak daily rate of 5.4 mgd, as set forth below in **Soils & Water Table 13**.

---

[125] Current RWQCB permits to MHCSD allow the tertiary treated effluent to be discharged to Old River and to farmland, with no restrictions to developing other uses for the recycled water supply. (Ex. 1, p. 5.14-12.)

Soils & Water Table 13

Applicant's Projected Availability and Allocation of MHCSD Recycled Water Supply (afy)

YEAR	2000	2005	2010	2015	2020	2025	2030	2035	2040
Total Recycled Water Produced	0	1,483	2,965	4,448	5,930	5,930	5,930	5,930	5,930
MHCSD's Estimated Use	0	983	1,155	1,953	3,046	3,046	3,046	3,046	3,046
Resulting Supply to EAEC	0	500	1,810	2,495	2,884	2,884	2,884	2,884	2,884

Source: (Ex. 1, p. 5.14-13.)

As to Applicant's claims that it would be premature to construct the recycled water pipeline prior to operation, Staff notes that the EAEC AFC lists:

- preferred and alternative routes for the recycled water pipeline as part of the Project Description;
- provides for recycled water use as early as 2005;
- provides [by factoring in licensing delays] that the facility will not be operational until 2005 or 2006; and
- as with fresh (raw) water, Applicant has committed to build the required pipelines to transport water to the proposed facility. (10/16 RT 254:9-257-12; 263:4-7.)

Assuming recycled water and the infrastructure to support its delivery to the EAEC is made available; BBID's water supply is thus enhanced. (Ex. 1, p. 5.14-19; see ***Soils & Water Table 14*** below.)[126]

[126] In Table 5, *infra*, BBID provided its adjusted Table 14.

Soils & Water Table 14
5. BBID's Projected Average Annual Water Demands, 2000 - 2040 (afy)
(Using the Applicant's Projected Estimates of EAEC's Fresh Water Demands & Recycled Water Availability)

Demand Type	2000	2010	2020	2030	2040
Agricultural Use	**31,000**	**34,300**	**31,400**	**28,500**	**25,600**
Municipal & Industrial Use					
Discovery Bay West	-	500	500	500	500
Unimin Industrial Use	700	1,500	1,500	1,500	1,500
Mountain House	-	4,641	9,415	9,415	9,415
Tracy Hills	-	6,000	6,000	6,000	6,000
East County Airport	-	1,100	1,200	1,200	1,300
Byron	-	500	600	700	700
Subtotal – Municipal & Industrial Use	**700**	**14,241**	**19,215**	**19,315**	**19,415**
Total – Agric. , Muni. & Indus. Use	**31,700**	**48,541**	**50,615**	**47,815**	**45,015**
Plus Average Annual Raw Water Use by EAEC* (based on 4,616 afy water demands)	**-**	**2,806**	**1,732**	**1,732**	**1,732**
BBID's Projected Demands based on EAEC Average Water Demands	**-**	**51,347**	**55,215**	**49,547**	**46,747**
Peak Annual Raw Water Use by EAEC* (based on 7,000 afy water demands)	**-**	**5,190**	**4,116**	**4,116**	**4,116**
BBID's Projected Demands based on EAEC Peak Water Demands	**-**	**53,731**	**54,731**	**51,931**	**49,131**

*Assumes some recycled water use by EAEC as proposed by Applicant in Soils & Water Table 7.
Shaded areas denote demands projected to exceed BBID's fresh water resources of 50,000 afy.
Source: (Ex. 1, p. 5.14-19.)

Moreover, Staff has determined that use by the EAEC of recycled water:

- will have costs of supply and treatment comparable to or less than the cost of supplying raw water;
- will not be detrimental to public health;
- will not adversely affect downstream water rights;
- will not be injurious to plant life, fish and wildlife and
- has the support of the CVRWQCB and the CCWD. (10/16 RT 263:15-268-12.)

According to Staff, at the December 19, 2001 workshop, Applicant affirmed their conditional intent to use recycled water to meet a portion of its demand (at most 60 percent by 2020 and thereafter). Also at this workshop, Mountain House representatives informed staff that all of the recycled water to be produced at the MHCSD wastewater treatment facility could be made available to the project. This resource essentially could meet the entire project cooling water demands by

2020 or earlier based on serving EAEC's average annual demands of 4,616 afy (Ex. 1, p. 5.14-21.)

Estimate of MHCSD recycled water that could be made available to EAEC, and the amounts of raw water that would be needed in early years to make-up the difference in EAEC demands and recycled water availability are shown below in **Soils & Water Table 15**. (10/16 RT 243:12-244-8.)

Soils & Water Table 15
MHCSD's Projected Recycled Water Supplies Available to EAEC
(Assuming Full Use of MHCSD Recycled Water Supply by EAEC)
Fresh and Recycled Water (Average Annual in acre-feet)

Year	2000	2005	2010	2015	2020	2025	2030	2035	2040
MHCSD's Available Recycled Supply	0	890	2,372	3,855	5,337 (Note 2)	5,930 (Note 2)	5,930 (Note 2)	5,930 (Note 2)	5,930 (Note 2)
BBID Fresh Water Supply Needed to Augment Recycled Water	0	3,726	2,224	761	0	0	0	0	0
Total Avg. Annual Use by EAEC	0	4,616	4,616	4,616	4,616	4,616	4,616	4,616	4,616

Note 1: EAEC's Average Annual Demand is projected to be 4,616 afy. Beginning in 2018 or 2019, recycled water from MHCSD is projected to exceed the average annual demand. In the event of peak years, raw water may be required, but on a limited basis, for supply augmentation and or back-up.

Note 2: The total amount projected to be available from MHCSD's Recycled Water Supply is shown as an indication of additional water available to meet EAEC peak demands in excess of its average annual demands.
Source: (Ex. 1, p. 5.14-21.)

Applicant has proposed to use recycled water to meet only a portion of its overall water demand, and would rely on fresh water supplies to meet its water requirements for most of the project's life. As offered by MHCSD, there are no technical reasons that prevent EAEC from using recycled water to meet nearly 100 percent of its cooling and non-potable water demand by 2020 or earlier. Staff also reviewed the findings of BBID's Recycled Water Feasibility Study and agrees with its findings that:

- EAEC's use of recycled water for cooling is feasible and with some additional treatment, could be used for process water;
- industrial use of recycled water is the preferred alternative;

- BBID should focus the initial development of recycled water on the EAEC. (Ex. 1, p. 5.14-21/22.)

Staff has quantified the benefits of EAEC fully utilizing MHCSD's recycled water through a delivery arrangement with BBID, and reducing EAEC's demands of BBID's fresh water below in **Soils & Water Table 16**.[127]

Soils & Water Table 16
BBID's Projected Average Annual Water Demands, 2000 - 2040 (afy)
(Resulting From EAEC's Full Utilization of MHCSD's Recycled Water)

Demand Type	2000	2010	2020	2030	2040
Other BBID Agric, Muni. & Indus. Use	31,700	48,541	50,615	47,815	45,015
Plus Average Annual Raw Water Use by EAEC* (based on 4,616 afy water demands)		2,224	0	0	0
BBID's Total Projected Raw Water Demands based on EAEC Average Water Demands		50,765	50,615	47,815	45,015
Peak Annual Raw Water Use by EAEC* (based on 7,000 afy water demands)		4,628	1,663	1,070	1,070
BBID's Total Projected Raw Water Demands based on EAEC Peak Water Demands		53,169	52,278	48,885	46,085

* Assumes some recycled water use by EAEC as proposed by MHCSD in Soils & Water Table 15.
Shaded areas denote demands projected to exceed BBID's fresh water resources of 50,000 afy.
Source: (Ex. 1, p. 5.14-22.)

Under this scenario assuming EAEC's average annual demands, BBID's total system demands are projected to exceed supply by about 765 afy in 2010 and 615 afy in 2020, and likely no exceedance soon thereafter 2020. (Ex. 1, p. 5.14-22.)

Under a scenario assuming EAEC's peak annual water demands, BBID's total system demands are projected to exceed supply by about 3,169 afy in 2010 and 2,278 afy in 2020. Staff believes that if EAEC were to implement full utilization of MHCSD's recycled water supply, BBID could achieve additional conservation within its fresh water supply district and potentially develop other sources of

[127] BBID's version is shown in Table 7, *infra*.

recycled water not reflected in **Soils & Water Table 16,** in order to meet its projected demands for other users. (10/16 RT 316:8-319-16; Ex. 1, p. 5.14-22.)

The project's maximum use of recycled water will result in benefits beyond just assuring that there will be sufficient supplies of fresh water to serve other users. It should also be recognized that the quantity of recycled water to be used by EAEC would be relatively consistent on a month-to-month basis, whereas alternative uses of MHCSD's recycled water by either agriculture or landscape/golf course irrigation are typically seasonal. Staff estimates that maximal use of recycled water by EAEC would result in nearly twice the amount of recycled water consumed than compared to agricultural and landscape/golf course irrigation. (10/16 RT 244:12-247-11; Ex. 1, p. 5.14-21.)

In addition, EAEC's use of MHCSD's recycled water maintains water quality in the Delta by avoiding or minimizing the discharge of any excess treated wastewater into Old River, which empties into the Delta. Even though the wastewater from MHCSD is tertiary treated, it is expected to be of lesser quality than Delta water.[128] (10/16 RT 246:23-247-11; Ex. 1, p. 5.14-23.)

Thus, Staff found that if the project were to use only fresh water diverted from the Delta and reclaimed water in turn was discharged to Old River, which eventually discharges to the Delta, it is possible for eventual indirect water quality impacts to occur. In turn, Staff found that use of MHCSD tertiary treated water, in lieu of raw water from the Delta, is beneficial by reducing the amount of wastewater return flows to Old River and avoiding increased fresh water diversions from the Delta. (Ex. 1, p. 5.14-21.)

---

[128] CCWD, which draws its water supplies downstream of where the raw water is removed and the MHCSD recycled water, as currently permitted, will discharge, is concerned about indirect impacts to the Delta area from using high quality water for power plant cooling while tertiary treated wastewater is discharged to the Delta. It is their position that fewer impacts would occur to the Delta and ultimately their supply if the recycled water were used by the power plant, and not discharged to Old River, thereby leaving higher quality fresh water in the Delta. (Ex. 1, p. 5.14-23.)

The CVRWQCB has indicated as desirable to preserve Delta water quality:

- the conservation of fresh water through EAEC's use of recycled water, because it would minimize or eliminate the discharge of wastewater originating from MHCSD to the Delta, and
- the EAEC's use of a zld system. (Ex. 1, p. 5.14-23; 5.14-39/40.)

Staff notes that the Applicant's commitment to use recycled water is only a conditional one. Based on the MOU between the Applicant and BBID, the Applicant has qualified its commitment to implement recycled water supply based on its sole discretion of whether terms and conditions are acceptable to EAEC Staff is concerned that no action by either BBID or Calpine has been taken to negotiate an agreement with MHCSD for this supply. (Ex. 1, p. 5.14-23.)

Furthermore, although Applicant included consideration of a proposed 4.6-mile pipeline in the AFC that would convey recycled water from MHCSD to the EAEC project, Applicant has failed to provide adequate evidence to Staff that would ensure such a facility is ever built. Staff also notes that the schedule included in the MOU between BBID and Calpine addresses the need to complete "water service" in accordance with the EAEC construction schedule, but does not address recycled water specifically. (10/16 RT 252:3-253-25; Ex. 1, p. 5.14-23/24.)

Because of Staff's determination of potential impacts and information regarding the availability of recycled water, Staff recommends more aggressive mitigation to avoid or lessen these impacts to other raw water users, finding that these additional mitigation measures are reasonably necessary, feasible and available. (10/16 RT 316:8-319-16; Ex. 1, p. 5.14-24.)

In order to mitigate the potentially significant adverse impact on BBID's fresh water supply, staff proposes full utilization by EAEC of recycled water produced by MHCSD as provided in **Conditions SOILS & WATER 5-9**. Staff premises its recommendation on the opinion that MHCSD provided recycled water is of

adequate quality for nonpotable uses of the EAEC. (10/16 RT 250:23-252-2; 262:1-20; Ex. 1, p. 5.14-24.)[129]

Any delay in the construction of the recycled water supply facilities or lack of full use of recycled water produced by MHCSD could result in an insufficient water supply to serve EAEC before 2010, or impact BBID's other water customers. Based on conservative estimates of recycled water production from MHCSD, Staff believes this significant adverse impact can be mitigated by EAEC using the maximum amount of recycled water produced by MHCSD for its nonpotable requirements. (Ex. 1, p. 5.14-24.)

Maximum utilization by EAEC of MHCSD's recycled water would reduce the potential duration of significant adverse impact to BBID's water supplies to a period between 2010–2020, considering both average and peak water demands by EAEC. Based on EAEC's average annual water demands, BBID might only experience demands in excess of raw water supplies on the order of about 800 afy or 1.5% in excess of its maximum annual supply of 50,000 afy. This incremental reduction in raw water use would result in impacts on raw water supplies and other users of those supplies, but Staff believes BBID can address these reduced impacts through conservation improvements and the development of other recycled water resources in the area. (Ex. 1, p. 5.14-24.)

Considering Applicant's lack of assurances to ultimately implement recycled water supply to EAEC, Staff recommends the adoption of **Conditions of Certification SOILS & WATER 5–9**, providing assurance that recycled water supply will indeed be implemented. The basis for including requirements for assuring implementation of maximum recycled water supply to EAEC is as follows:

---

[129] Staff asserts that this recommendation is consistent with Water Code Section 13550 et al.

1. Any delay in the construction of the recycled water supply facilities and or lack of full use of recycled water produced by MHCSD (to the extent of EAEC's water supply demands) could result in insufficient water supplies needed to serve EAEC before 2010, or otherwise impact BBID's other water customers.
2. MHCSD is a willing supplier of recycled water to BBID, the local water purveyor, and MHCSD has committed to provide all of the recycled water it produces for use by EAEC to the extent EAEC has demands for such use.
3. BBID, as the local water purveyor, is willing to supply EAEC with recycled water. In support of this endeavor, BBID has adopted a Recycled Water Policy, and executed an MOU with the Applicant. (Ex. 1, p. 5.14-25.)

Staff found that in addition to the opportunity for obtaining recycled water supply from MHCSD, there might also be the opportunity to obtain recycled water supply from the Discovery Bay Community Services District (DBCSD) and the City of Tracy, or to reduce significantly project water demands by changing to dry cooling. (Ex. 1, p. 5.14-26.)

The City of Tracy (Tracy) stated that they are currently conducting an environmental review of expanding their recycled water production (which is currently discharged to Old River) from 9 mgd to 16 mgd and improving their treatment level from secondary to tertiary. Tracy requested that Applicant and BBID consider augmenting the cooling water supply with Tracy's recycled water until Mountain House could meet the full demand.[130]

Finally, Staff stated that its preferred alternative absent 100 percent use of recycled water at the EAEC facility would be dry cooling. Staff acknowledged that application of dry cooling would increase Applicant's capital cost is excess of $8 million. (10/16 RT 300:16-22.)

---

[130] Staff also notes that City of Tracy's recycled water supply is being considered as an alternative to the fresh water supply proposed for the Tesla Power Plant under a separate Application for Certification proceeding. (Ex. 1, p. 5.14-26.)

d. Intervenor Sarvey

Intervenor Sarvey presented the testimony of Mr. Eric Parfrey, a resident of Stockton and a Senior Planner who formerly performed those duties for Contra Costa and San Joaquin Counties. Mr. Parfrey testified that there are approximately 100,000 housing units, which are being proposed in the short term (in the next 10 or 15 years) for construction around the south end of the Delta.[131] Most of these cities rely on Delta water for potable water supplies for all its new growth. (10/16 RT 205:1-17.)

Mr. Parfrey questioned, as a regional planner who has observed rapid urbanization in this area over the last 15 years, whether there will be enough water to serve this amount of suburban sprawl that's planned in all these cumulative general plans. Likewise, he questioned whether there was a wastewater treatment and disposal infrastructure in the south Delta region that could successfully support this type of growth. (10/16 RT 205:23-206:3.)

In addition, Mr. Parfrey testified that BBID's pumping of an additional 18,000 afy of water under its recently consummated DWR contract could have adverse impacts to other irrigation districts that rely on CVP supplies, as well as other urban areas that are served by Delta water. He testified that there is a finite amount of water in the Delta, especially during certain time of the year. If one district draws more than their historical usage, other districts will be adversely impacted. (10/16 RT 97:11-101:19; 206:8-207-3; Intervenor Sarvey Opening Brief on Phase 1 Topic Areas, pp. 13-15; 18-21; *cf.* **SOILS & WATER Tables 10 & 11**, *supra*.)[132].

---

[131]According to Mr. Parfrey, these developments are represented in the adopted general plans for the City of Tracy and San Joaquin County and include the community of Mountain House, the Cities of Manteca, Lathrop, Stockton, Discovery Bay, Brentwood, Oakley, and Antioch. (10/16 RT 205:1-9.)

[132] In our review of **Tables 10 and 11,** we noted that the DWR agreement would increase BBID's historical usage an average of 12,887 afy.

Intervenor Sarvey also takes issue with the water availability projections, arguing that Applicant and BBID have understated the amount of water that BBID will be tasked for in the future. (10/16 RT 294:23-297-14; 304:18-306:14.)

For example, Intervenor Sarvey argues that the EIR for the Tracy Hills Development projects clearly state that BBID will supply 6,000 afy of water as opposed to the 3,000 afy that BBID has represented. Our review indicates, however, that BBID has accurately projected that the Tracy Hills project will require 6,000 afy. Intervenor Sarvey also argues that BBID has failed to disclose that BBID and the City of Tracy are negotiating an MOU for the former to supply the latter with an additional 3,000 afy of fresh (raw) water. Our review of the record finds no support for this argument. (Intervenor Sarvey Opening Brief on Phase 1 Topic Areas, pp. 15-17; s*ee* **Soil & Water Table 14,** *supra; see also* Intervenor Sarvey Closing Brief, pp. 2-6*.)*

In addition, Intervenor Sarvey argues that BBID has understated the agricultural demand for fresh (raw) water by 9,000 afy and failed to account for a reduction of available recycled water under dry hydrological years. Mr. Sarvey argues therefore that BBID's water supply projections should be raised to a total demand of 64, 543 afy, which would result in a supply shortage of 8,613 afy. (10/16 RT 299:14-300-6; Intervenor Sarvey Opening Brief on Phase 1 Topic Areas, pp. 18-21*.)*

Finally, Intervenor Sarvey argues that rather than an equitable, efficient and environmentally sound allocation of water supplies among its customers:

> "The use of 7,000 afy of raw water to cool the EAEC represents 21% of BBID historical usage and 14 % of the 50, 000 afy that they expect to receive from the DWR. Assuming the BBID will retain the rights to 50,000 afy of water from the DWR BBID will allocate 14% of their available supplies to an area of 40 acres which represents 003 % of land in their district as the district encompasses 12,300 acres of irrigated lands. This violates BBID's statutory requirement to allocate water resources in an EQUITABLE, efficient and

environmentally sound manner." (Intervenor Sarvey Closing Brief, pp. 1-2, emp. in original.)[133]

e. Tri-Mark Communities

Tri-Mark Communities (Tri-Mark) is the developer of the new town community of Mountain House. Duane Grimsman is Tri-Mark's General Manager. Mr. Grimsman testified that Mountain House is completing its first phase of development, Wickland Village.[134] He testified that Mountain House completed construction of its sewer and water treatment facilities, which are now operational.[135] MHCSD has voted to accept both facilities and to exchange title. (10/16 RT 356:6-358-13.)

Mr. Grimsman testified that the FSA's projections for the availability of recycled water were reasonable given Mountain House's current rate of development. Unless arrangements can be made to convey the wastewater to EAEC, Mountain House will seek ultimately to discharge it to Old River under one of two permits it has with the CVRWQCB.[136] Mountain House has no current plans, nor does it anticipate any, to install infrastructure for reuse of its effluent within the development. Instead, its preference is to discharge the effluent to EAEC, as

---

[133] Intervenor Sarvey's argument here presumes that BBID will service the EAEC entirely with fresh (raw) water from the California Delta. Staff notes that 7,000 afy of fresh (raw) water would be equivalent to serve about 9,000-14,000 homes or 27,000-42,000 residents. (10/16 RT 231:7-232:7.)

[134] Wickland Village now is a neighborhood infrastructure of about 1,000 single-family lots, 480 apartment units, and approximately 98- acres of industrial/commercial property. Follow-up phases for the next two neighborhoods are expected to break ground on the backbone infrastructure in 2003. They will consist of approximately 2200 single-family lots, and about 40-acres of attached town homes and duplexes. .(10/16 RT 356:6-8-17; 358:16-25.)

[135] While raw water is being treated to meet Department of Health Services standards, wastewater is not because the first occupants are not expected to arrive within the community of Wickland Village until March 2003, when the community will initiate the generation of wastewater. (10/16 RT 356:24-358-13.)

[136] Before discharging to Old River, MHCSD must demonstrate to the CVRWCB that the effluent meets Title 22 standards. This requirement will be satisfied by the second permit, which will be used to test the discharge on Mountain House's own agricultural properties in a future phase of development. (10/16 RT 359:7-360-5.).

other alternatives risk degradation to groundwater. (10/16 RT 359:1-363-7; *see* **SOILS & WATER Table 15**, *supra*.)

Mr. Grimsman testified that he knows of no impediments to the MHCSD's provision of 100 percent of its recycled water to BBID and ultimately to the EAEC. Mr. Grimsman testified that Trimark Communities has ultimate control over recycled water produced by the MHCSD.

> **MS. DeCARLO**: Mr. Gilmore testified that the Mountain House Community Services District, quote, "is solely in control of and responsible for the discharge and recycling of water" unquote, and that the master development of Mountain House--developer of Mountain House has no role in the management of future recycled water supplies. Are these statements accurate?
>
> **MR. GRIMSMAN**: Not exactly. Trimark, it is true that the Mountain House CSD owns the water. The Trimark communities, when the Mountain House project was approved, entered into a development agreement with San Joaquin County. In that development agreement we obtained a vested right, meaning a right that San Joaquin County could not change without our approval. And that right allows us, at our election, to determine the use of reclaimed water, or treated waste water, generated by the Mountain House project. We also entered into an agreement with the Community Services District. And in that agreement, we and the CSD agreed that they would act, all of their actions would be in strict conformance with the community approvals. Now community approvals is defined as all of the approvals that we've received from San Joaquin County, including our development agreement. So the CSD must act consistent with the development agreement which allows Trimark to determine at its election the use of reclaimed water. So we have a contractual right to, or role, if you will, to participate in where this water is used. It is our position as a company, that we support the use of reclaimed water at the Calpine facility.
>
> **MS. DeCARLO**: Do you believe that sufficient infrastructure has been planned for within the Mountain House community to allow the positioning of a recycled water pipeline by the applicant?
>
> **MR. GRIMSMAN**: Yes, I heard the testimony earlier and I'm a little confused. Mountain House has approved and adopted master plans for storm water systems, sewer systems, water systems,

> roadways, road alignments. All of our master backbone infrastructure has been located. We know exactly where it is. I don't see any problem in Calpine or BBID, however it goes, receiving an alignment that is relatively straight, as the crow flies, through our project. I don't see any interference with proposed infrastructure. I think that those--the alignment of the pipeline could be done quite simply. It is the position of our company that we would cooperate in granting easements for the location of that pipeline within the Mountain House community where we control the land. (10/16 RT 365:5-367-15.)

f. Laws Ordinances Rules and Standards (LORS)

Under the Warren-Alquist Act, our decision must contain:

> Findings, regarding the conformity of the proposed site and related facilities with standards adopted by the commission pursuant to Section 25216.3 and subdivision (d) of Section 25402, with public safety standards and the **applicable air and water quality standards and with other relevant local, regional, state, and federal standards ordinances, or laws.** (Pub. Res. Code, § 25523; emphasis. applied.)

We have determined that the following LORS are applicable to these proceedings.

California Constitution, Article X, Section 2 states that:

> the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare. The right to water or to the use or flow of water in or from any natural stream or water course in this State is and shall be limited to such water as shall be reasonably required for the beneficial use to be served, and such right does not and shall not extend to the waste or unreasonable use or unreasonable method of use or unreasonable method of diversion.

Water Code section 13552.8 provides that:

- any public agency may require the use of reclaimed water[137] in cooling towers if reclaimed water is available,
- the reclaimed water meets the requirements set forth in Section 13550,
- there will be no adverse impacts to any existing water right; and
- public exposure to cooling tower mist is appropriately mitigated or control is provided.

Water Code section 13552.6 specifies that the use of potable domestic water for cooling towers is an unreasonable use of water if recycled water is available for this purpose. Water Code section 13550 provides that the use of potable domestic water for cooling towers is a waste or unreasonable use of water if suitable reclaimed water is available and the water meets all of the following conditions:

- The source of recycled water is of adequate quality for these uses and is available for these uses;
- The recycled water may be furnished for these uses at a reasonable cost to the user (In determining reasonable cost, the State Board shall consider all relevant factors, including, but not limited to, the present and projected costs of supplying, delivering and treating potable domestic water for these uses and the present and projected costs of supplying and delivering recycled water for these uses, and shall find that the cost of supplying the treated recycled water is comparable to, or less than, the cost of supplying potable domestic water.);
- After concurrence with the State Department of Health Services, the use of recycled water from the proposed source will not be detrimental to public health; and
- The use of recycled water for these uses will not adversely affect downstream water rights, will not degrade water quality, and is determined not to be injurious to plantlife, fish, and wildlife.

---

[137] Recycled or reclaimed water means water, which, because of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur, and is therefore considered a valuable resource. (Water Code, § 13050 (n).) Beneficial uses include power generation. (Water Code, § 13050 (f).) Water Code § 13555.3 provides for separate water-delivery systems on private property for potable and recycled, nonpotable uses.

Applicant

Staff implicitly concedes that the statutes and policies cited are not actually applicable to the EAEC. Staff appears to cite these policies for the limited purpose of arguing that the Staff's proposed conditions are "consistent" with these statutes and policies. However, none of the cited policies, either individually or collectively, requires the EAEC to receive any particular quantity of recycled water by a specific date or from a specific source. (10/16 RT 121:13-127-10; Ex. 4 D, p. 2.15-13.)

Moreover, none of these policies authorizes the Commission to override the authority of BBID to operate an irrigation district or to require BBID to give priority of use to a particular customer by a specific date. (10/16 RT 334:2-343-5.)

BBID contends that the Conditions of Certification proposed by the Staff are inconsistent with the State policies cited in the FSA. For example, **Condition SOIL & WATER-5 and 6** are inconsistent with SWRCBR 75-58 because they would override the authority of BBID to determine the priority of use for the EAEC based on the district's evaluation of environmental, technical and economic feasibility. The Staff's proposed conditions would instead mandate a specific priority of use based on a specific timetable and from a specific source regardless of BBID's evaluation of the factors identified in Resolution 75-58. (Ex. 4 D, p. 2.15-13.)

Another policy cited by the FSA is Water Code section 13550 *et seq,* which is *not* an applicable LORS. Staff asserts that this statute specifies the standard for comparison of fresh and recycled water supplies. However, as the passage of the statute quoted in the FSA clearly indicates, this statute is not at all relevant to the EAEC because it applies to the use of "potable domestic water" for certain non-potable uses. The EAEC proposes to use water provided by BBID from the Sacramento-San Joaquin Delta. Such water does not fall within the definition of

“potable domestic water” under California law. See Cal. Health & Safety Code Section 113843-113844. (Ex. 4 D, p. 2.15-13.)

Even assuming, *arguendo,* that section 13550 is applicable in this proceeding, there is no factual or legal basis for a finding that the use of fresh water by the EAEC constitutes a waste or unreasonable use of water under California law. It is well established that what is a reasonable use of water varies with the facts and circumstances of the particular case. (In re Waters of Long Valley Creek Stream System, 25 Cal.3d 339, 354 (1979).

Rather than making a full and fair evaluation of the facts and circumstances of this case in relation to the availability of alternative sources of water for the EAEC, the FSA misinterprets section 13550 as a blanket prohibition against the use of fresh water for power plant cooling purposes. In so doing, the FSA ignores the express language of the statute, which provides that the use of potable water for industrial purposes is unreasonable only when a source of recycled water is "available" at "reasonable cost." The record is clear that recycled water is not available to serve the EAEC. As the FSA itself concedes, Mountain House is only now initiating residential construction of the first of twelve phases. And while the General Manager of MHCSD has written a letter expressing an interest in selling water to BBID, the MHCSD is not prepared to enter into a contractually binding agreement with BBID at this time.

As the FSA admits the actual amount and cost of recycled water, which MHCSD may provide will be subject to the rate at which the community develops. The offer of MHCSD to provide its recycled water at unspecified cost and quantities in the indefinite future does not constitute an “available” supply under section 13550. Whatever the circumstances that leads BBID to construct facilities to make recycled water available to the EAEC, Applicant has committed in the MOU with BBID to use such supply of water as soon as it becomes available. (Ex. 4 D, p. 2.15-14.)

Staff

Applicant has the burden to discuss all other potential sources of water, if freshwater is proposed for cooling purposes, and to explain why these other sources are not feasible. (20, CCR, Chapter 5, Appendix B, subsection (g) (14) (C) (i).) Applicant has not carried this burden because the evidence demonstrates that recycled water will be available in sufficient quantities to offset much of the Applicant's proposed use of fresh (raw) water from the California Delta.

Staff, in making its recommendations, also relies on statutory findings and policies that show the State's position regarding the protection of water quality, conservation of fresh inland water for certain uses and the pursuit of alternative water resources for non-potable applications. Staff asserts the State's guiding policy codifies a fundamental determination by the State for reserving the highest quality water for the highest uses (domestic and irrigation), particularly in reserving water suitable for potable use for domestic purposes. (10/16 RT 221:18-225-10; Ex. 1, p. 5.14-31/32; Staff Opening Brief on Phase 1 Topics, pp. 4-7; 15-17.)

Accordingly, Staff asserts that its recommendation that EAEC be required to use 100 percent recycled water for its non-potable requirements at the earliest possible date, but no later than 2020, is consistent with the State's findings and policies for the protection of water quality, conservation of fresh inland water and the use of recycled water. These findings are set forth below. (Ex. 1, p. 5.14-31/32.)

(a) Water Code § 13575 et seq.[138]

The Recycling Act makes several findings and declarations, including:

> The environmental benefits of reclaimed water include a reduced demand for water in the Sacramento-San Joaquin Delta;

[138] The Water Recycling Act of 1991 (Recycling Act).

reduced discharge of waste into the ocean, and the enhancement of groundwater basins, recreation, fisheries, and wetlands;

use of reclaimed water has proven to be safe, and the State DHS is updating regulations for its use;

use of reclaimed water is a cost-effective, reliable method of helping to meet California's water supply needs; and

retail water suppliers and reclaimed water producers and wholesalers should promote the substitution of reclaimed water for potable and imported water in order to maximize the appropriate cost-effective use of reclaimed water in California.

(b) Water Code section 13146 specifies that:

State offices, departments and boards in carrying out activities, which affect water quality, shall comply with state policy for water quality control unless otherwise directed or authorized by statute, in which case they shall indicate to the state board in writing their authority for not complying with such policy. These policies include both State statutes and adopted policies.

(c) Water Code Section 1254 states:

(i)n acting upon applications to appropriate water the board (SWRCB) shall be guided by the policy that domestic use is the highest use and irrigation is the next highest use of water.

(d) California Water Code section 100 states:

It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such water be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare."

(e) SWRCBR 75-58[139]

SWRCBR 75-58 is the State's principle policy that specifically addresses the siting of energy facilities. SWRCBR 75-58 states that fresh inland waters should only be used for power plant cooling if other sources or other methods of cooling would be environmentally undesirable or economically unsound. SWRCBR 75-58 requires that power plant cooling water should come from, in order of priority, (1) wastewater being discharged to the ocean, (2) ocean water, (3) brackish water from natural sources or irrigation return flow, (4) inland wastewaters of low total dissolved solids, (5) and other inland waters.

(f) SWRCBR 68-16

In SWRCBR 68-16, the SWRCB has adopted a policy for maintaining existing high quality waters to the maximum extent possible. SWRCBR 68-16 states that the existing high water quality must be maintained until demonstrated to the State that any proposed change will be consistent with the maximum benefit to the people of the state and will not unreasonably affect present or future beneficial uses. Any activity which discharges a waste to existing high quality waters will be required to provide the best practicable treatment necessary to assure that pollution or nuisance will not occur and that the highest water quality, consistent with maximum benefit to the people of the State, will be maintained.

(g) SWRCBR 77-1

SWRCBR 77-1encourages and promotes reclaimed water use for nonpotable needs.

<u>BBID</u>

BBID's contentions are essentially four-fold:

- it has a sufficient supply of water to meet the EAEC's project's needs, as well as its existing and future customers without creating a potential significant environment effect on the environment;
- it will develop recycled water to add to its overall water supply;
- state law does not require it to supply the EAEC with 100% recycled water; and

[139] SWRCB's Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Powerplant Cooling (adopted by the Board on June 19, 1975 as Resolution 75-58). SWRCBR 75-58's waste discharge provisions are not at issue before us because the Applicant will employ a zero liquid discharge system at the EAEC.

- Staff's argument to the contrary is misguided, particularly in its reliance on related provisions and policies. (BBID Opening and Closing Briefs.)

For example, BBID argues that Staff's reliance on Water Code sections 13550, 13552.6 and 13552.8 ignores the threshold question of whether BBID would deliver to the EAEC within the definition of these provisions "potable domestic water." That term is not defined in the Water Code; however, the commonly held meaning is water that is "fit to drink". Since BBID proposes to deliver to the EAEC project only untreated, raw water that is diverted from the Sacramento-San Joaquin Bay-Delta–water that is neither fit to drink nor of quality satisfactory for purposes of the California Safe Drinking Water Act, the water to be delivered for cooling tower uses does not constitute "potable domestic water." (BBID Opening Brief, p. 11.)

On the facts of this case, we have grave reservations of BBID's interpretation of the relevant statutes. Whatever the technical definition of "potable domestic water," our record demonstrates that:

- the SWP delivers San Joaquin Bay-Delta originated and treated drinking water to two-thirds of California residents, or 20-million people, of which seventy percent are urban users, and
- the CVP transports approximately 20 percent of the state's San Joaquin Bay-Delta developed water to its agricultural, municipal, and wildlife refuge customers throughout the Central Valley;
- the CCWD does not distinguish between potable domestic water and "drawing drinking water from the Delta;" and
- Staff's witness testified that San Joaquin Bay-Delta water is of high quality that is within drinking water standards of 500 mg/L tds." (10/16 RT 28:13-24; 234:19-236:22; 247:12-24; Exs. 1, p. 8.14-2; 4 D 2, p. 2; 8, p. 8-14-2.)

Accordingly, on the facts presented here, we are inclined to give the term "potable domestic water" wide berth. To do otherwise would emasculate those statutory provisions requiring the use of recycled water when available and we are not convinced that was the intent of the Legislature in coining the phrase "potable domestic water.

g. Alternative Water Supply Sources and Cooling Technologies

Staff's analysis of potential impacts to water resources considered several alternative water supplies linked with wet cooling technology, along with consideration of dry cooling technology. (10/16 RT 236:23-242-10.) The choices considered were as follows:

Alternative 1A (Proposed Project–Fresh & Recycled Water)–Wet cooling using BBID's fresh water supply augmented by MHCSD's recycled water supply. BBID would initially supply (in 2005) 3,726 afy (81%) from fresh water, and MHCSD would supply 890 afy (19%) from recycled water. By 2020 or earlier, MHCSD's recycled water supply would provide 4,616 afy (100%), assuming full build-out of MHCSD. (Ex. 1, p. 5.14-27.)

Alternative 1B (Proposed Project–Fresh Water Only)–Wet cooling using BBID's fresh water supply. BBID would supply initially and in all years an average of 4,616 acre-feet/year. This alternative could apply if staff's proposed conditions of certification requiring implementation of recycled water are not adopted, and the Applicant and/or BBID discretionally chooses not to develop the recycled water pipeline from MHCSD for supply to EAEC. Calpine asked staff to evaluate this alternative. (Ex. 1, p. 5.14-27.)

Alternative 2–Wet cooling using Discovery Bay Community Service District's (DBCSD's) recycled water supply and BBID's fresh water supply. DBCSD would supply about 2,352 afy (51%) recycled water and BBID would supply about 2,248 afy (49%) fresh water for the life of the project. (Ex. 1, p. 5.14-27.)

Alternative 3–Wet cooling using MHCSD's and DBCSD's recycled water supplies. This alternative still requires some limited supply of fresh water from BBID (up to 1,710 acre-feet/year in 2005) during initial years of EAEC's operation, and diminishing to zero by about 2010. MHCSD and DBCSD would provide recycled water supply of 890 afy and 2,016 afy respectively during 2005, and all 4,600 afy (100%) of project non-potable water needs by about 2010. (Ex. 1, p. 5.14-27.)

Alternative 4–Wet cooling using Tracy's recycled water supply. Tracy would supply all 4,600 afy (100%) of project non-potable water needs beginning in 2005.[140] (Ex. 1, p. 5.14-27.)

---

[140] The City of Tracy stated that they are currently conducting an environmental review of expanding their recycled water production (which is currently discharged to Old River) from 9 mgd to 16 mgd and improving their treatment level from secondary to tertiary. Tracy requested that

Alternative 5–Dry cooling using BBID's fresh water supply, reducing non-potable water demands from 4,600 to 83 acre-feet/year;

Results of the analysis comparing capital and operating costs on a relative basis for Alternatives 1A, 1B and 2-5 are summarized below in **Soils and Water Table 17**.

(1) Wet Cooling

Staff found that of the alternatives considering wet cooling, Alternative 1A–Recycled Water from MHCSD augmented by Fresh Water from BBID is an acceptable alternative, subject to our adoption of Staff's recommended Conditions of Certification. To assure implementation of 100 percent recycled water use for nonpotable project demand under Alternative 1A, Staff would require that the EAEC use recycled water only for cooling and other nonpotable requirements no later than 2018. Thereafter, Applicant could no longer rely on fresh water for nonpotable requirements. (Ex. 1, p. 5.14-31.)

In addition, Staff found that:

- the quality of recycled water originating from MHCSD is adequate to meet EAEC's needs;
- the proposed facility will be designed and constructed to accommodate use of the recycled supply;
- recycled water will be treated to tertiary standards in accordance with Title 22;
- recycled water will have no effects on public health; and
- Alternative 1B (EAEC's use of fresh water use only), on the other hand , would be a waste or unreasonable use of high quality water under the California Constitution Article X, Section 2, and related statutes and policies. (Ex. 1, p. 5.14-31; see our LORS discussion above.)

We adopt these findings as our own.

Applicant and BBID consider augmenting the EAEC's cooling water supply with Tracy's recycled water until Mountain House could meet the full demand. (Ex. 1, p. 5.14-26.)

Soils & Water Table 17
Water Supply/Cooling Alternatives-Comparison of Capital & Operating Costs

Cost Component	Alt. 1A	Alt. 1B	Alt. 2	Alt. 3	Alt. 4	Alt. 5
	MHCSD & BBID Fresh & Recycled	BBID Fresh Only	DBCSD & BBID Fresh & Recycled	MHCSD & DBCSD Fresh & Recycled	City of Tracy Recycled	Dry Cooling, BBID Fresh Only
Tertiary Treatment of Source Water	$0	$0	$5,000,000	$5,000,000	$1,400,000	$0
	(24" Dia, 2.1 Miles)	(24" Dia, 2.1 Miles)	(24" Dia, 2.1 Miles)	(24" Dia, 2.1 Miles)		(12" Dia, 2.1 Miles)
Water Conveyance - Fresh Water	$6,000,000	$6,000,000	$6,000,000	$6,000,000		$2,000,000
	(24" Dia, 4.6 Miles)		(24" Dia, 7 Miles)	(24" Dia, 11.6 Miles)	(24" Dia, 10 Miles)	
Water Conveyance - Recycled Water	$8,000,000	$0	$12,000,000	$20,000,000	$17,200,000	$0
EAEC Water Treatment	$9,863,000	$9,863,000	$9,863,000	$9,863,000	$9,863,000	$1,500,000
EAEC Water Treatment Additions or Savings	$0	$0	$1,308,000	$1,308,000	$1,308,000	
Annual EAEC Water Treatment Operations	$1,109,000	$1,109,000	$1,580,000	$1,580,000	$1,580,000	
Pres. Value of Annual Water Treatment Op's	$14,724,941	$14,724,941	$20,978,725	$20,978,725	$20,978,725	$0
	(600 AF x $100/AF)	(4600 AF x $100/AF)	(2248 x $100/AF)	(100 x $100/AF)		(83 AF x $60/AF)
Annual Water Purchase Cost - Fresh	$60,000	$460,000	$224,800	$10,000	$0	$5,000
Pres. Value of Annual Water Purch's	$796,660	$6,107,730	$2,984,821	$132,777	$0	$66,388
	(4000 AF x $48/AF)		(2352 x $48/AF)	(4500 AF x $48/AF)	(4600 AF x $0/AF)	
Annual Water Purchase Cost - Recycled	$192,000		$113,000	$113,000		$0
Pres. Value of Annual Water Purch's	$2,549,313	$0	$1,500,377	$1,500,377	$0	$0
Wet Cooling Tower (excl Pipeline & Wtr Trtmt)	$32,337,000	$32,337,000	$32,337,000	$32,337,000	$32,337,000	$0
Annual Wet Cooling Operating Costs	$720,000	$720,000	$720,000	$720,000	$720,000	$0
Present Value of Wet Cooling Op's	$9,559,925	$9,559,925	$9,559,925	$9,559,925	$9,559,925	$0
Dry Cooling Tower (excl Pipeline & Wtr Trtmt)	$0	$0	$0	$0	$0	$79,700,000
Annual Dry Cooling Operating Costs	$0	$0	$0	$0	$0	$246,000
Present Value of Dry Cooling Op's	$0	$0	$0	$0	$0	$3,266,308
Subtotal - All Capital Costs	**$56,200,000**	**$48,200,000**	**$66,508,000**	**$74,508,000**	**$62,108,000**	**$83,200,000**
PV of All Costs (2001 $, 7%, 30 Years)	**$83,830,840**	**$78,592,596**	**$101,531,849**	**$106,679,804**	**$92,646,650**	**$86,532,696**
Avg. Annual Rate of Total Costs	**$6,313,669**	**$5,919,154**	**$7,646,810**	**$8,034,525**	**$6,977,626**	**$6,517,158**
Incremental Power Prod. Cost ($/KWH)	**$0.00097**	**$0.00091**	**$0.00117**	**$0.00123**	**$0.00107**	**$0.00100**

1) Avg. Annual Generation is estimated at 6,530,580 MWH/yr assuming a Capacity Factor of 70% x 1,065 MW x 8,760 Hours/yr;

2) Annual lost power generation associated with Alt. 5 - Dry Cooling is estimated to average 26 MW x 3,000 Hours/Year = 78,000 MWH/Year

3) Costs used in this analysis are primarily the cost data supplied by the Applicant and revised according to the Applicant's PSA Comments, Set 1.

4) For Alternative 1A, although fresh water would be phased out to the greatest extent by 2020, a weighted average use of 600 afy over 30 years was used for economic consideration.

5) A rate of $48/AF for recycled water was used assuming BBID's purchase from MHCSD based on the Applicant's estimate.

6) A rate of $100/AF for fresh water purchased from BBID was used based on BBID's indication to Staff.

Source: (Ex. 1, p. 5.14-29.)

Staff also found that at this time, no party has claimed potential injury to downstream water rights as a result of the EAEC project. Although DWR had previously indicated its concerns for potential injury to SWP contractors and/or

the Delta environment, it has since developed an agreement with BBID to resolve its concerns for potential injury. No significant change to Delta water quality should occur as a result of serving fresh water to EAEC in the interim until recycled supply is adequate, as the SWP will acknowledge BBID's senior water rights and maintain environmental quality controls as prescribed under CalFed. (Ex. 1, p. 5.14-31.)

And finally, Staff found that the cost of supplying recycled water to the EAEC is comparable to, and only slightly more than the cost of supplying solely fresh water (Alternative 1B) over the life of the project. The cost difference between Alternatives 1A and 1B amount to about $5 million as a present value over the life of the project (compared to an initial plant investment on the order of $500 million), or $400,000/year when put in terms of an annual average cost over the 30-year life of the project, or $0.00006/KWH as an incremental cost of power production. (Ex. 1, p. 5.14-31.)

(2) Dry Cooling

Dry cooling using BBID's fresh water supply, would reduce EAEC's nonpotable water demands from 4,600 to 83 afy. The application of a dry air-cooled condenser system is technically feasible and can significantly reduce (99% reduction) the use of water for the EAEC compared to the wet evaporative cooling system proposed. (Ex. 1, p. 5.14-28.)

A comparison of wet vs. dry cooling for the EAEC is summarized below in **Soils and Water Table 18**.

Soils & Water Table 18

Comparison of Cooling Tower Environmental & Performance Characteristics

Environmental Impact	Wet Cooling	Dry Cooling
Water Requirement	High fresh water supply and treatment requirements (4,600 afy)	None for Cooling (83 afy, primarily for steam production)
Water Discharge	High discharge and treatment requirements	None
Plant Efficiency/Fuel Supply	Baseline	Lower plant efficiency or higher fuel demand (Up to a 4% reduction in capacity, or 46 MW)
Plant Emissions	Baseline	Highest for same output
Auxiliary Power Requirements	Some from fans and pumping	Greatest compared to wet and wet/dry
Secondary Emissions – cooling tower drift	Some salt deposition from Cooling Tower drift	No salt deposition or secondary emissions
Land Requirements	Least of cooling tower alternatives (4 acres)	Moderately more than wet and wet/dry (5 acres)
Visual Impact - Structural	Least of cooling tower alternatives (1,027' long, 54' wide, 43' high)	Taller and larger structure compared to wet and wet/dry (661' long, 207' wide, 120' high)
Visual Impact -Plume	Visible plume, function of ambient temperatures	No plume
Noise	Least of cooling tower alternatives	Can be higher than wet and wet/dry (65 – 70 dBA @ 400')

Source: (Ex. 1, p. 5.14-28.)

(3) Conclusions

As a result of its alternatives analysis, Staff found that Alternative 5-Dry Cooling-would result in the most favorable conservation of water resources and is about equivalent to the next most favorable alternative in terms of other environmental impacts when compared to the Applicant's current proposal.[141] (Ex. 1, p. 5.14-30.)

[141] Dry cooling, however, would limit Applicant's peaking capacity by an estimated reduction of 7.5 MW (0.7%) on an average temperature day, to 46.4 MW (4.2%) on a hot day. (Ex. 1, p. 5.14-30.)

Results of the overall analysis comparing various water supplies and cooling alternatives in terms of environmental and cost considerations are summarized below in **Soils & Water Table 19**, as follows:

Soils & Water Table 19
Summary of the Water Supply and Cooling Alternatives

Issue or Measure	Alt. 1A	Alt. 1B	Alt. 2	Alt. 3	Alt. 4	Alt. 5
	Wet Cooling MHCSD Recycled & BBID Fresh Water Supplies	**Wet Cooling BBID Fresh Water Supplies**	**Wet Cooling DBCSD Recycled & BBID Fresh Water Supplies**	**Wet Cooling MHCSD, DBCSD Recycled & BBID Fresh Water Supplies**	**Wet Cooling City of Tracy Recycled Water Supply**	**Dry Cooling BBID Fresh Water Supply**
Ultimate Dependency On Fresh Water (afy)	3,726 – 0 by 2020	4,616	2,248	1,710 – 0 by 2010	0	83
Water Quality before Treatment (TDS in mg/l)	174 - 573	174	748	1,000	1,020	174
Effect of Recycled Water Use to Public Health	None (Will be Tertiary Treated per Title 22)	Not Applicable	Need Tertiary Treatment of DBSCD's Wastewater	Need Tertiary Treatment of DBSCD's Wastewater	Planning Tertiary Treatment	Not Applicable
Adverse Effects to Downstream Water Rights	None	None	None	None	None	None
Degradation to Water Quality	No Significant Impact; No change compared to existing conditions	Slight Degradation No Significant Impact	Improved by avoiding DBCSD existing discharge	Improved by avoiding DBCSD existing discharge	Improved by avoiding existing Tracy discharge	No Significant Impact
Injury to Plantlife, Fish & Wildlife	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact
Present Value of Capital and Operating Costs	$84 MM	$79 MM	$102 MM	$107 MM	$93 MM	$87 MM
Incremental Power Prod. Cost ($/KWH)	**$0.00097**	**$0.00091**	**$0.00117**	**$0.00123**	**$0.00107**	**$0.00100**

Source: (Ex. 1, p. 5.14-30.)

Nevertheless, Staff concluded that considering the loss of generation capacity/energy and the availability of recycled water, dry cooling does not appear to be a necessary alternative if the EAEC where to implement Alternative

1A which would result in only temporary impacts to raw water supplies.[142] Therefore, Staff recommended Alternative 1A-Recycled Water from MHCSD for all nonpotable requirements augmented by fresh (raw) water from BBID as the most favorable alternative. (Ex. 1, p. 5.14-31.)

4. Wastewater Disposal

In combination with the use of recycled water, Applicant will employ an on-site zld treatment system that will treat and reclaim internal wastewater streams and eliminate the discharge of wastewater from the facility. (10/16 RT 132:2-8.)

The onsite treatment system will treat cooling tower blowdown with a combination of softening and high total dissolved solids (tds) reverse osmosis followed by brine concentration and crystallization or drying. Permeate from the high tds reverse osmosis process will be returned to the cooling towers for makeup and waste brine from the softeners and reject from the high TDS reverse osmosis system will be treated in a brine concentrator. Distillate from the brine concentrator will be used for hrsg makeup, inlet air fogging and power augmentation. Concentrated brine will be dried in a crystallizer and dried salt cake will be hauled for landfill disposal. When distillate production from the brine concentrator is greater than steam demands for boiler makeup, inlet air fogging and power augmentation, excess distillate is returned to the cooling towers. When steam demands exceed production of distillate from the brine concentrator, incoming raw fresh water is treated with reverse osmosis and mixed bed demineralization to augment distillate production. (Ex. 4D, p. 2.15-7/8.)

Sanitary wastewater will be discharged into a septic tank and leach field system, which will be established in a raised bed in order to maintain percolation above

---

[142] This alternative differs from the Applicant's current proposal that is a qualified commitment to use at most 60 percent recycled water from MHCSD under terms acceptable to EAEC. (Ex. 1, p. 5.14-31.)

the shallow groundwater. (Ex. 1, p. 5.14-5.) Because of the potential for groundwater to be near the ground surface near the EAEC, the leach field will be constructed according to an above ground mound-type design. The mound system will be designed to the requirement of EPA's Design Manual for Onsite Wastewater Treatment and Disposal Systems (EPA No. 625/1-80-012), where it is referred to as the "NoDak" disposal system. (Ex. 1, p. 5.14-33.)

In order to develop the NoDak disposal system, Applicant will need to obtain a disposal permit from Alameda County Environmental Health Department. If the existing ordinances are not changed to accommodate the NoDak disposal system, Applicant will need to obtain a variance to construct and operate the system. We adopt Staff's recommendation that addresses this uncertainty and ensures no adverse impacts occur to soil and water resources during EAEC's construction or operation. (Ex. 1, p. 5.14-33; **Condition SOILS & WATER 13**.)

5. Cumulative Impacts

In addition to EAEC's proposed use of fresh water originating from the Delta, two other Energy Commission AFC proceedings are in progress that are proposing to use fresh water supply from the Delta. Several residential developments are also proposed or under construction in the area. These are summarized below in **Soils & Water Table 20**. (Ex. 1, p. 5.14-33.)

Power plants are not the only development expected in the area that has the potential to affect water resources. Over the next several years, projected water demand in BBID's service area and areas nearby is expected to increase, primarily to serve the needs of new residential and commercial customers. We have seen BBID's projections that this demand will reach 50,615 afy by 2020, without consideration of EAEC's requirements. (*Cf.* BBID Revised Table 5 & Staff Table 14, *supra.*)

BBID and DWR have agreed that the former may only divert 50,000 afy from the Clifton Court Forebay. Calpine proposes primarily to use fresh inland (raw) water that ultimately comes from the Delta until such time as recycled water is available from BBID at which time they anticipate it will meet 50 percent of their demands (assuming recycled water is offered under terms and conditions acceptable to EAEC). Otherwise, Calpine proposes to use 100% fresh water. This proposed use could affect BBID's current customers and any potential future customers of local fresh water in the area served by BBID, such as farmers and or residential customers who must compete for limited high quality supplies and have few if any alternatives to meet their needs. (10/16 RT 249:12-250-6; Ex. 1, p. 5.14-34.)

The EAEC project will operate for 30-50 years, and this use by EAEC of fresh inland (raw) water could potentially have increasing adverse local and regional effects over time. (Ex. 1, p. 5.14-34.)

Soils & Water Table 20
Cumulative Diversions of Delta Water Resources

Project Name	AFC Proceeding #	Annual Average Quantity of Water (Acre-Feet/Year)
Mountain House Dev't	N/A	9,415
East Altamont Energy Center	01-AFC-04	4,616
Tesla Power Plant (Tesla)	01-AFC-20	5,100
Tracy Hills	N/A	6,000
Tracy Peaker Project	01-AFC-16	30
Total		**25,161**

Source: (Ex. 1, p. 5.14-33.)

Tesla power plant is proposing a water exchange. Water diverted from the California Aqueduct will be in exchange for groundwater that has been banked by a local water supplier in Kern County according to information currently available. In this scenario, there would be no additional diversions of Delta water resources for supply to Tesla, but instead there would be increases in banked groundwater withdrawal in Kern County. Another possible supply under consideration for the Tesla project is recycled water from the Tracy wastewater treatment facility. The impacts of additional groundwater withdrawal or other potential impacts to water

resources are subject to an assessment in the Tesla AFC proceeding. (Ex. 1, p. 5.14-33.)

We have considered the increasing pressures and diminishing supplies of fresh inland water resources in BBID's service area and the local region. We concur with Staff's finding that the use of fresh inland water, when recycled or degraded water resources are available, for nonpotable needs, represents a potential significant adverse cumulative impact. This impact results in the reduction of fresh water supply available for other uses in the area that lack alternatives to meet their needs. (Ex. 1, p. 5.14-34.)

Our finding is based on the conclusion that:

- recycled water is clearly available for supply to EAEC at a competitive cost, and
- EAEC's use of raw fresh water is shown to exceed local supplies over time and therefore would result in a significant adverse cumulative impact.[143] (Ex. 1, p. 5.14-34.)

As a perspective of existing and projected statewide shortages of fresh water supplies, a number of reports and publications help illustrate the challenges facing California now and in the future to maintain adequate water supplies:

1. DWR's California Water Plan Update 1998 – Every five years, DWR is required to prepare a statewide Water Plan addressing projected demands and supplies, and strategies to meet the state's future water needs. In the last completed Water Plan Update -1998, DWR determined that as of 1995, a 1.6 million-afy shortage of water supply existed in California. In 2020, the shortage is projected to be 2.4 million afy (DWR, Bulletin 160-98) (DWR, 2002c).
2. DWR's California Water Plan Update 2003 – DWR has begun to update its assessment of the state's water supplies and demands with its California Water Plan Update 2003.

[143] We note too that the SWRCB has also determined that local surface water supplies in the Sacramento-San Joaquin Delta are already fully appropriated from June 15–August 31 each year, and not available for new appropriations considered junior in right to those already established. (Ex. 1, p. 5.14-34.)

This new plan will look more broadly than before at programs and conditions affecting the state's water resources. These programs will include evaluating the status and interaction of CALFED, the Colorado River Water Use Plan, the Central Valley Project Improvement Act (CVPIA), the State Water Resources Control Board Bay-Delta water rights hearings, hydroelectric project relicensings and global warming, among other programs and conditions (DWR, 2002d).

3. DWR's SWP Delivery Reliability Report – On August 20, 2002, DWR released its Draft SWP Delivery Reliability Report. The analyses contained in the report conclude that the SWP, using existing facilities and operated under current regulations, can deliver an average of between 70 and 75 % of the primary contractual supply (defined as the Table A amount) now and in the future. During dry periods, deliveries are projected to be significantly lower. For example, if conditions similar to 1977 were to repeat, SWP deliveries are projected to be about 20% of the primary contractual supply (DWR, 2002e).

4. California Colorado River Water Use Plan – California is charged with bringing its use of Colorado River Water in line with its allocation. California's normal apportionment is 4.4 million afy, and at times the state has used up to 5.4 million afy. A plan for implementing water conservation measures and groundwater storage is being implemented over a 15-year period from 2001 – 2016, in order to accomplish a progressive reduction in California's reliance on Colorado River water to within its normal apportionment (Colorado River Board, 2002a).

5. Global Warming – Scientists are recognizing changing trends in our atmospheric conditions that are already showing effects on our water supplies in California. Over the past century, land and sea temperatures have risen by about 1°F. Since 1958, carbon dioxide levels have increased from about 315 parts per million (ppm) to about 370 ppm, from which there appears a correlation that as carbon dioxide increases, land and sea temperatures increases. The effects are already being realized in our state's water supplies as measurements in the Sacramento River system show that water originating from mountain snowmelt has diminished by about 12% over the last century. A compounding effect is that more intense and earlier snowmelt is being realized, making natural flows in river systems less sustainable over the normal April – July period,

> and less available to divert to beneficial use and storage for later use in the year (Sacramento Bee, 2002a). (Ex. 1, pp. 5.14-34/35.)

Cumulatively, in California, fresh water supplies for consumptive uses are diminishing while the demand for high quality fresh water is increasing. CALFED and the CVPIA Programs have provided significant improvements in environmental protection of sensitive or endangered species and improvements in restoring aquatic habitat conditions in some reaches of streams and the Delta. However, a result of this accomplishment is more water appropriated for environmental needs and less water available for consumptive needs. (Ex. 1, p. 5.14-35.)

Between 2001–2016, water received by California from the Colorado River will be reduced by 1 million afy. The outlook for the SWP is also limited. Assuming no changes in the rules by which the SWP's operations are governed, DWR estimates that during normal hydrologic conditions, its supply to contractors will average 70–75% of primary contractual allocations that cumulatively total about 4.3 million afy at 100%, and during a critically dry year like 1977, that supply will be severely limited to a mere 20%. (Ex. 1, p. 5.14-34.)

Combined hydropower and water supply projects are realizing similar reallocations of resources during license renewals under FERC's authority:

- accomplishing significant improvements for restoration of aquatic habitat, and
- modifying project operations to better mimic natural stream flows for habitat restoration and recreation purposes,
- while resulting in less water in storage reserves for meeting future consumptive needs. (Ex. 1, p. 5.14-34.)

Accordingly, we accept Staff's recommendation that the EAEC project be required to use all recycled water produced by MHCSD. We believe that only in this way will we make available as much fresh surface water for higher priority

uses such as agriculture and residential uses and avoid or minimize the potential for significant cumulative impacts.[144] (Ex. 1, p. 5.14-36.)

COMMISSION DISCUSSION

Fundamentally, the dispute here involves BBID's capacity to provide a reliable source of cooling water to the proposed EAEC. Applicant and BBID contend that it has demonstrated that capacity. On the other hand, Staff disputes this contention asserting that BBID does not have the capacity over the life expectancy of the EAEC relying exclusively on fresh (raw) water from the Delta. Staff asserts that neither Applicant nor BBID have any quantified data of BBID's historic water savings accomplished through conservation and or agricultural customer reduction measures. Testimony at our evidentiary hearings established that BBID has no mandatory water conservation requirements of its customers. (10/16 RT 84:25-85:7; Ex. 1, p. 5.14-10.)

To mitigate the significant impacts on the environment from the EAEC's use of fresh water from the Delta, Staff proposes in its Conditions that Applicant must use recycled water from the MHCSD provided by BBID. Under Staff's proposed **Condition SOILS & WATER-5, 6 & 7**, Applicant would be required to displace fresh water entirely with recycled water for average use by the year 2020.

Under Staff's construct of the Conditions, Applicant would be required to:

- use tertiary treated recycled water for all non-potable operations (including landscaping) as soon as possible but no later than year 2020 supplemented by necessity with fresh (raw) water (up to 38 %);
- contract with BBID under the Water Code to secure EAEC's first priority to recycled water, and setting forth the parties rights and responsibilities with respect to construction of the facilities to secure

[144] In addition, we strongly encourage Calpine to assist in developing other sources of recycled water to avoid a potential shortfall in supplies that would necessitate increases in fresh water diversion or depriving residential and agricultural users of fresh water supplies.

an entire allocation of MHCSD recycled water via a recycled water pipeline to be sized and constructed prior to operation of the EAEC;

- recycle storm water in the cooling tower basin and store on-site 10 million gallons of raw water.

We believe these requirements to be reasonable and narrowly tailored to accomplish the goal of ensuring adequate supplies of fresh water are available to meet the demand. The parties do agree that the new town of Mountain House will be fully built out by the year 2020, and at that time **5,930** afy of recycled water will be available from the MHCSD. This amount of recycled water would fully supply EAEC's average yearly requirement of **4,616** afy, and come within **2,384** afy of satisfying EAEC's total peak year (**7,000-afy**) requirement. (10/16 RT 67:8-17; **SOILS & WATER Tables 13 14 & 16**.)

According to Staff, even with the assumption that the Mountain House community will use a portion of the recycled water, Applicant has stated that the worst-case minimum recycled water projected to be utilized by EAEC by 2020 would be 2,861 acre-feet per year, or 62 percent of the project's anticipated annual water use. (Ex. 2D8, p. 50.) Such "minimum-level" use of recycled water would still meet Staff's proposed **condition Soil and Water 5**, which would require the project to use recycled water for no less than 62 percent of its annual recycled water supply beginning in the year 2020. (Ex. 1M.) Using the EAEC project's peak water use of 7,000 acre-feet, 62 percent equals 4,340 acre-feet of recycled water, which is well within the projected recycled water availability of 5,930 acre-feet per year. (Ex. 1, p. 5.14-21.)

Applicant's assertion that it is technically infeasible to construct the pipeline prior to EAEC's operational startup is bewildering in light of the fact that:

- the pipeline and routes were evaluated in the AFC;
- recycled water will be available in projected amounts for which an infrastructure has to be in place to support the largest flow; and,
- the cost of recycled water is projected to be competitive with the cost of fresh (raw) water from the Delta. (10/16 RT 115:14-116:18; 184:18-185-6; 290:1-292:18.)

Likewise, we do not view Staff's conditions of certification to circumvent the authority of BBID to manage its water resources and BBID's contentions to the contrary are disingenuous. In designing the conditions of certification, Staff appropriately looked at environmental impacts that could be mitigated to the extent feasible. Thus, it was BBID's own feasibility study, which provided a basis for Staff to recommend that BBID supply 100 percent of the MHCSD effluent to EAEC. BBID's feasibility study states:

> **Recommended Alternative**
>
> It is recommended that the district continue to develop the direct industrial use alternative (Alternative 3) as the initial alternative for consideration of using recycled water. By focusing the initial development on the EAEC opportunity, the district will be able to start with a single, major customer and potentially build the program in the future. (10/16 RT 334:2-343-7; Ex. 8, p. 20.)

Accordingly, we do not accept BBID's contention that Staff's conditions of certification will usurp its authority. In our estimation, Staff's conditions will do no more than hasten and assure that BBID acts consistently with its intended course. (BBID's Closing Brief, p. 12.)

Although, current law gives BBID exclusive jurisdiction for the provision of recycled water within its service area, which includes the EAEC, BBID has yet to negotiate an agreement with MHCSD to purchase any available supplies. To complicate matters, the San Joaquin County Board of Supervisors (Board), which is on record as opposing the EAEC, also serve as MHCSD's Board of Directors. In such a position, the Board may frustrate any plans for the provision of MHCSD recycled water to the EAEC.

We do not believe that the Board Board will stand as an impediment to a contractual agreement between the MHCSD and BBID over the provision of recycled water to the EAEC. BBID's General Manager Rick Gilmore assumed that the Board would potentially change its position if the Energy Commission

approved the project. We adopt that position as reasonable and we note that Applicant holds a like view. (10/16 RT 93:12-18; Ex. 4 D. p.2.15-10.)

The testimony of record provides even more certainty that the Board may not frustrate any agreement between the two districts because there is a likelihood that the voters of Mountain House will be in a position to elect an independent board as early as 2003. Further, our record contains testimony that the Board's makeup is subject to change after this November's mid-term election in San Joaquin County. (10/16 RT 77:23-78:1; 92:4-12; 276:7-14; Ex. 4 D, pp. 9-10.)

Even assuming, arguendo, that the Board would stand as an impediment, our record is clear that it does not have the final word. Trimark Communities, the master developer, does and it is firmly on record in support of supplying the recycled water to BBID and the EAEC.

For example, Trimark's General Manager testified that:

> [i]t is the position of our company that we would cooperate in granting easements for the location of that pipeline within the Mountain House community where we control the land.
>
> Mountain House has approved and adopted master plans for storm water systems, sewer systems, water systems, roadways, road alignments. All of our master backbone infrastructure has been located. We know exactly where it is. I don't see any problem in Calpine or BBID, however it goes, receiving an alignment that is relatively straight, as the crow flies, through our project. I don't see any interference with proposed infrastructure. I think that those--the alignment of the pipeline could be done quite simply. It is the position of our company that we would cooperate in granting easements for the location of that pipeline within the Mountain House community where we control the land. (10/16 RT 367:12-367-15.)

In the face of this record, we are indeed bewildered and mystified that the EAEC would be reluctant to act to initiate an agreement for the wastewater pipeline. Therefore, we must agree with Staff that our conditions of certification are indeed required to ensure construction of the wastewater pipeline. Applicant must commit in this way to the project that it alone proposed.

Moreover, the Committee is unwilling to second-guess Staff's findings with respect to a significant impact on the environment were we not to mitigate EAEC's proposed use of fresh (raw) water from the Delta. Even in view of BBID's priority entitlement of this resource, we believe that any error should be on the side of cautiousness when dealing with the projections that have been presented to us by the parties and a resource so relied on by millions of California residents. To do otherwise would conflict with our own sense of propriety and good judgment.

We believe that the applicable LORS dictate the result to which we come today. Preliminarily, we give State statutory and policy pronouncements on water quality great weight and broad construction to give them the maximum opportunity to accomplish their intended purpose. [*See Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.,* 47 Cal.3d 376, 390 (1988) (CEQA to be given broad interpretation within its reasonable scope); *see also* Staff Opening Brief on Phase 1 Topics, p. 2, citing *Associated Home Builders of the Greater East Bay, Inc. v. City of Walnut Creek* (1971) 4 Cal.3d 633.)]

Applicant has not persuaded us that California's stated policies for the use of recycled water may be trumped by BBID's independent determinations regarding water use in its service area. If such were the case, State policies would be subject to the whims of any local agency who believed it was acting for the public good despite an abundance of state promulgated LORS to the contrary. We are simply not prepared to accept that result.

Under Energy Commission Regulations, an applicant must describe the effects of the project demand on the water supply and other users of this source. [20 Cal Code of Regs., App. B (14) (e) (i).] Commission staff and all concerned environmental agencies must review and assess whether:

- the application's list of environmental impacts is complete and accurate;
- the mitigation plan is complete and effective, and

- additional or more effective mitigation measures are reasonably necessary, feasible and available. [20 CFR, § 1742 (b).]

Accordingly, we accept Staff's proposed conditions as necessary to mitigate Applicant's proposal to cool the EAEC project with fresh water from the California Delta.

FINDINGS AND CONCLUSIONS

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

1. Soils in the project area are susceptible to wind and water erosion.

2. Storm water will be managed in accordance with the Storm Water Pollution Prevention Plans (SWPPP's) prepared for construction and industrial activities, under the General NPDES Permit for Discharges of Storm Water Associated with Construction and Industrial Activity respectively. These NPDES Permits are administered by the Central Valley–Sacramento Office of the Regional Water Quality Control Board.

3. EAEC will be required to comply with the NPDES requirements that regulate storm water by establishing effluent limitations and monitoring and reporting requirements for construction activities storm water, low-threat or short duration discharge, and the industrial activities (operational) dictated by the storm water general permit. The draft SWPPP will need to be revised to be site specific and comply with the guidelines provided in Water Quality Order 99-08-DWQ and 97-03-DWQ.

4. Stormwater flows will be directed to the cooling process to conserve fresh water resources.

5. No ground water is to be used by the EAEC.

6. Applicant will employ a zero liquid discharge system to control wastewater so that there are no discharges of liquid waste from the EAEC.

7. The project's compliance with existing and new permits will result in no significant water quality degradation.

8. Implementation of the Conditions of Certification will ensure that the project will conform with all applicable laws, ordinances, regulations, and standards related to soil resources.

9. Applicant will employ wet cooling technology with a combination of fresh (raw) water from the Delta, and recycled water as it becomes available from the MHCSD in the operation of the proposed EAEC.

10. The quality of recycled water originating from MHCSD will be adequate to meet EAEC's needs.

11. Recycled water to be used by the EAEC will be treated to tertiary standards in accordance with Title 22 and will have no effects on public health.

12. Recycled water to be used by the EAEC will have costs of supply and treatment comparable to or less than the cost of supplying raw water.

13. Recycled water to be used by the EAEC will not adversely affect downstream water rights; and will not be injurious to plant life, fish and wildlife.

14. Recycled water to be used by the EAEC has the support of the CVRWQCB and the CCWD.

15. Applicant will design and construct the EAEC to utilize recycled water when it becomes available from BBID.

16. Applicant has identified specific routes for a recycled water pipeline extending from the MHCSD's treatment facility to the EAEC and acknowledged that BBID could make recycled water available to EAEC by the year 2005.

17. Recycled water will be available to the EAEC from the MHCSD and BBID before the proposed facility is operational.

18. Applicant's use of recycled water at the EAEC will be combined with an onsite zero liquid discharge system that will treat and reclaim internal wastewater streams and eliminate the discharge of wastewater.

19. EAEC's use of recycled water for cooling is feasible and with some additional treatment, could be used for process water.

20. The MHCSD's water treatment and wastewater treatment facilities are presently constructed and capable of operating.

21. Trimark Communities, Mountain House's master developer, rather than MHCSD, has the contractual right to determine where MHCSD's recycled water is used.

22. Trimark Communities support the use of reclaimed water at the EAEC facility.

23. Trimark Communities would cooperate in granting easements for the location of a pipeline within the Mountain House community where it controls the land.

24. Mountain House has approved and adopted master plans for storm water systems, sewer systems, water systems, roadways, and road alignments.

25. Mountain House's entire master backbone infrastructure has been located. BBID and or EAEC could receive a direct alignment easement through the Mountain House project.

26. The quantity of recycled water to be used by EAEC would be relatively consistent on a month-to-month basis, whereas alternative uses of MHCSD's recycled water by either agriculture or landscape/golf course irrigation are typically seasonal.

27. Maximal use of recycled water by EAEC would result in nearly twice the amount of recycled water consumed than compared to agricultural and landscape/golf course irrigation.

28. MHCSD is currently permitted and intends to return excess tertiary treated wastewater to Old River, which flows into the Delta, under one of two permits it has with the CVRWQCB unless arrangements can be made to convey the wastewater to EAEC.

29. Mountain House has no current plans to install infrastructure for reuse of its effluent within the development. Instead, its preference is to discharge the effluent to EAEC, as other alternatives risk degradation to groundwater.

30. Use of MHCSD tertiary treated water, in lieu of raw water from the Delta, is beneficial by reducing the amount of lower quality tertiary treated wastewater return flows to Old River and the Delta and avoiding increased fresh water diversions from the Delta.

31. Fresh (raw) water from the California Delta is of a high quality that is within tds standards for drinking water.

32. Under historical dry hydrological conditions, BBID has experienced an over 30 percent higher differential in water use, primarily to serve its agricultural users.

33. BBID's use of fresh (raw) water alone to supply EEAC's nonpotable needs would diminish local fresh water supplies; deprive BBID's other customers of fresh water supplies; or result in inadequate supply to the EAEC project itself, creating significant environmental adverse impacts to water supplies and to other users of this supply.

34. BBID's use of fresh (raw) water alone to supply EEAC's nonpotable needs would be a wasteful and unreasonable use of fresh inland water when recycled water is available.

35. The use of fresh inland water, when recycled or degraded water resources are available, for nonpotable needs, represents a potential significant adverse cumulative impact.

36. The application of a dry air-cooled condenser system (dry cooling) is technically feasible for the EAEC.

37. Dry cooling would significantly reduce (99% reduction) the use of water for the EAEC compared to the wet evaporative cooling system proposed

38. Dry cooling-would result in the most favorable conservation of water resources of all the cooling alternatives analyzed.

39. Dry cooling would limit Applicant's designed peaking capacity for the EAEC.

40. Dry cooling is not necessary as Applicant may achieve its design capabilities for the EAEC by implementing the fresh water savings imposed by our Conditions, which result in only a temporary impact to raw water supplies.

41. No significant change to Delta water quality should occur because of serving fresh water to EAEC in the interim until recycled supply is adequate, as the SWP will acknowledge BBID's senior water rights and maintain environmental quality controls as prescribed under CalFed.

42. The proposed EAEC facility will likely become operational during the year 2005 or 2006; thereafter it will have an operational life of between 30 and 50 years.

CONDITIONS OF CERTIFICATION

SOILS&WATER 1: The project owner shall comply with all of the requirements of the General NPDES Permit for Discharges of Storm Water Associated with Construction Activity. The project owner, as required, shall develop and implement a Storm Water Pollution Prevention Plan (SWPPP) for the construction of the entire project. Prior to beginning any site mobilization associated with any project element, the project owner shall submit to the CPM a copy of the Notice of Intent for Construction accepted by the RWQCB and obtain Energy Commission CPM approval of the construction activity SWPPP for EAEC.

Verification: No later than sixty (60) days prior to the start of site mobilization for any project element, the project owner shall submit a copy of the SWPPP required under the General NPDES Permit for Discharges of Storm Water Associated with Construction Activity to Alameda County for review and comment, and to the CPM for review and approval. The SWPPP will include copies of the Notice of Intent for Construction accepted by the RWQCB and any permits for EAEC that specify requirements for the protection of stormwater or water quality. Approval of the SWPPP by the CPM must be received prior to site mobilization for any project element.

SOILS&WATER 2: Prior to beginning any site mobilization activities for any project element, the project owner shall obtain CPM approval for a site-specific Drainage, Erosion and Sedimentation Control Plan that addresses all project elements. The plan shall address revegetation and be consistent with the grading and drainage plan as required by Condition of Certification CIVIL-1.

Verification: No later than sixty (60) days prior to the start of any site mobilization for any project element, the project owner shall submit the Drainage, Erosion and Sedimentation Control Plan to the CPM for review and approval. No later than sixty (60) days prior to start of any site mobilization, the project owner shall submit a copy of the plan to Alameda, Contra Costa and San Joaquin Counties for review and requesting any comments be provided to the CPM within thirty (30) days. The plan must be approved by the CPM prior to start of any site mobilization activities.

SOILS&WATER 3: The project owner shall comply with all of the requirements of the General NPDES Permit for Discharges of Storm Water Associated with Industrial Activity. The project owner, as required, shall develop and implement a Storm Water Pollution Prevention Plan (SWPPP) for the operation of EAEC. The project owner shall submit to the CPM a copy of the Notice of Intent for Operation accepted by the RWQCB and obtain approval of the General Industrial Activities SWPPP from the Energy Commission CPM prior to commercial operation of the EAEC.

Verification: No later than sixty (60) days prior to the start of commercial operation, the project owner shall submit to the CPM a copy of the SWPPP required under the General NPDES Permit for Discharges of Storm Water Associated with Industrial Activity to Alameda County for review and comment, and to the CPM for review and approval. The operational SWPPP shall include copies of the Notice of Intent for Operation accepted by the RWQCB and any permits for EAEC that specify requirements for the protection of stormwater or water quality. Approval of the operational SWPPP by the CPM must be received prior to start of commercial operation.

SOILS&WATER 4: The on-site septic system shall be designed and operated to prevent any adverse impacts to water quality. Prior to construction of the on-site sanitary wastewater treatment facility (septic system), the project owner shall obtain CPM approval for this system. Prior to CPM approval, written confirmation shall be submitted by the project owner from the Alameda County that the proposed facility design meets all applicable County requirements.

Verification: No later than sixty (60) days prior to construction of the on-site domestic wastewater treatment facility for EAEC, the project owner shall prepare detailed engineering drawings for this facility and submit these drawings with a detailed description to the CPM and Alameda County for review. The detailed description shall include information on infiltration rates, existing groundwater quality and depth to groundwater. Within sixty (60) days of submitting the detailed engineering drawings, the project owner shall provide written confirmation to the CPM from the Alameda County that the design meets all applicable County requirements.

SOILS&WATER 5: Total water use by the project owner for the operation of EAEC and associated landscape irrigation shall not exceed a peak annual demand of 7,000 acre-feet and a peak daily flow of 9.2 mgd. Water used by EAEC shall not adversely impact fresh water supplies to municipal or agricultural customers of BBID. The project owner shall use tertiary treated, recycled water produced by Mountain House Community Services District's wastewater treatment plant for cooling and landscape irrigation water requirements. Raw water may be used during periods when daily production of recycled water from Mountain House Community Services District's wastewater treatment plant is not sufficient to meet daily cooling or irrigation water demands of EAEC, or in the event of an unavoidable interruption in recycled water supply due to wastewater treatment plant upset or loss of conveyance. Beginning in 2020 and thereafter, EAEC's raw water use shall not exceed 38 percent of its total annual water demand in any year. If the Mountain House Community Services District recycled water supply is not available for use by EAEC as of EAEC's commercial operation date, the project owner shall immediately notify the CPM of its alternative plan. The written alternative plan must specify the cause and propose an equivalent new source of recycled water, modified cooling technology, or other reasonable solution that can accomplish conservation of raw water as specified in this condition. The alternative plan must be approved by the Commission.

Verification: In the annual compliance report, the project owner shall submit a water use summary report to the CPM that documents the previous year's actual raw and recycled water use. The water use summary report shall be consistent with requirements of **Condition of Certification SOILS&WATER 8**, distinguishing sources of water and their uses. The water use summary shall provide daily meter readings of EAEC recycled water use, EAEC raw water use, Mountain House Community Services District's (MHCSD) wastewater treatment plant recycled water production, and any other supplemental recycled water sources.

The water use summary shall also include:

1. a written explanation of EAEC daily operating conditions and associated water use;

2. Data and associated calculations as specified in **Condition of Certification SOILS&WATER 8,**

3. Daily recycled water production information from MHCSD and

4. Demonstration that daily raw water use for cooling and irrigation is limited to only quantities needed to augment daily-recycled water supply. Annual average will be calculated using actual project water use over consecutive five-year increments starting with the first year of operation.

SOILS&WATER 6: The project owner shall submit to BBID a written request, pursuant to Water Code section 13580.7, to enter into an agreement in order to provide recycled water service to EAEC. After submittal of this request, the project owner shall enter a water supply agreement with BBID setting forth the rates and conditions for raw water and recycled water supply. The project owner shall ensure that the agreement provides for EAEC to have first priority for allocation of recycled water necessary to serve EAEC. The contract shall also set forth each party's responsibility for the design, construction, and funding of the recycled water supply pump station and pipeline from MHCSD. The contract shall be executed prior to the construction of any project structures or facilities and a signed copy submitted to the CPM. The pipeline to convey recycled water from MHCSD's treatment facility to EAEC shall be built prior to the start of plant operation.

Verification: No later than sixty (60) days prior to the start of construction, the project owner shall submit proof to the CPM that BBID has received the request. No later than 120 days after the request is submitted the project owner shall submit to the CPM an executed Water Supply Service Contract with BBID for fresh and recycled water supply to EAEC. No later than thirty (30) days prior to plant operation, the project owner shall submit evidence to the CPM that the recycled water supply pipeline has been built and is capable of conveying no less than 5,900 gpm to EAEC.

SOILS&WATER 7: The EAEC project shall include the following specific design features to ensure maximum use of recycled water:

a) Plant and site piping shall be installed to allow recycled water to be used for cooling tower makeup and landscape irrigation. Cross connection protection between raw, recycled, and potable water systems shall be in accordance with Chapter 19, Backflow Prevention and Cross Connection Control, of Title 22, California Code of Regulations as proposed in the March 20, 2002 Draft Cross Connection Control Regulations.

b) Systems shall be included to facilitate the feed of a second oxidizing biocide (in addition to sodium hypochlorite) and also a non-oxidizing biocide.

c) The surface condenser shall be constructed of materials compatible with recycled water.

d) The recycled water pipeline from the Mountain House Community Services District wastewater treatment plant to EAEC shall be sized to convey, at a minimum, 5,900 gpm.

Approval of the final design of the water supply and treatment system by the CPM shall be obtained prior to the start of construction of these systems.

Verification: At least sixty (60) days prior to the start of construction of the water supply system, the project owner shall submit to the CPM its water supply system design demonstrating compliance with this condition. These required features shall be included in the final design drawings submitted to the CBO as required in **Condition of Certification CIVIL-1**. Approval of the final design of the water supply and treatment system by the CPM shall be obtained prior to the start of construction of the systems.

SOILS&WATER 8: Prior to the use of any water by the EAEC, the project owner shall install metering devices as part of the water supply and treatment system to monitor and record in gallons per day, 1) total volumes of each raw and recycled water supplied to EAEC, and 2) volumes used of each source for cooling purposes, potable water treatment system, non-cooling process water supplies, irrigation, wash water, demineralized water and turbine injection. These metering devices shall be operational for the life of the project.

An annual summary of daily water use by EAEC, differentiating between raw, potable and recycled water and the uses of each at EAEC, shall be submitted to the CPM in the annual compliance report.

Verification: No less than sixty (60) days prior to the start of operation of EAEC, the project owner shall submit to the CPM evidence that metering devices have been installed and are operational on the pipelines serving and within the project. These metering devices shall be capable of recording the quantities in gallons of water delivered to EAEC and differentiate between uses of these supplies by EAEC in order to report daily water demand (including irrigation). The project owner shall provide a report on the servicing, testing and calibration of the metering devices and operation in the annual compliance report.

The project owner shall submit a water use summary report to the CPM in the annual compliance report for the life of the project. The annual summary report shall be based on and shall distinguish recorded daily use of raw, potable and recycled water for all project uses, including landscape and agriculture irrigation. Included in the annual summary of water use, the project owner shall submit copies of meter records from MHCSD documenting the quantities of tertiary-treated disinfected wastewater produced (in gpd) by their treatment plants over the previous year. The report shall include calculated monthly range, monthly average, and annual use by the project in both gallons per minute and acre-feet. For subsequent years this information shall also include the yearly range and yearly average water used by the project.

SOILS&WATER 9: Prior to construction of the fresh water pipeline, the project owner shall provide the CPM with a copy of the Encroachment Permit for the installation of the fresh water pipeline under the Delta-Mendota Canal. Approval by the U.S. Bureau of Reclamation and Delta-Mendota Water Authority must be obtained prior to initiating any directional drilling activities.

Verification: At least thirty (30) days prior to construction, the project owner shall submit to the CPM a copy of the Encroachment Permit issued by the U.S. Bureau of Reclamation and Delta-Mendota Water Authority.

SOILS&WATER 10: WITHDRAWN BY STAFF.

SOILS&WATER 11: Wash wastewater resulting from periodic cleaning of the compressors and HRSG's shall be contained on-site in a sump with the contents of the sump periodically pumped out by a vacuum truck and transported off-site for disposal at an appropriately licensed facility.

Verification: The project owner, in the annual compliance report, shall provide an accounting summary of the quantity and quality of wash and chemical cleaning water contained on-site, including the frequency of pumping, and the volume of water transported off-site for disposal. The accounting shall include documentation of the analytical reports required for disposal, and pre-treatment processing, if required for disposal.

SOILS&WATER 12: Surface or subsurface disposal of process wastewater or contaminated stormwater from EAEC is prohibited. The project owner shall treat all appropriate wastewater streams with a zero liquid discharge (ZLD) system that results in a residual cake solid waste and recycle stormwater flows to the cooling towers.

Verification: Within sixty (60) days following the commencement of project operations, the project owner shall submit to the CPM the final design of the zero liquid discharge system, including schematic, narrative of operation, maintenance schedules, on-site storage facilities, containment measures and influent water quality. This information shall also include the results of the Waste Extraction Test of the residual cake solid waste from the zero liquid discharge system. In the annual compliance report, the project owner will submit a status report on operation of the zero liquid discharge system, including disruptions, maintenance, volumes of interim wastewater streams stored on site, volumes of residual cake solids generated and the landfills used for disposal. In the event of ZLD system shutdown or any maintenance affecting the ability for EAEC to continue treatment at the rate of its production of wastewater, the project owner shall submit to the CPM a description of their temporary alternative disposal method for review and approval. In addition, the project owner shall submit to the CPM copies of the annual monitoring report for storm water as normally submitted to the Central Valley RWQCB under the General NPDES Permit for Discharges of Storm Water Associated with Industrial Activity.

SOILS&WATER 13: Potable water for the EAEC shall be provided by an on-site domestic (potable) water treatment system. Prior to installation of the on-site domestic (potable) water treatment system, the project owner shall submit detailed engineering drawings and a narrative description of this facility and its uses to the California Department of Health Services' (DHS) Drinking Water Program for review and approval. A water supply permit approved by DHS' Drinking Water Program for the on-site domestic water treatment facility shall be obtained by the project owner and a copy submitted to CPM prior to use of the system.

Verification: Prior to the installation of the on-site domestic water treatment system, copy of the approved water supply permit issued by DHS shall be submitted to the CPM.

C. CULTURAL RESOURCES

The Energy Commission's primary concerns in its cultural resource analysis are to ensure that all potential impacts are identified and that significant adverse impacts are avoided or reduced to a level of insignificance. The determination of potential impacts to cultural resources from the proposed EAEC is required by the CEC's siting regulations and CEQA. Three aspects of cultural resources were addressed in Applicant's and in Staff's analysis: prehistoric archaeological resources, historic period resources, and ethnographic resources.

SUMMARY OF THE EVIDENCE

Applicant's witness provided testimony that Applicant conducted a field survey of the proposed site and linear facilities routes. The survey yielded no significant findings. No significant prehistoric archaeological remains were detected from surface examination of exposed soils. The CEC and Applicant conducted historic resources surveys during the EAEC's licensing process. The results of these surveys indicated that several infrastructure features appear eligible for listing with the National Register of Historic Places and the California Register of Historical Resources (Delta Mendota Canal Intake Structure and the Westside Irrigation District Complex). (Ex. 2, p. 2.3-3.)

The EAEC will comply with laws, ordinances, regulations and standards by completing preconstruction surveys for cultural resources, completing test excavations for cultural resources that are not visible on the surface, and monitoring during earth disturbing activities. With implementation of the above mitigation measures, in combination with the Conditions of Certification:

- the project will comply with all applicable federal, state, and local LORS, and
- potential impacts, if any, are mitigated to a level of less than significant. (Ex. 2, p. 2.3-4.)

Staff's witness testified that the results of the records search indicate that buried archaeological resources from the prehistoric and historic periods could be encountered during construction of the reclaimed water line. If the following conditions of certification are properly implemented, the project will comply with applicable LORS for archaeological resources and will reduce impacts below a significant level. (*See* Conditions **CUL-1**, **5**, **7-9**[145]; and **CUL-2**, **3-6**.) Cultural concerns raised by Native Americans at the Santa Rosa Rancheria, a federally recognized tribe, will be addressed by an ethnography of the project area, prepared by anthropologists from California State University, Fresno. (Ex. 1, p. 5.3-26.)

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, the Committee finds as follows:

1. No known cultural resources exist in the general project area.
2. Construction activities associated with the EAEC project and related facilities present the greatest potential for adverse impacts to cultural resources.
3. The Conditions of Certification that follow contain measures that will assure adequate mitigation of impacts to any cultural resources encountered during construction of the project site.

We therefore conclude that implementation of the Conditions of Certification will assure that significant adverse impacts do not occur to cultural resources as a result of project construction or operation, and that implementation of the Conditions of Certification below will assure that the EAEC project will comply with all applicable LORS pertaining to cultural resources set forth in the appropriate portion of **Appendix A** of this Decision.

---

[145] Conditions 1,5 and 7-9 are written to address the mitigation recommendations of both the CEC and WAPA under state and federal law. Conditions 2, and 3-6 are written to address the CEC's mitigation recommendations under state law.

CONDITIONS OF CERTIFICATION

CUL-1: Prior to the start of ground disturbance, the project owner shall submit the resume of the proposed Cultural Resources Specialist (CRS), and one alternate CRS, if an alternate is proposed, to the CPM for review and approval. The CRS shall be responsible for implementation of all cultural resources conditions of certification and may obtain qualified cultural resource monitors (CRMs) to monitor as necessary on the project. If the project owner desires resumes for additional alternate CRSs may be submitted to the CPM for review and approval. If the alternates meet the criteria of CUL-1, they will be pre-approved and kept on file with the CPM for use in the event that the current CRS and alternate are unable to fulfil their responsibilities. The project owner shall notify the CPM if they elect to replace the CRS or alternate and shall provide the reason the CRS and alternate can not fulfill their responsibilities.

1. The resume for the CRS and alternate, shall include information that demonstrates that the minimum qualifications specified in the U.S. Secretary of Interior Guidelines, as published by the Code of Federal Regulations, Title 36, section 61 (2000) are met. In addition, the CRS shall have the following qualifications:

   a) The technical specialty of the CRS shall be appropriate to the needs of the project and shall include, a background in anthropology, archaeology, history, architectural history or a related field; and

   b) At least three years of archaeological or historic, as appropriate, resource mitigation and field experience in California.

2. The resume shall include the names and phone numbers of contacts familiar with the work of the CRS on referenced projects and demonstrate that the CRS has the appropriate education and experience to accomplish the cultural resource tasks that must be addressed during ground disturbance, grading, construction and operation. In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CPM, that the proposed CRS or alternate has the appropriate training and background to effectively implement the conditions of certification.

3. CRMs shall meet the following qualifications:

a) A BS or BA degree in anthropology, archaeology, historic archaeology or a related field and one year experience monitoring in California; or

b) An AS or AA in anthropology, archaeology, historic archaeology or a related field and four years experience monitoring in California; or

c) Enrollment in upper division classes pursuing a degree in the fields of anthropology, archaeology, historic archaeology or a related field and two years of monitoring experience in California.

4. The project owner shall ensure:

a) that the CRS fulfills all the requirements of these conditions of certification;

b) that the CRS obtains technical specialists, and CRMs, if needed;

c) that the CRS manages all monitoring, mitigation and curation activities; and

d) that the CRS evaluates any cultural resources that are newly discovered or that may be affected in an unanticipated manner for eligibility to the California Register of Historic Resources (CRHR).

Verification:

1. The project owner shall submit the resume for the CRS and alternate CRS at least sixty (60) days prior to the start of ground disturbance. Resumes for additional alternates may be submitted at least ten (10) days prior to accepting responsibilities. In the event an additional alternate is selected, the project owner shall notify the CPM within 24 hours by telephone or e-mail.

2. At least ten (10) days prior to a termination or release of the CRS, the project owner shall submit the resume of the proposed new CRS.

3. At least twenty (20) days prior to ground disturbance, the CRS shall submit written notification identifying anticipated CRMs for the project stating they meet the minimum qualifications required by this condition. If additional CRMs are needed later, the CRS shall submit written notice one week prior to any new CRMs beginning work.

4. At least ten (10) days, prior to the start of ground disturbance, the project owner shall confirm in writing to the CPM that the approved CRS will be available for onsite work and is prepared to implement the cultural resources conditions of certification.

CUL-2: (1) Prior to the start of ground disturbance, the project owner shall provide the CRS and the CPM with maps and drawings showing the footprint of the power plant and all linear facilities. Maps shall include the appropriate USGS quadrangles and a map at an appropriate scale (e.g., 1:2000 or 1" = 200') for plotting individual artifacts. If the CRS request enlargements or strip maps for linear facility routes, the project owner shall provide them with copies to the CPM. If the footprint of the power plant or linear facilities changes, the project owner shall provide maps and drawings reflecting these changes, to the CRS and the CPM. Maps shall identify all areas of the project where ground disturbance is anticipated.

(2) If construction of this project will proceed in phases, maps and drawings may be submitted in phases. A letter identifying the proposed schedule of each project phase shall be provided to the CPM.

(3) If not previously submitted, prior to implementation of additional phases of the project, current maps and drawings shall be submitted to the CPM.

(4) At a minimum, the CRS shall consult weekly with the project superintendent or construction field manager to confirm area(s) to be worked during the next week, until ground disturbance is completed. A current schedule of anticipated project activity shall be provided to the CRS on a weekly basis during ground disturbance and provided to the CPM in each Monthly Compliance Report (MCR).

Verification: At least forty-five (45) days prior to the start of ground disturbance, the project owner shall provide the designated CRS and the CPM with the maps and drawings. If this is to be a phased project, a letter identifying the proposed schedule of construction phases of the project shall also be submitted. If not previously submitted, at least thirty (30) days prior to the start of ground disturbance on each phase of the project, following initial ground disturbance, copies of maps and drawings reflecting additional phases of the project, shall be provided to the CPM for review and approval. (4) If there are changes to the scheduling of the construction phases of the project, a letter shall be submitted to the CPM within five (5) days of identifying the changes.

CUL-3: Prior to the start of ground disturbance; the designated CRS shall prepare, and the project owner shall submit to the CPM for review and approval, a Cultural Resources Monitoring and Mitigation Plan (CRMMP), identifying general and specific measures to minimize potential impacts to sensitive cultural resources.

The CRMMP shall include, but not be limited to, the following elements and measures.

a. A proposed general 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 ground disturbance, 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 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 all avoidance measures such as flagging or fencing, to prohibit or otherwise restrict access to sensitive resource areas that are to be avoided during construction and/or operation, and identification of areas where these measures are to be implemented. The discussion shall address how these measures will be implemented prior to the start of construction and how long they will be needed to protect the resources from project-related effects.

f. A discussion of the location(s) where monitoring of ground disturbing activities is deemed necessary. Monitoring shall be conducted full time, during ground disturbance on the reclaimed water line from 1000 feet prior to its intersection with Henderson and Bethany Roads to its end. Spoils generated by ground disturbance shall be examined every other day to determine whether there is evidence of cultural resources.

g. A discussion of the requirement that all cultural resources encountered will be recorded on a DPR form 523 and mapped (may include photos). In addition all archaeological materials collected as a result of the archaeological investigations shall be curated in accordance with The State Historical Resources Commission's "Guidelines for the Curation of Archaeological Collections," into a retrievable storage collection in a public repository or museum. The public repository or museum must meet the standards and requirements for the curation of cultural resources set forth at Title 36 of the Code of Federal Regulations, section 79.

Discussion of any requirements, specifications, or funding needed for curation of the materials to be delivered for curation and how requirements, specifications and funding will be met. Also the name and phone number of the contact person at the institution shall be included. In addition, include information indicating that the project owner will pay all curation fees and that any agreements concerning curation will be retained and available for audit for the life of the project.

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. A discussion of the proposed Cultural Resource Report (CRR) which shall be prepared according to Archaeological Resource Management Report (ARMR) Guidelines. The CRR shall include all cultural resource information obtained as a result of this project.

Verification: At least thirty (30) days prior to the start of ground disturbance, the project owner shall provide the CRMMP, prepared by the CRS, to the CPM for review and written approval.

CUL-4: Worker Environmental Awareness Training for all new employees shall be conducted prior to and during periods of ground disturbance. New employees shall receive training prior to starting work at the project site or linears. The training may be presented in the form of a video. The training shall include a discussion of applicable laws and penalties under the law. Training shall also include samples or visuals of artifacts that might be found in the project vicinity and the information that the CRS, alternate CRS or monitor has the authority to halt construction in the event of a discovery or unanticipated impact to a cultural resource. The training shall also instruct employees to halt or redirect work in the vicinity of a find and to contact their supervisor and the CRS or monitor. An informational brochure shall be provided that identifies reporting procedures in the event of a discovery. Workers shall sign an acknowledgement form that they have received training and a sticker shall be placed on hard hats indicating that environmental training has been completed.

Verification: The project owner shall provide in the Monthly Compliance Report the WEAP Certification of Completion form of persons who have completed the training in the prior month and a running total of all persons who have completed training to date.

CUL-5: The CRS, alternate CRS and the CRM(s) shall have the authority to halt or redirect construction if previously unknown cultural resource sites or materials are encountered or if known resources may be impacted in a previously unanticipated manner. If such resources are found, the halting or redirection of construction shall remain in effect until all of the following have occurred:

a. the CRS has notified the CPM and the project owner of the find and the work stoppage;

b. the CRS, the project owner, the CPM and Western have conferred and determined what, if any, data recovery or other mitigation is needed; and

c. any necessary data recovery and mitigation has been completed.

If data recovery or other mitigation measures are required, the CRS and/or the alternate CRS and CRM(s), including Native American monitor(s), shall monitor these data recovery and mitigation measures, as needed.

For any cultural resource encountered, the project owner shall notify the CPM within 24 hours after the find.

All required data recovery and mitigation shall be completed expeditiously unless all parties agree to additional time.

Verification: At least thirty (30) days prior to the start of ground disturbance, the project owner shall provide the CPM with a letter confirming that the CRS, alternate CRS and cultural resources monitor(s) have the authority to halt construction activities in the vicinity of a cultural resource find and stating that the CRS and project owner will notify the CPM and project owner within 24 hours after a find.

CUL-6: Cultural resource monitoring shall be conducted full time during ground disturbance necessary for construction of the reclaimed water line along a portion of Byron-Bethany Road and along Bethany Road. Monitoring should begin 1,000 feet northwest of the intersection of Byron-Bethany Road and Mountain House Creek and end at the intersection of Bethany Road and Wicklund Road.

1. Cultural resources monitoring shall be conducted during initial ground disturbance at the plant site and all linear components. The potential

for encountering cultural resources shall be assessed by the CRS based on the initial ground disturbance observations. If the initial assessment indicates a potential for encountering cultural resources, then full time monitoring shall continue until the CRS concludes and justifies to the CPM that full time monitoring is no longer necessary. If the CRS determines that encountering cultural resources are unlikely, all spoils from ground disturbance shall be examined every other day as ground disturbing project activities continue. If the CRS determines that full-time monitoring or spoil examination is not necessary in certain locations, a letter or e-mail providing a detailed justification for the decision to reduce the level of monitoring shall be provided to the CPM for review and approval prior to any reduction in monitoring.

2. Monitors shall keep a daily log of any monitoring or cultural resource activities and the CRS shall prepare a weekly summary report on the progress or status of cultural resources-related activities providing an update that may include information that no monitoring activities have occurred. The CRS may informally discuss cultural resource monitoring and mitigation activities with Energy Commission technical staff.

3. The CRS and project owner shall notify the CPM, by telephone or e-mail, of any incidents of non-compliance with any cultural resources conditions of certification within 24 hours of becoming aware of the situation. The CRS shall also recommend corrective action to resolve the problem or achieve compliance with the conditions of certification. A report detailing resolution of the issue shall be provided to the CPM in the MCR no earlier than two weeks following the incident.

4. A Native American monitor shall be obtained to monitor ground disturbance in the area of the reclaimed water line where cultural resources monitoring shall occur full time, per this condition. Native American monitoring shall also occur during any cultural resource monitoring for the project, including investigation of initial ground disturbance and spoils and data recovery, if data recovery is necessary. Informational lists of concerned Native Americans and Guidelines for monitoring shall be obtained from the Native American Heritage Commission. Preference in selecting a monitor shall be given to Native Americans with traditional ties to the area that will be monitored.

5. At least 30 days prior to ground disturbance, the project owner shall ensure that an ethnography is initiated on behalf of Native Americans at the Santa Rosa Rancheria. The ethnography, shall include, but not necessarily be limited to the proposed scope of the study, provided as a response to Data Request Responses Set No. 6, Cultural Resources No.155. The scope of the study will focus on lands within a 3-mile radius surrounding the project area. Consideration of a larger area

shall be included to allow discussion of historic interaction between Bay Miwok and Northen Valley Yokuts people. Primary tasks will include preparation of an ethnographic report for the project area. Consultation with Nototomne Yokuts, Tachi Yokuts/Santa Rosa Rancheria and other interested groups as identified through the consultation with the Native American Heritage Commission. The report shall also provide recommendations, if applicable. A copy of the scope of work and a summary of achieved objectives shall be provided to the CPM and Western for review and approval. A copy of the completed ethnography shall be provided to Western and the CPM for review and approval.

Verification: During the ground disturbance phases of the project, if the CRS wishes to reduce the level of monitoring occurring at the project, a letter identifying the area(s) where the CRS recommends the reduction and justifying the reductions in monitoring shall be submitted to the CPM for review and approval.

During the ground disturbance phases of the project, the project owner shall include in the MCR to the CPM copies of the weekly summary reports prepared by the CRS regarding project-related cultural resources monitoring activities. Copies of daily logs shall be retained and made available for audit by the CPM as needed.

Within 24 hours of recognition of a non-compliance issue, the CRS shall notify the CPM by telephone or e-mail of the problem. Daily logs shall include forms detailing any instances of non-compliance with conditions of certification. In the event of a non-compliance issue, a report written no sooner than two weeks after resolution of the issue shall be provided in the next MCR.

One week prior to ground disturbance in areas where there is a potential to discover Native American artifacts, the project owner shall send notification to the CPM identifying the person(s) retained to conduct Native American monitoring. If efforts to obtain the services of a qualified Native American monitor are unsuccessful, the project owner shall immediately inform the CPM who will initiate a resolution process.

No later than ninety (90) days after the start of ground disturbance, a copy of the scope of work of the ethnography and a summary of achieved objectives shall be submitted to the CPM and Western for review and approval. No later than 9 months after the initial ground disturbance, a copy of the completed ethnography shall be provided to Western and the CPM for review and approval.

CUL-7: Following the discovery of significant cultural resources, the project owner shall ensure that the CRS prepares a research design and a scope of work for any necessary data recovery or additional

mitigation. The project owner shall submit the proposed research design and scope of work to Western's archeologist and the CPM for review and approval.

The proposed research design and scope of work shall include (but not be limited to):

a. a discussion of the methods to be used to recover additional information and any needed analysis to be conducted on recovered materials;

b. a discussion of the research questions that the materials may address or answer by the data recovered from the project;

c. discussion of possible results and findings; and

d. an estimate of the time, personnel, and costs needed to complete the recovery and analysis of materials and to prepare report.

Verifications: The project owner shall ensure that the CRS prepares and submits the research design and scope of work within fourteen (14) days following the determination that significant materials have been discovered. After completion of the research design and scope of work, the project owner shall submit it to Western and the CPM for review and approval. Western shall submit the research design and scope of work to the State Historic Preservation Officer as part of consultation under Section 106.

CUL-8: **The** project owner shall ensure that the CRS prepares a report on any discovery of cultural resources. The project owner shall submit the report to Western and the CPM for review and approval.

The Cultural Resources Report (CRR) shall include (but not be limited to) the following:

1. A brief description of pre-project literature search and surveys;

2. a description of the discovery;

3. a description of the process used to arrive at a determination of significance;

4. a discussion of the research questions that the recovered data could address or answer;

5. a description of the methods employed in the field and laboratory to complete data recovery efforts;

6. a description (including drawings and/or photos) of recovered cultural materials;
7. an inventory list of recovered cultural resource materials;
8. results and findings of any special analyses conducted on recovered cultural resource materials, including an interpretation of the site in regards to any research design prepared prior to the data recovery;
9. conclusions and recommendations;
10. maps (7.5 minute USGS topographic map) showing the area involved in the data recovery;
11. completed state site forms, including photos, maps, and drawings; and
12. the name and location of the public repository receiving the recovered cultural resources for curation.

Although, no cultural resources are identified as a result of the project, a CRR shall be prepared that address the entire project. The proposed CRR shall be prepared according to Archaeological Resource Management Report (ARMR) Guidelines. The CRR shall include all cultural resource information obtained as a result of this project. All survey reports, monitoring records and additional research reports not previously submitted to the California Historic Resource Information System (CHRIS) shall be included as an appendix to the CRR. This report shall be submitted to the CPM after the conclusion of all ground disturbance (including landscaping). This report shall be considered final upon approval by the CPM and Western.

Verification: The project owner shall ensure that the CRS completes the CRR within 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 Western and the CPM for review and approval. Western will submit the report, when approved, to the State Historic Preservation Officer in order to complete consultation under Section 106.

Whether or not cultural resources are identified as a result of the project, the CRR shall be submitted to the CPM and Western within ninety (90) days after the conclusion of ground disturbance, including landscaping, for review and approval.

CUL-9: The CRS shall provide a copy of a curation agreement from a public repository that meets the requirements set out in Title 36, **CFR** section 79 for the curation of cultural resources in the event that cultural materials are discovered during construction activities (Condition Cul-7). In

addition, the specialist shall ensure that all cultural resource materials, maps, and data collected during data recovery and mitigation for the project are delivered to the repository following the approval of the report on data recovery. The project owner shall pay any fees for curation required by the repository.

Verification: The project owner shall provide Western and the CPM with a copy of the curation agreement at least ten (10) days prior to the initiation of construction activities. If there are procedural restrictions on the issuance of such an agreement (e.g., if the repository will not issue an agreement until they know for sure that there will be material curated in their facility), the specialist shall provide a copy of an agreement no more than thirty (30) days following the discovery of cultural materials. The specialist shall provide Western and the CPM with a copy of an inventory of all materials curated at the facility and documentation that they have been accepted for curation.

For the life of the project the project, owner shall maintain in its of compliance files, copies of signed agreements with the public repository to which the project owner has delivered cultural resource materials for curation.

D. GEOLOGICAL AND PALEONTOLOGICAL RESOURCES

The Energy Commission's primary objective in its geological and paleontological resource analyses is to ensure that there will be no significant adverse impacts to significant geologic and paleontological resources during project construction, operation, and closure. Paleontological resources include the fossilized remains or trace evidence of prehistoric plants or animals, which are preserved in soil or rock. These fossils are significant because they help document the evolution of particular groups of organisms and the environment in which they live.

SUMMARY OF THE EVIDENCE

Geology

Applicant provided testimony on the project's potential impacts to geological resources, which concluded that the project would have no significant adverse effect on geologic resources. (Ex. 3H, p. 3.3-1 to 3.3-2.)

Applicant's testimony states that the most significant geologic hazard at the EAEC site is most likely strong ground shaking due to an earthquake. During strong ground shaking, loose saturated, cohesionless soils can experience a temporary loss of shear strength, or liquefaction. The southeastern-most corner of Contra Costa County has been designated as having a "Generally High" liquefaction potential by the Contra Costa General Plan. However, based upon the site geotechnical investigation liquification is not a significant concern for the EAEC site. Expansive soils shrink and swell with wetting and drying. The shrink-swell capacity of expansive soils can result in differential movement beneath foundations. Based upon the site geotechnical investigation, expansive soils are present under the EAEC site. However, any impacts associated with this can be mitigated. (Ex. 3H, p. 3.3-2.)

The generating facility and all of the associated linear facilities will be designed and constructed in accordance with California Building Code (CBC), Seismic Zone 4 requirements to minimize the exposure of people to risks associated with large seismic events. Applicant supported this analysis by sponsoring Section 3.3-1, Geologic Hazards and Resources and Section 8.15 of the AFC. (Exs. 2; 3 H.)

Staff's witness provided testimony that design and construction of the project to conform to the CBC (1998) requirements will ensure that the project has no adverse impact on geological resources. (Ex. 1, p. 6.2-7; *see* Conditions **GEN-1**, **GEN-5**, and **CIVIL-1** in our Facility Design section.)

Paleontological Resources

Applicant sponsored testimony on the project's potential impacts to paleontological resources. Applicant concluded that the project site's filling and grading is not expected to result in significant adverse impacts to paleontological resources, as the ground surface in this area is already relatively flat and has already been disturbed by farming. (Ex. 3I, p. 3-3.2.)

Applicant testified that:

- no previously reported fossils are known to directly underlie the proposed project site, however,
- their exists a previously recorded fossil site in unnamed Quaternary alluvium within one-half mile of the proposed project site, which
- suggests that there is a high potential for additional similar fossil remains to be uncovered by excavations at the proposed EAEC site;
- therefore, the unnamed Quaternary alluvium has a high sensitivity for producing additional paleontological resources; and
- Identifiable fossil remains recovered from sediments of the unnamed Quaternary alluvium during construction of the EAEC project would be scientifically important. (Ex. 3I, p. 3.2-3.)

Staff reviewed the paleontological resources section of the AFC. Staff testified that the site can be divided into two lithologically similar units. Both have yielded significant finds of vertebrate fossils in other areas of Alameda County, but neither is known to have shown fossils at the proposed EAEC site. The nearest documented fossil locality is less than one-half mile west-southwest of the EAEC and is designated by the University of California, Berkley Museum of Paleontology as site UCMP V4801. The Quaternary Alluvial deposits occur near the ground surface and will be disturbed by construction activities, both at the plant site and along the linear support facilities. Most of the area has been cultivated for many years, so that the upper foot or so has already been severely disturbed. Deeper excavations will encounter undisturbed zones of the Quaternary Alluvium and, possibly, the underlying Tulare Formation. (Ex. 2, § 8.16.)

Staff has proposed Conditions of Certification, below, that will ensure that any potential impacts upon paleontological will be reduced to a less than significant level should they be encountered during construction, operation, or closure of the project. Applicant concurs with these Conditions. (Ex. 1, p. 6.2-5.)

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, the Committee finds as follows:

1. Implementation of the Conditions of Certification will reduce geological and paleontological impacts to less than significant.
2. The Conditions of Certification will ensure that activities associated with construction and operation of the project will cause no significant cumulative adverse impact to geological or paleontological resources.
3. With implementation of the Conditions of Certification, the EAEC project will comply with all applicable LORS.

We therefore conclude that the project will not cause any significant adverse direct, indirect, or cumulative impacts to geological, mineral, or paleontological resources, and will comply with all applicable LORS.

CONDITIONS OF CERTIFICATION

PAL-1: The project owner shall provide the CPM with the resume and qualifications of its Paleontological Resource Specialist (PRS) for review and approval and the qualifications of the Paleontological Resource Monitors (PRMs) for review. If the approved PRS or one of the PRMs is replaced prior to completion of project mitigation and report, the project owner shall obtain CPM approval of the replacement.

The PRS resume shall include the names and phone numbers of contacts. The resume shall also demonstrate to the satisfaction of the CPM, the appropriate education and experience to accomplish the required paleontological resource tasks.

As determined by the CPM, the PRS shall meet the minimum qualifications for a vertebrate paleontologist as described in the Society of Vertebrate Paleontologists (SVP) guidelines of 1995. The experience of the PRS shall include the following:

1) institutional affiliations or appropriate credentials and college degree;
2) ability to recognize and collect fossils in the field;
3) local geological and biostratigraphic expertise;
4) proficiency in identifying vertebrate and invertebrate fossils; and
5) the PRS shall have at least three years of paleontological resource mitigation and field experience in California, and at least one year of experience leading paleontological resource mitigation and field activities.

The project owner shall ensure that the PRS obtains qualified paleontological resource monitors to monitor as necessary on the project. Paleontologic resource monitors (PRMs) shall have the equivalent of the following qualifications:

1) BS or BA degree in geology or paleontology and one year experience monitoring in California; or
2) AS or AA in geology, paleontology or biology and four years experience monitoring in California; or

3) Enrollment in upper division classes pursuing a degree in the fields of geology or paleontology and two years of monitoring experience in California.

Verification: At least sixty (60) days prior to the start of ground disturbance, the project owner shall submit a resume and statement of availability of its designated PRS for on-site work.

At least twenty (20) days prior to ground disturbance, the PRS or project owner shall provide a letter with resumes naming anticipated monitors for the project and stating that the identified monitors meet the minimum qualifications for paleontological resource monitoring required by the condition. If additional monitors are obtained during the project, the PRS shall provide additional letters and resumes to the CPM attesting to the monitor's qualifications. The letter shall be provided to the CPM no later than one week prior to the monitor beginning on-site duties.

Prior to the termination or release of a PRS, the project owner shall submit the resume of the proposed new PRS to the CPM for review and approval.

PAL-2: The project owner shall provide to the PRS and the CPM, for approval, maps and drawings showing the footprint of the power plant and all linear facilities. Maps shall identify all areas of the project where ground disturbance is anticipated. If the PRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the PRS and CPM. The site grading plan and the plan and profile drawings for the utility lines would normally be acceptable for this purpose. The plan drawings should show the location, depth, and extent of all ground disturbances and can be 1 inch = 40 feet to 1 inch = 100 feet range. If the footprint of the power plant or linear facility changes, the project owner shall provide maps and drawings reflecting these changes to the PRS and CPM.

If construction of the project will proceed in phases, maps and drawings may be submitted prior to the start of each phase. A letter identifying the proposed schedule of each project phase shall be provided to the PRS and CPM. Prior to work commencing on affected phases, the project owner shall notify the PRS and CPM of any construction phase scheduling changes.

At a minimum, the project owner shall ensure that the PRS or PRM consults weekly with the project superintendent or construction field manager to confirm area(s) to be worked during the next week, until ground disturbance is completed.

Verification: At least thirty (30) days prior to the start of ground disturbance, the project owner shall provide the maps and drawings.

If there are changes to the footprint of the project, revised maps and drawings shall be provided at least fifteen (15) days prior to the start of ground disturbance.

If there are changes to the scheduling of the construction phases, the project owner shall submit a letter to the CPM within five (5) days of identifying the changes.

PAL-3: The project owner shall ensure that the PRS prepares, and the project owner shall submit to the CPM for review and approval, a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) to identify general and specific measures to minimize potential impacts to significant paleontological resources. Approval of the PRMMP by the CPM shall occur prior to any ground disturbance. The PRMMP shall function as the formal guide for monitoring, collecting and sampling activities and may be modified with CPM approval. This document shall be used as a basis for discussion in the event that on-site decisions or changes are proposed. Copies of the PRMMP shall reside with the PRS, each monitor, the project owner's on-site manager, and the CPM.

The PRMMP shall be developed in accordance with the guidelines of the Society of the Vertebrate Paleontologists (SVP, 1995) and shall include, but not be limited to, the following:

1. Assurance that the performance and sequence of project-related tasks, such as any literature searches, pre-construction surveys, worker environmental training, fieldwork, flagging or staking; construction monitoring; mapping and data recovery; fossil preparation and collection; identification and inventory; preparation of final reports; and transmittal of materials for curation will be performed according to the PRMMP procedures;
2. Identification of the person(s) expected to assist with each of the tasks identified within the PRMMP and all conditions for certification;
3. A thorough discussion of the anticipated geologic units expected to be encountered, the location and depth of the units relative to the project when known, and the known sensitivity of those units based on the occurrence of fossils either in that unit or in correlative units;
4. An explanation of why, how, and how much sampling is expected to take place and in what units. Include descriptions of different sampling procedures that shall be used for fine-grained and coarse-grained beds;

5. A discussion of the locations of where the monitoring of project construction activities is deemed necessary, and a proposed schedule for the monitoring;
6. A discussion of the procedures to be followed in the event of a significant fossil discovery, including notifications;
7. A discussion of equipment and supplies necessary for collection of fossil materials and any specialized equipment needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits;
8. Procedures for inventory, preparation, and delivery for curation into a retrievable storage collection in a public repository or museum, which meets the Society of Vertebrate Paleontologists standards and requirements for the curation of paleontological resources;
9. Identification of the institution that has agreed to receive any data and fossil materials collected, requirements or specifications for materials delivered for curation and how they will be met, and the name and phone number of the contact person at the institution; and
10. A copy of the paleontological conditions of certification.

Verification: At least thirty (30) days prior to ground disturbance, the project owner shall provide a copy of the PRMMP. The PRMMP shall include an affidavit of authorship by the PRS, and acceptance of the project owner evidenced by a signature.

PAL-4: Prior to ground disturbance and for the duration of construction, the project owner and the PRS shall prepare and conduct weekly CPM-approved training for all project managers, construction supervisors and workers who are involved with or operate ground disturbing equipment or tools. Workers shall not excavate in sensitive units prior to receiving CPM-approved worker training. Worker training shall consist of and initial in-person PRS training during the project kick-off for those mentioned above. Following initial training, a CPM-approved video or in-person training may be used for new employees. The training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or any other areas of interest or concern.

The Worker Environmental Awareness Program (WEAP) shall address the potential to encounter paleontological resources in the field, the sensitivity and importance of these resources, and the legal obligations to preserve and protect such resources.

The training shall include:

1) A discussion of applicable laws and penalties under the law;
2) For locations of high sensitivity, good quality photographs or physical examples of vertebrate fossils that may be expected in the area shall be provided;
3) Information that the PRS or PRM has the authority to halt or redirect construction in the event of a discovery or unanticipated impact to a paleontological resource;
4) Instruction that employees are to halt or redirect work in the vicinity of a find and to contact their supervisor and the PRS or PRM;
5) An informational brochure that identifies reporting procedures in the event of a discovery;
6) A Certification of Completion of WEAP form signed by each worker indicating that they have received the training; and
7) A sticker that shall be placed on hard hats indicating that environmental training has been completed.

Verification: At least thirty (30) days prior to ground disturbance, the project owner shall submit the proposed WEAP including the brochure with the set of reporting procedures the workers are to follow.

At least thirty (30) days prior to ground disturbance, the project owner shall submit the script and final video to the CPM for approval if the project owner is planning on using a video for interim training.

If an alternate paleontological trainer is requested by the owner, the resume and qualifications of the trainer shall be submitted to the CPM for review and approval. Alternate trainers shall not conduct training prior to CPM authorization.

The project owner shall provide in the Monthly Compliance Report the WEAP copies of the Certification of Completion forms with the names of those trained and the trainer or type of training offered that month. The Monthly Compliance Report shall also include a running total of all persons who have completed the training to date.

PAL-5: The project owner shall ensure that the PRS and PRM(s) monitor consistent with the PRMMP, all construction-related grading, excavation, trenching, and augering in areas where potentially fossil-bearing materials have been identified. In the event that the PRS determines full time monitoring is not necessary in locations that were

identified as potentially fossil bearing in the PRMMP, the project owner shall notify and seek the concurrence of the CPM.

The project owner shall ensure that the PRS and PRM(s) have the authority to halt or redirect construction if paleontological resources are encountered. The project owner shall ensure that there is no interference with monitoring activities unless directed by the PRS. Monitoring activities shall be conducted as follows:

1. Any change of monitoring different from the accepted program presented in the PRMMP shall be proposed in a letter or email from the PRS and the project owner to the CPM prior to the change in monitoring. The letter or email shall include the justification for the change in monitoring and submitted to the CPM for review and approval.

2) The project owner shall ensure that the PRM(s) keeps a daily log of monitoring of paleontological resource activities. The PRS may informally discuss paleontological resource monitoring and mitigation activities with the CPM at any time.

3) The project owner shall ensure that the PRS immediately notifies the CPM of any incidents of non-compliance with any paleontological resources conditions of certification. The PRS shall recommend corrective action to resolve the issues or achieve compliance with the conditions of certification.

4) For any significant paleontological resources encountered, either the project owner or the PRS shall notify the CPM immediately (no later than the following morning after the find, or Monday morning in the case of a weekend) of any halt of construction activities.

5) The project owner shall ensure that the PRS prepares a summary of the monitoring and other paleontological activities that will be placed in the Monthly Compliance Reports. The summary will include the name(s) of PRS or monitor(s) active during the month; general descriptions of training and monitored construction activities and general locations of excavations, grading, etc. A section of the report will include the geologic units or subunits encountered; descriptions of sampling within each unit; and a list of fossils identified in the field. A final section of the report will address any issues or concerns about the project relating to paleontologic monitoring including any incidents of non-compliance and any changes to the monitoring plan that have been approved by the CPM. If no monitoring took place

during the month, the project shall include an explanation in the summary as to why monitoring was not conducted.

Verification: The project owner shall ensure that the PRS submits the summary of monitoring and paleontological activities in the Monthly Compliance Report.

PAL-6: The project owner, through the designated PRS, shall ensure the collection, preparation for analysis, analysis, identification and inventory, the preparation for curation, and the delivery for curation of all significant paleontological resource materials encountered and collected during the monitoring, data recovery, mapping, and mitigation activities related to the project.

Verification: The project owner shall maintain in their compliance file copies of signed contracts or agreements with the designated PRS and other qualified research specialists. The project owner shall maintain these files for a period of three years after completion and approval of the CPM-approved PRR. The project owner shall be responsible to pay any curation fees charged by the museum for fossils collected and curated as a result of paleontological monitoring and mitigation.

PAL-7: The project owner shall ensure preparation of a Paleontological Resources Report (PRR) by the designated PRS. The PRR shall be prepared following completion of the ground disturbing activities. The PRR shall include an analysis of the collected fossil materials, related information, and submitted to the CPM for review and approval.
The report shall include, but not be limited to, a description and inventory of recovered fossil materials; a map showing the location of paleontological resources encountered; determinations of sensitivity and significance; and a statement by the PRS that project impacts to paleontological resources have been mitigated.

Verification: Within ninety (90) days after completion of ground disturbing activities, including landscaping, the project owner shall submit the Paleontological Resources Report under confidential cover. b. traffic and transportation

In this section, we examine the extent to which the EAEC will affect the regional and local transportation systems in the vicinity of the project. During these licensing proceedings, we identified the roads and routings to be used during construction and operation phases of the project; analyzed potential traffic problems associated with those routings; examined whether adequate parking capacity was available and whether the project would lead to inadequate emergency access; and analyzed the frequency of and routes associated with the delivery of hazardous materials.

VII. LOCAL IMPACT ASSESSMENT

All aspects of a power plant project effect, in differing degrees, the community in which it is located. The effect of the various elements of a project upon the local area varies from case to case depending upon the nature and the extent of the community and of the associated impacts. In the present instance, we believe the technical elements discussed in this portion of our Decision are those constituting the most likely areas of potential local concern.

A. LAND USE

The discussion of land use impacts for the EAEC focuses on two main issues:

- the proposed project's plan to conform with local land use plans, ordinances, and policies; and
- its potential to have direct, indirect, and cumulative conflicts with existing and planned uses.

In general, a power plant project can be incompatible with existing or planned land uses when it creates unmitigated noise, dust, public health hazards or nuisances, traffic, or visual impacts, or when it significantly restricts existing or future uses.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The proposed EAEC project would be located in far northeastern Alameda County, near the Contra Costa and San Joaquin county borders. Alameda County's East County Area Plan, as modified by "Measure D," (ECAP) is the planning and relevant land use LORS document applicable to the EAEC site.[146]

---

[146] Measure D (the Save Agriculture and Open Space Lands Initiative) passed during the November 7, 2000, election and it amended the ECAP to modify the location and definition of land uses in East Alameda County. ECAP is just a portion of the Alameda County General Plan. (10/15 RT 115:8-12; Exs. 1, pp.5.5-2/4; 1 D & 1 K; 4 B, p. 2.5-2; 6 U, pp. 1-2.)

Measure D states:

> The purpose of this initiative is to preserve and enhance agriculture and agricultural lands, and to protect the natural qualities, the wildlife habitats, the watersheds and the beautiful open spaces of Alameda County from excessive, badly located and harmful development. The measure establishes a County Urban Growth Boundary, which will focus urban-type development in and near existing cities where it will be efficiently served by public facilities, thereby avoiding high costs to taxpayers and users as well as to the environment. The ordinance is designed to remove the County government from urban development outside the Growth Boundary.
>
> The limitations this measure imposes on the amount and location of development aim at preventing excessive growth and curbing the juggernaut of urban sprawl. The Initiative will reduce traffic congestion, air and water pollution, loss of historic and scenic values and the blighting of existing city centers; and will help maintain a high quality of life in Alameda County." (Ex. 1, p. 5.5-3/4.)

Measure D:

- redefined the "Large Parcel Agriculture" description so that it now requires a 100-acre minimum parcel size;
- re-designated areas zoned as "Urban Reserve" to "Large Parcel Agriculture;" and
- amended portions of the East County Area Plan text. (Ex. 1, p. 5.5-4; 10/21 RT 29:8-32:8.)

The crux of the issue in our Land Use section is whether EAEC will comply with Alameda County's ECAP. Applicant and Alameda County assert that it will, Staff defers to Alameda County, and Intervenor Sarvey argues in opposition. (Applicant's Opening Brief on Phase 2 Topics, pp. 20-22, Closing Brief at pp. 77-82; Staff Opening Brief on Phase 2 Topics, pp. 10-13, Closing Brief at pp. 41 *cf* (Intervenor Sarvey Opening Brief on Phase 1 Topic Areas, pp. 21-23, Closing Brief at pp. 21-23 .)

Alameda County has interpreted the EAEC to be to be consistent with ECAP's land use policies finding that:

- ECAP does not preclude construction of a power plant outside of the Urban Growth Boundary (UGB) and on lands designated for Large Parcel Agricultural use; and
- EAEC falls within the definition of 'infrastructure' allowable under Policy 14A of the ECAP, and the electricity produced by this facility would be considered a public utility.[147] (Ex. 1 D, p. 1.)

Staff has acquiesced to Alameda County's ECAP finding as a reasonable interpretation of its own land use policy, and concludes that the EAEC is a consistent and allowed use. (10/21 RT 146:25-148:21; Staff Opening Brief on Phase 2 Topics, pp. 21-22; Ex. 1, p. 5.5-12).

On the other hand, Intervenor Sarvey questions Alameda County's interpretation of its LORS. Intervenor Sarvey's witness testified that:

- ECAP Policy 14A should be read to limit the size of a new power plant to that needed to serve new development in the East County;
- Alternatively, Policy 14A prohibits the construction of infrastructure larger than is necessary to meet projected growth in Alameda County. (Ex. 6 U.)

ECAP's Policy 1 requires Alameda County to identify and maintain an UGB. ECAP's Figure 3 delineates the UGB. The UGB is defined, in part, by Table 1 (Definitions) as a permanent area generally suitable for urban development, which could include a power facility such as the EAEC. Based upon Figure 3, we estimate, conservatively, that the EAEC is at least 9 miles outside the UGB. Areas outside the UGB are redesignated Large Parcel Agriculture, subjecting this designation, with exceptions, to uses generally related to agricultural uses and restricting industrial uses such as the EAEC. The Large Parcel Agriculture designation, for our purposes, expresses two allowable exceptions:

---

[147] Interestingly, the parties at varying times all cite to Policy 14 A, which is the pre-measure D version of the "infrastructure provision" of the East County Area Plan. Policy **13** is ECAP's "infrastructure provision." (*Cf.* Exs. 1, p. 5.5-10; 1 D, p. 1; 6 U, pp. 5/6; & Applicant's Opening Brief on Phase II issues, pp. 21-21; 10/21 RT 101:21-102:7.)

infrastructure and utility corridors. (Exs 1 K, pp. iii, 47, Table 6, Figs. 3 & 7; 2 B, p. 5.5-10; 10/21 RT 95:10-99:11.)

Land Use

The EAEC footprint and linear facilities would include:

- an 820 MW combined cycle plant; augmented by
- 245 MW of duct firing, and a
- 230 kV switchyard, together would occupy a footprint of approximately 25 acres;
- two new 0.5-mile 230-kV transmission lines in Alameda County;
- a 1.8-mile natural gas supply line in Alameda County;
- a 2.1-mile raw water supply line in Alameda and Contra Costa Counties;
- a 1.5-mile recycled water line in Alameda and San Joaquin Counties; and
- a buried, short fiber optic line running across Mountain House Road from the project site to the Tracy Substation in Alameda County would complete EAEC's linear facilities for the project would include. (Ex. 1, p. 5.5-8.)

EAEC's 40-acre site has previously been cultivated for row crops (i.e., tomatoes and the farming of oats, alfalfa, and hay), all crops have been removed and the land has been graded, leaving exposed soil. The site had previously been used for dairy cows. The site and most of the associated linear facilities are on or adjacent to Prime Farmland: 134 acres of the 174-acre parcel are proposed to remain in agricultural use after EAEC's construction. (Ex. 1, p. 5.5-6/7.)

EAEC's surrounding parcel is currently being used for grazing, and to farm oats, alfalfa, and hay crops, and occasionally row crops, such as tomatoes (a single-family residence, which would be vacated prior to the construction and operation of the project, currently exists on the parcel). Scattered rural residences associated with agricultural uses, such as single-family dwellings/farmhouses, and ranchette-style housing with farm equipment storage, occur within one mile southwest of the project site. (Ex. 1, p. 5.5-6/7.)

Land uses surrounding the site include large parcel agriculture, urban development, electric utilities, highways, recreation, an elementary school, a railroad right of way (ROW), and water management projects of statewide importance. These facilities include:

- WAPA's Tracy Substation, which is across Mountain House Road to the southwest (less than 1-mile from EAEC's site);
- major transmission line corridors (3 high voltage transmission lines cross the property north of the EAEC's proposed site);[148]
- the Clifton Court Forebay (approximately 1-mile to the north in Contra Costa County);[149]
- the Mountain House Elementary School (58 students in grades K-8, just over 1 mile south);
- urban construction and development of the new town of Mountain House (2 miles southeast), whose boundary is approximately 1 mile east in San Joaquin County;
- intake structures and pumping stations for the Central Valley Project's (CVP's) Delta-Mendota Canal and the State Water Project's (SWP's) California Aqueduct, and the Bethany Reservoir (all within 2.5-miles southwest);[150]
- Byron Airport (approximately 3 miles northwest of the site in Contra Costa County);
- PG&E's gas compressor station;
- Byron Bethany Road, which is designated a Scenic Highway; and
- numerous windfarms. (Ex. 1, p. 5.5-7; 10/21 RT 67:1-69:5.)

---

[148] From the substation, one 500-kV line exits north, and two 500-kV lines run south. Four 230-kV lines each exit to the north and to the south. Two 230-kV lines run east. One 69-kV line each exits north and south from the substation. Several 230-kV transmission towers are located immediately south of the site along Kelso Road. Grazing and row crop agriculture exists along EAEC's proposed electric transmission line route from the site to the Tracy Substation on the adjacent property across Mountain House Road. (Ex. 1, p. 5.5-7.)

[149] The Livermore Yacht Club (approximately 1.5-miles northwest) operates a 24-slip boating marina on Clifton Court Forebay. (Ex. 1, p. 5.5-7.)

[150] Bethany Reservoir is a State recreation area, which is located approximately 2.5 miles to the southwest. (Ex. 1, p. 5.5-7.)

The raw water supply line would follow Mountain House Road and Byron Bethany Roads for short distances before following a field road and crossing under the Delta Mendota Intake Channel.[151] All raw water supply lines proposed for the project would exist in zones designated by both Alameda and Contra Costa Counties as either agricultural or public zones. (Ex. 1, p. 5.5-8.)

An approximately 4.6-mile recycled water line would run northeast from the project site to Byron Bethany Road, southeast along the south side of the road crossing from Alameda to San Joaquin County, east along Bethany Road and then north on Wicklund Road, both in San Joaquin County. (Ex. 1, p. 5.5-8.)

EAEC's new 20-inch natural gas pipeline, to be installed along an existing ROW, would cross or enter pastures, stockponds, vineyards, and low-density residential areas with farmhouses and ranchette-style houses in agricultural land use areas. These pipelines would also enter the Delta-Mendota Canal water management area and lie adjacent to the Tracy Substation transmission facility. (Ex. 1, p. 5.5-6/8.)

a) Intervenor Sarvey

Intervenor Sarvey sponsored the testimony of Eric Parfrey and Dick Schneider. (Exs. 6 U & V.) Mr. Parfrey, who has served as a Senior Planner for both Contra Costa and San Joaquin Counties testified that Staff's Land Use Analysis ignores impacts to the 44,000 future residents and commercial activities planned within the community of Mountain House while focusing primarily on existing rural

[151] Bethany Road, which forms the northern boundary of the site, is a two-lane road running diagonally northwest to southeast. The water supply pipeline would cross irrigated agricultural land and pasturelands, the Delta-Mendota Canal water management area, which runs adjacent to Mountain House Road and the Tracy substation; and enter into the California Aqueduct water management areas. (Ex. 1, p. 5.5-8.).

residents and motorist using Byron Bethany Road. (Ex. 6 V, pp. 2-4; Intervenor Sarvey Closing Brief at pp. 23-24.)[152]

Mr. Schneider was a co-author of Measure D. He testified that the EAEC is located far outside the UGB, which provides the exclusive zone wherein urban development may be approved. In addition, Mr. Schneider testified that the Large Parcel Agriculture designation for the EAEC site forecloses other industrial uses such as the proposed EAEC power facility. (Ex. 6 U, pp. 2-3; 10/21 RT 87:22-101:13.)

According to Mr. Schneider, the EAEC does fit within ECAP's exception for infrastructure because of limiting language found within Policy 13 that arguably limits permissible infrastructure only to that needed for permissible development consistent with the initiative. Under his reasoning, EAEC as an 1100-MW facility could potentially provide power to over 750,000 people, which is far in excess of East County's current population and projected growth. Association of Bay Area Governments figures show that the region's current population is 170,000; projected year 2025 population is 250,000. Thus, according to Mr. Schneider, the relevant determination is whether the EAEC is needed to serve the 80,000 (250,000-70,000) incremental growth projected for East County. (10/21 RT 101:21-105:12; 114:7-115:2; 6 U, pp. 5/6.)

EAEC Policy 13 provides that:

> The County shall not provide nor authorize public facilities or other infrastructure in excess of that needed for permissible development consistent with the Initiative. This policy shall not bar 1) new, expanded or replacement infrastructure necessary to create adequate service for the East County, 2) maintenance, repair or improvement of public facilities which do not increase capacity, and 3) infrastructure such as pipelines, canals, and power transmission

---

[152] Applicant had interposed an objection concerning the Committee's consideration of Mr. Parfrey's Land Use testimony. (Ex. 6 V.)The Committee's review of the evidence confirms that it providently submitted and therefore the Committee has considered the testimony and overrules Applicant's objection.

> lines which have no excessive growth-inducing effect on the East County area and have permit conditions to ensure that no service can be provided beyond that consistent with development allowed by the Initiative. (Ex. 1 K, p. 10.)

In addition, Mr. Schneider testified with respect to observed trends in CEC siting cases and in his summary that the Commission, as a policy matter, should:

- limit developers preference for new greenfield sites over cleanup and reuse of old existing sites;
- over-reliance on natural gas-fired facilities as opposed to a system of diversification that would enhance system reliability, security and costs; and
- deny the EAEC license because the facility does not comport with Alameda County's ECAP either under the infrastructure exception or as a public facility under the Large Parcel Agricultural designation. (10/21 RT 106:14-109:5; Ex. 6 U, pp. 9-10; *see also* RT 120:8-.17.)

On cross-examination, when questioned about his Policy 13 interpretation, Mr. Schneider conceded that Measure D provides no guidance whatsoever regarding how to size a power plant to meet his narrow reading of Measure D:

> [Q] And the measure itself doesn't provide any guidance at all with respect to how to size that level of service, does it?
>
> [A] No, it does not.
>
> [Q] For example, it doesn't tell us whether the plant should be sized to meet baseload or peak needs, does it?
>
> [A] Certainly the measure, the East County Area Plan anywhere does not suggest power plant sizing, whether to meet baseload or peak.
>
> [Q] Now, do you understand that power plants don't operate continuously and some period of the year must be shut down for maintenance?
>
> [A] Certainly.

[Q] All right. And how would measure D accommodate that fact if the facility is sized precisely to meet the amount of incremental growth within its service area?

[A] Well, one could certainly argue that a capacity factor could be factored in to allow for down time.

[Q] Well, a capacity factor won't do any good if the plant's not operating.

[A] Well, would it rely -- I'm not sure any longer. It's been awhile studying these terms. One can make, I'm sure there's an average reliability factor, capacity factor, whatever the technical term is, that factors in the amount of out-of-service time that power plants are, compared to their rated capacity.

[Q] Now, on page 6 [of his prefiled testimony] you state all existing residents currently are served with electrical power, is that correct?

[A] Yes. And I believe that's true.

[Q] All right, and from where do these residents receive their electricity?

[A] I believe they receive it primarily from Pacific Gas and Electric Company.

[Q] Do they receive the electricity from generation within the East County?

[A] Not to my knowledge.

[Q] Do they receive the electricity from generation within Alameda County?

[A] I'm not sure.

[Q] You're not sure where the power comes from?

[A] I'm not sure if there are any power plants within Alameda County that are serving the East County residents.

[Q] Are you aware of any power plants within Alameda County?

[A] I personally am not, but I have not looked to see where power plants are sited around the state, or even in the county, so I just am

unaware of the answer. (10/21 RT 115:2-117:22; *see also* 118:18-120:7.)

b) Applicant

Applicant's expert testified consistent with Alameda County that the EAEC project falls within EACP's infrastructure exception. (10/21 RT 69:9-70:14.) Moreover, Applicant asserts that Mr. Schneider's testimony presents a narrow interpretation of Policy 14A (sic) because:

- his testimony does not address the overall policies of the ECAP, which is only part of Alameda County's General Plan (Ex. 1D, p. 4);
- while Policy 14A (sic) states that the County may not authorize public facilities or other infrastructure in excess of that needed for permissible development, the Policy expressly states that it does not bar "new infrastructure necessary to create adequate service to the East County;"
- Policy 14A's (sic) prohibitive language is directed toward *Alameda* County; however, the CEC has the legal authority to license the EAEC, not the County;
- Policy 14A (sic), by its express terms, is not a limitation on the CEC's authority to license the EAEC;
- ECAP Policy 262 expressly requires that "The County shall facilitate the provision of adequate **gas and electric service and facilities** to serve existing and future needs while minimizing noise, electromagnetic, and visual impacts on existing and future residents." (Ex. 1K, p. 76, emphasis in original);
- Alameda County has stated that "the proposed project, and a number of others like it, are necessary to provide adequate service to the East County, the remainder of Alameda County, and other parts of California, especially in view of the potential for additional periods of power shortages and 'rolling blackouts' that may result in the event that additional sources are not built;
- Alameda County believes that additional electrical energy available on the grid is beneficial to all users whether or not the specific energy from the source is sold or used locally" (Ex. 1D, p. 4; Applicant Opening Brief on Phase 2 Topics, pp. 21-22.)

Applicant concurs with Staff's proposed conditions of certification, **LANDS 1-7**. (10/15 RT 149:15-19.)

c) Staff

Countering Intervenor Sarvey witness's testimony that Staff's Land Use Analysis ignores impacts to the Mountain House community, Staff contends that CEQA's baseline for analysis is the existing environment at the time the project is submitted. Because there are no current Mountain House community residents, they are not considered in the baseline review of potential impacts. (Staff Closing Brief at p. 40.)

> Insofar as its deference to Alameda County's ECAP interpretation, Staff relied on the authority of Mr. Martinelli who testified that the ECAP does not preclude consideration of a power plant outside the UGB. Under Alameda County's view, ECAP's Policy 12 and 13 infrastructure provisions[153] are sufficient allowance for EAEC's construction.

Alameda County's determination that the EAEC falls within the definition of public utility and infrastructure that is allowable within the agricultural district where it is proposed was sufficient reason for Staff to give that determination deference. On cross-examination, Staff's expert was unable to offer an opinion as to whether the EAEC would provide more infrastructure than required under ECAP. Staff's testimony was that the EAEC project is a proposed industrial use outside of the ECAP's UGB. (10/15 RT 151:1-19; 152:5-17; 155:25-156:4.)

In addition, Staff concluded that:

- as proposed, the EAEC would convert 40 acres of prime farmland to non-agricultural use creating a potentially significant impact under CEQA;
- Applicant and the County of Alameda have executed a farmlands mitigation agreement (FMA) regarding the conversion of the loss of the 40 acres of prime farmland;

---

[153] Under Policy 13, 'Infrastructure' shall include public facilities, community facilities, and all structures **and development necessary to the provision of public services and utilities.** (Ex. 4 K, p. 10; emp. provided.)

- Staff has reviewed the FMA and found that it reduces the conversion's impact to a level of insignificance under CEQA with implementation of Staff's recommended condition of certification **Land-7**;
- the proposed EAEC project would not disrupt or divide the physical arrangement of any established community; nor would it preclude or unduly restrict any existing or planned land uses;
- EAEC's potential for visual impacts does not affect Staff's conclusions regarding land use impacts; and
- EAEC's is consistent with both the San Joaquin County General Plan as amended by the Mountain House Specific Plan. (10/15 RT 32:9-34:2, 146:25-149:12; 157:8-158:15; 158:21-159:13; 160:10-161:11; 162:12-18; 10/21 RT 67:1-69:5; Staff Closing Brief at p. 40 citing Cal. Code Regs., tit. 20, §1714.5 (b); Ex. 4 B 1.)

We concur.

d) Alameda County

Mr. Adolph Martinelli, Alameda County's Community Development Director appeared at the Evidentiary Hearing and testified regarding previously submitted documents explaining his jurisdiction's view of EAEC's compatibility with local LORS. He confirmed that the EAEC is:

- proposed to be located in the Mountain House area, which is approximately 10 square miles and is "the San Joaquin Valley side of Alameda County;"
- within the ECAP's definition of infrastructure;
- consistent with the Alameda County policies that are in the ECAP provided that Staff's recommended conditions are adopted. (Ex. 1 D; 10/21 RT 29:8-63:6.)

<u>Cumulative Impacts</u>

Land Use Table 1 below displays the cumulative projects within a 6-mile radius of the project site.

Land Use Table 1
Cumulative Development Projects

Development	Size	Location	Jurisdiction	Status
Old River Specific Plan	1,000 acres	North of I-205 and southeast of the EAEC site	San Joaquin County	Community meetings have been held regarding what would be a commercial/industrial development. The plan is under consideration as an amendment to the San Joaquin County General Plan.
Auto Auction Facility	200 acres	Patterson Pass Road Business Park	San Joaquin County	Under review by San Joaquin County.
Mountain House Community Service District – "New Town" Development	5,000 acres	Approx. 1 mile east of the EAEC site, bounded to the west by the Alameda County Line, to the east by Mountain House Parkway and between I-205 to the south and the Old River to the north.	San Joaquin County	Phasing for the Specific Plan I has begun with construction of the Mountain House Community Service District's water treatment plant, site grading, and laying of infrastructure on the site property. The project involves development of a new community with residential, commercial, and industrial development
Catellus Project	Unknown	Approx. 5 miles southeast of the EAEC site, between I-205 and Grant Line Road, west of Lammers Road	City of Tracy	Application for annexation to the City of Tracy to be filed.
Bright Development	160 acres	Approx. 6 miles to the southeast, bounded by Lammers Road to the east, I-205 to the north, and 11th Street to the south.	City of Tracy	Application for annexation to the City of Tracy filed.
Tracy Gateway	538 acres	Approx. 4.5 miles to the southeast, along I-205	City of Tracy	EIR approved 10/2002.
North Livermore Plan	13,500 acres	Approx. 7.5 miles to the southwest, north of Livermore	City of Livermore	EIR was finalized and adopted by the City of Livermore in 2000. The plan has been delayed due to passage of Alameda County Measure D.
Califia community	6,800 acres	Approx. 8 miles east of the EAEC, near Lathrop in western San Joaquin County..	City of Lathrop	Lathrop has annexed the property; environmental permitting process is in progress. Groundbreaking is expected in 2004.
Tracy Peaker Project	9 acres	Approx. 8 miles southeast of the EAEC site, in San Joaquin County, south of Schulte Road and west of Lammers Road	San Joaquin County	Approved by CEC; construction pending.
FPL Tesla Power Project	25 acres	Aprox. 5.5 miles south of the EAEC site, in Alameda County, just north of the Tesla Substation on Midway Road	Alameda County	Under the 12-month CEC review process.
Source: TPP, 2001; San Joaquin County, 2000; San Joaquin County, 2001; EAEC, 2001; FPL Tesla, 2001; HDR, 2001; Lombardo, 2001; Stentz, 2002.				

Source: (Ex. 1, p. 5.5-16; 10/15 RT 146:10-24.)

As demonstrated above, significant amounts of development are occurring in San Joaquin County, including large areas to the west in the process of applying for annexation to the City of Tracy. These developments can be characterized as primarily mixed-use with residential, commercial, and light industrial sectors. The size of the proposed EAEC remains small relative to the other proposed

projects in the area, but combined with the other projects contributes to a regional loss of agricultural land and open space. But EAEC, in combination with other proposed projects in the tri-valley sub region are expected to contribute to a regional loss of open space and agricultural land. (**LAND USE Table 1**; Exs. 1, p. 5.5-17; 1K, Fig. 2.)

Therefore, to prevent a significant cumulative impact on agricultural resources and open space, mitigation is required, such as:

- open space and agricultural land preservation;
- land trusts; and
- similar preservation measures.

Staff believes that the EAEC:

- Farmlands Mitigation Agreement between Applicant and the County of Alameda, along with **Condition of Certification LAND-7**, will mitigate the impacts of this project to a less than significant level;

- Will not make a significant contribution to regional impacts related to new development and growth, such as population immigration, the resultant increased demand for public services, and expansion of public infrastructure such as water pipelines to serve residential development. (Ex. 1, p. 5.5-17; (10/21 RT 146:25-117:3.).)

We concur.

COMMISSION DISCUSSION

Based upon our review of the record, the Committee is persuaded that we must give appropriate deference to Alameda County's interpretation of the ECAP. Intervenor Sarvey quite appropriately notes that the Energy Commission as the lead agency will give deference to local governments interpretation of their Land Use LORS and policies except when such an interpretation would lead to a factual error in our Decision. We can discern no such error here. (Intervenor Sarvey Closing Brief at p. 21.)

Deference to local government's interpretation of Land Use LORS was discussed in a recent CEC siting matter.[154] There we held as follows:

> In terms of LORS, Applicant argues that we should defer to the City of San Jose's guidance. San Jose communicated to Staff that its standards related to Visual Resources should be interpreted so that only a substantial or significant impact to scenic qualities results in noncompliance. (Applicant's Reply to Opposition to Petition to return to the Four-Month Process, pp. 12-14.)
>
> Moreover, Applicant points to case law, which states a general principle that consistency with planning documents is obtained with substantial compliance with planning directives. (Applicant's Reply to Opposition to Petition to return to the Four-Month Process, pp. 12-14.) Finally, Applicant argues that we are bound by the absence of a significant impact determination in *Metcalf*. (Applicant's Reply to Opposition to Petition to return to the Four-Month Process, pp. 14-15.) We accept Applicant's position that we should defer to San Jose for an interpretation of their LORS in the present situation where the City has determined that substantial compliance with the General Plan requirement furthers the City's interest. [See title 20 California Code Regulations, §1714.5 (b)] We are persuaded that the courts of record in California have adopted this principle as law and we believe that we are bound by the court's interpretation. (Los Esteros Critical Energy Facility (LECEF), CEC Docket No. 01-AFC-12, pp. 345-46.)

Likewise, here, we feel bound by the County of Alameda's finding that the EAEC will comply with its local land use measure under the exception for infrastructure. Obviously, with this determination we do not reach the merits of the question. Nevertheless, as does Staff, we believes that ECAP's infrastructure provision is susceptible to a number of reasonable interpretations. We also concur with Staff's finding that the EAEC is an industrial use requiring conversion of agricultural land. (Ex. 1, p. 5.5-10-12.)

---

[154] LECEF's Presiding Member was Chairman Keese, our Presiding Member here.

Nevertheless, Alameda County's EAEC interpretation as needed infrastructure to meet electricity needs in the County is indeed plausible. Accordingly, the Alameda County's overall conclusion that the project complies with the ECAP is also plausible. We find as much.

Moreover, we have reviewed each of Intervenor Sarvey's points of error, which he has set forth in his papers. We decline to accept them as meritorious. Instead, we accept Applicant's point-by-point rebuttal as the correct interpretation of the various provisions.

Accordingly, our review of the record has persuaded us that construction and operation of the EAEC will not create conflicts with existing or planned land uses in the tri-county project vicinity.

FINDINGS AND CONCLUSIONS

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

1. The East County Area Plan, as modified by "Measure D," (ECAP) is the planning and relevant land use LORS document applicable to the EAEC site.

2. The EAEC is an industrial use proposed for construction outside of the urban growth boundary that ECAP sets.

3. EAEC's Large Parcel Agriculture designation expresses two allowable exceptions: infrastructure and utility corridors.

4. Alameda County has determined that the EAEC and its related facilities are permissible uses under ECAP's Large Parcel Agriculture designation.

5. Alameda County's determination is plausible, and thus it is accorded deference under title 20, California Code Regulations, section 1714.5 (b).

6. The EAEC project would not disrupt or divide the physical arrangement of any established community; nor would it preclude or unduly restrict any existing or planned land uses in the tri-county region.

7. The EAEC project would not make a significant contribution to tri-county impacts related to new development and growth, such as population immigration, the resultant increased demand for public services, and expansion of public infrastructure such as water pipelines to serve residential development.

8. The EAEC project would convert 40 acres of prime farmland to non-agricultural use creating a potentially significant impact under CEQA.

9. The EAEC project's construction would create a significant cumulative impact on agricultural resources and open space that would be reduced to a level of insignificance with the application of appropriate mitigation.

10. The EAEC Farmlands Mitigation Agreement between Applicant and the County of Alameda, along with **Condition of Certification LAND-7**, will mitigate the proposed EAEC project's impacts to a level of insignificance.

We therefore conclude that the EAEC will not create any significant direct or indirect adverse land use impacts.

CONDITIONS OF CERTIFICATION

LAND-1 The project owner shall comply with the minimum design and performance standards for the "A" District set forth in the Alameda County Zoning Ordinance.

Verification: At least 30 days prior to the start of construction, the project owner shall submit written documentation, including evidence of review by the Alameda County Community Development Agency that the project meets the above referenced requirements and has been reviewed by the County.

LAND-2 The project owner shall comply with the parking standards established by the Alameda County Zoning Ordinance (Title 17, Chapter 52, Sections 780-950).

Verification: At least 30 days prior to start of construction, the project owner shall submit to the CPM, written documentation, including evidence of review by Alameda County that the project conforms to all applicable parking standards.

LAND-3 The project owner shall ensure that any signs erected (either permanent or for construction only) comply with the outdoor advertising

regulations established by the Alameda County Zoning Ordinance (Title 17, Chapter 52, Section 510).

Verification: At least 30 days prior to start of construction, the project owner shall submit to the CPM, written documentation, including evidence of review by Alameda County, that all erected signs will conform to the zoning ordinance.

LAND-4 The project owner shall provide the Director of the Alameda County Community Development Agency for review and comment and the CPM for review and approval, descriptions of the final lay down/staging areas identified for construction of the project. The description shall include:

(a) Assessor's Parcel numbers;

(b) Addresses;

(c) Land use designations;

(d) Zoning;

(e) Site plan showing dimensions;

(f) Owner's name and address (if leased); and,

(g) Duration of lease (if leased); and, if a discretionary permit was required; (2) copies of all discretionary and/or administrative permits necessary for site use as lay down/staging areas.

Verification: The project owner shall provide the specified documents at least 30 days prior to the start of any ground disturbance activities.

LAND-5 The project owner shall provide appropriate evidence of compliance with Federal Aviation Administration (FAA) regulations regarding the marking and/or lighting of the project's new exhaust stacks. The project owner shall provide to the CPM copies of all completed documents demonstrating FAA compliance in accordance with the schedule set forth in FAA Form 7640-2, Notice of Actual Construction or Alteration or other appropriate documentation as required by FAA. This requirement shall also be applied if at any time the project is abandoned.

Verification: At least 30 days prior to start of commercial operation, the project owner shall submit proof that the project's stacks have been marked and/or lighted in accordance with FAA regulations and requirements.

LAND-6 The project owner shall provide to the CPM for approval, a site plan with dimensions showing the locations of the proposed buildings and

structures in compliance with the minimum yard area requirements (setbacks) from the property line as stipulated in the Alameda County Zoning Ordinance.

Verification: Thirty (30) days prior to the start of construction, the project owner shall submit a site plan showing that the project conforms to all applicable yard area requirements as set forth in the City/County Zoning Ordinance.

LAND-7 The project owner shall mitigate at a one to one ratio for the conversion of prime farmland as classified by the California Department of Conservation, to a non-agricultural use, for the construction of the power generation facility.

Verification: The project owner will provide payment to the Alameda County Agricultural Land Trust of the $500,000 first installment of a mitigation fee within 30 days following the construction start, and the $500,000 second and final installment within 30 days of the commencement of commercial operation, as set forth in the East Altamont Energy Center Farmlands Mitigation Agreement.

The project owner shall provide in its monthly compliance reports a discussion of any land and/or easements purchased in the preceding month by the trust with the mitigation fee money provided, and the provisions to guarantee that the land managed by the trust will be farmed in perpetuity. This discussion must include the schedule for purchasing forty (40) acres of prime farmland and/or easements within 5 years of start of construction as compensation for the forty acres of prime farmland to be converted by the EAEC.

The project owner shall provide confirmation to the CPM that the first and final mitigation payments have been made to the Alameda County Agricultural Land Trust.

B. TRAFFIC AND TRANSPORTATION

In this section, we examine the extent to which the EAEC will affect the regional and local transportation systems near the project. During these licensing proceedings, we identified the roads and routings to be used during construction and operation phases of the project; analyzed potential traffic problems associated with those routings; examined whether adequate parking capacity was available and whether the project would lead to inadequate emergency access; and analyzed the frequency of and routes associated with the delivery of hazardous materials.

SUMMARY OF THE EVIDENCE

Applicant testified that:

- significant effects on the local transportation system are not expected from power plant construction or operational activities;
- and that with implementation of the Conditions of Certification recommended by Staff, any potential traffic and transportation impacts will be reduced to a less than significant level (Ex. 3L, pp. 2.10-4 and 2.10-5.).

Staff's witness conducted an independent analysis of project impacts on traffic and transportation as described in the FSA. Four scenarios were analyzed:

- existing traffic,
- existing plus peak construction traffic,
- existing plus operation traffic, and
- cumulative conditions.

Staff's witness testified that according to the Alameda County East County Area Plan (ECAP), the minimum acceptable level of service (LOS) is defined as LOS D during peak commute times. However, a LOS E may be acceptable when

Deficiency Plans for affected roadways are prepared in conjunction with the County of Alameda Congestion Management Agency. The County requires all development projects to analyze their contribution to increased traffic and to implement improvements and/or mitigation necessary to address the increase. (Ex. 1, p. 5.9-6.)

The addition of the EAEC project traffic will have little effect on the existing LOS at local intersections in the project vicinity. Each of these intersections, with the exception of Byron-Bethany Road at Mountain House Road, is expected to operate at an acceptable level of service with the addition of project construction traffic (i.e., in the ECAP traffic standards, LOS D or better is an acceptable level of service). These local intersections will experience no significant and/or adverse impacts from this project. Staff has concluded that these intersections have sufficient capacity to absorb all project-generated traffic, particularly since it will be directed to avoid the a.m. and p.m. peak commute hours. (Ex. 1, p. 5.9-6.)

The unsignalized intersections of Byron-Bethany Road with Mountain House Road and Kelso Road currently operate at LOS E conditions. Based upon the information in the AFC no more than one-half of the peak construction trips (225) would be approaching the site from any one direction (i.e., Byron Bethany Road, Mountain House Road, or Kelso Road). The information presented in the AFC also assumed that no more than 200 of these vehicles would approach from any one direction during the peak hour, consistent with the current traffic patterns. Staff agrees that these are reasonable planning assumptions used by traffic professionals. If 200 vehicles are added to Byron-Bethany Road in the peak hour, the Volume Capacity Ratio (VC ratio) becomes 0.86 and LOS E is maintained. (Exs. 1, p. 5.9-6; 2, § 8.10.2.3, p. 8.10-11 & 12.)

The County of Alameda has plans to improve Byron-Bethany Road between Marsh Creek Road and Tracy, but the extent and timing of these improvements

is currently not available. Although the addition of construction traffic along this stretch of roadway would not significantly reduce the LOS and impacts would only occur on a temporary basis (i.e., during the 22-24 month construction phase of the project), it would cause a short-term increase in the congestion that already exists. Therefore, impact mitigation in the form of a construction traffic control plan and implementation program that limits construction truck and project-related commute traffic to off-peak periods, should be developed in coordination with the County of Alameda, County of San Joaquin, and Caltrans to offset this project impact. (Ex. 1, p. 5.9-7.)

Staff's witness also testified construction of linear facilities (i.e., gas/water pipelines, transmission lines) would include temporary traffic lane closures, thereby affecting the capacity of the following roadways:

- Byron-Bethany Road (includes linear road crossings and construction along the roadway segment).
- Mountain House Road (includes linear road crossings and construction along the roadway segment).
- Kelso Road (includes linear road crossings and construction along the roadway segment).

The traffic control plan and implementation program related to the construction of linear facilities will include a discussion on the use of flaggers, advanced warning flashers, and signage for temporary lane closures. In addition, this traffic control plan will include timing of linear facilities construction to take place outside of peak traffic periods, in order to avoid traffic flow disruptions. (Ex. 1, p. 5.9-7.)

Staff observations of the project area indicate that a potential traffic operation problem or hazard could occur near the jobsite. Given that Byron-Bethany Road currently operates at LOS E, truck drivers making construction and operation phase deliveries during peak traffic periods may be delayed turning left from Byron-Bethany Road onto Mountain House Road. Staff agrees with the

applicant's intent to instead use the Byron-Bethany Road intersection with Kelso Road, which has a left turn lane. Staff believes that the use of this intersection will be safer and more efficient than using the Mountain House/Byron-Bethany Road intersection, which has no left turn lane. Directing project traffic to off-peak periods, combined with the availability of the left turn lane maximizes free-flow traffic conditions on Byron-Bethany Road. It may also diminish the current phenomenon of vehicles passing along the shoulder of the roadway, causing potential hazards to pedestrians. For occasional project traffic occurring during peak periods, the availability of the left turn lane should reduce traffic delays. (Ex. 1, p. 5.9-7.)

Staff testified that the EAEC project will not hinder emergency vehicle access (EVA) because intersections affected by construction will be maintained at an acceptable service level for Alameda County's East County Area Plan. (Ex. 1, p. 5.9-9.)

All transportation and handling of hazardous materials can be mitigated to insignificance by compliance with federal and state standards established to regulate the transportation of hazardous substances. (Ex. 1, p. 5.9-10.)

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, the Committee finds as follows:

1. The addition of traffic associated with construction or operation of the East Altamont Energy Center project will not have a significant effect on existing levels of service at local intersections in the project vicinity.
2. Development and implementation of construction traffic control and transportation demand implementation program will offset any temporary, short-term increases in congestion resulting from construction of the project and linear facilities.
3. The transportation of hazardous materials can be mitigated to insignificance by compliance with federal and state standards.

We therefore conclude that with implementation of the following Conditions of Certification, the project will not cause any significant adverse direct, indirect, or cumulative impacts to traffic and transportation, and will comply with all applicable laws, ordinances, regulations, and standards.

CONDITIONS OF CERTIFICATION

TRANS-1 The project owner shall comply with Caltrans and other relevant jurisdictions' limitations on vehicle sizes and weights. In addition, the project owner or its contractor shall obtain all necessary transportation permits from Caltrans and all relevant jurisdictions for roadway use.

Verification: In the Monthly Compliance Reports, the project owner shall submit verification of any permits received during that reporting period. In addition, the project owner shall retain copies of these permits and supporting documentation in its compliance file for at least six months after the start of commercial operation.

TRANS-2 The project owner or their contractor shall comply with Caltrans, the County of San Joaquin, and the County of Alameda limitations for encroachment into public rights-of-way as applicable, and shall obtain necessary encroachment permits from Caltrans and all relevant jurisdictions.

Verification: In the Monthly Compliance Reports, the project owner shall submit copies of any encroachment permits received during that reporting period. In addition, the project owner shall retain copies of these permits and supporting documentation in its compliance file for at least six months after the start of commercial operation.

TRANS-3 The project owner shall ensure that permits and/or licenses are secured from the California Highway Patrol and Caltrans for the transport of hazardous materials.

Verification: The project owner shall include in its Monthly Compliance Reports, copies of all permits/licenses secured by the project owner and/or subcontractors concerning the transport of hazardous substances.

TRANS-4 During construction of the power plant and all related facilities, the project owner shall enforce a policy that all project related parking shall occur in designated parking areas only.

Verification: At least thirty (30) days prior to site mobilization, the project owner shall submit a parking and staging plan for all phases of project construction to the County of Alameda for review and comment, and to the CPM for review and approval.

TRANS-5 The project owner shall develop a construction traffic control and transportation demand implementation program that limits construction-period truck and commute traffic to off-peak periods in coordination with the County of Alameda, County of San Joaquin and Caltrans. These studies are to confirm that construction trip generation rates identified in the AFC and used to determine less than significant impacts to County of Alameda and County of San Joaquin streets are not being exceeded. Specifically, this plan shall include the following restrictions on construction traffic:

a) Establish construction work hours outside of the peak traffic periods to ensure that construction workforce traffic occurs during off-peak hours, except in situations where schedule or construction activities require travel during peak hours, in which case workers will be directed to routes that will not deteriorate the peak hour level of service below the County of San Joaquin's LOS D standard and County of Alameda's LOS E standard;

b) Schedule heavy vehicle equipment and building material deliveries as well as the offsite movement of materials and equipment from laydown areas to occur during off-peak hours;

c) Construction worker and all truck deliveries shall not use Mountain House Road in the vicinity of the Mountain House School;

d) The construction traffic control and transportation demand implementation program shall also address the following issues for linear facilities:

1) Timing of pipeline construction (all pipeline construction affecting local roads shall take place outside the peak traffic periods to avoid traffic flow disruptions);

2) Signing, lighting, and traffic control device placement;

3) Temporary travel lane closures;

4) Maintaining access to adjacent residential and commercial properties; and

5) Emergency access.

Verification: At least thirty (30) days prior to site mobilization, the project owner shall provide to the County of Alameda, the County of San Joaquin and Caltrans for review and comment, and to the CPM for review and approval, a copy of their construction traffic control plan and transportation demand implementation program. Additionally, every 4 months during construction the project owner shall submit to the CPM turning movement studies for the entrance to the East Altamont Energy Center plant during the A.M. (7:30 to 8:30 a.m.) and P.M. (4:30 to 5:30 p.m.) peak hours.

TRANS-6 Following completion of project construction of the power plant and all related facilities, the project owner shall repair Mountain House Road, Kelso Road and the portions of Byron-Bethany Road that were affected by the installation of linear facilities, to their pre-construction condition.

1) The project owner shall photograph, videotape or digitally record images of portions of Byron-Bethany Road in the area of the underground linear facility installations, Mountain House Road and Kelso Road.

2) The project owner shall also notify the County of Alameda, the County of San Joaquin, and Caltrans about the schedule for project construction. The purpose of this notification is to postpone any planned roadway resurfacing and/or improvement projects until after the project construction has taken place and to coordinate construction related activities associated with other projects.

Verification: At least thirty (30) days prior to site mobilization, the project owner shall provide the CPM, the County of Alameda, the County of San Joaquin and Caltrans (as applicable) with a copy of these images.

No later than sixty (60) days after completion of project construction, the project owner shall meet with the CPM, the County of Alameda, the County of San Joaquin, and Caltrans (as needed) to review the photographs of the above described roadways. The agencies will determine and comment on the schedules and actions necessary to complete the repair of identified sections of public roadways to original or as near original condition as possible. Repairs to roadway sections shall be in accordance with the Alameda County Trench Cut Study recommendations.

Following completion of road improvements, if necessary, the project owner shall provide to the CPM letters from the Counties of Alameda and San Joaquin as applicable, stating their satisfaction with the road improvements.

TRANS-7 The project owner shall pay the County of Alameda to implement street light/night lighting improvements at the intersection of Mountain House Road/Byron-Bethany Road.

Verification: Thirty (30) days prior to site mobilization, the project owner shall submit to the CPM evidence that the County has been paid to implement the improvements.

TRANS-8 The project owner shall consult with the County of Alameda and submit to the CPM for approval a schedule for the installation of permanent fixed fog warning signs for motorists traveling along Byron -Bethany Road near the project site. Sign requirements shall be in accordance with Caltrans specifications.

Verification: Thirty (30) days prior to start of the construction, the project owner shall provide to the CPM a letter from the County of Alameda stating its satisfaction with the placement and design of the traffic signs warning motorists about the possibility of fog.

TRANS-9 The project owner shall construct structural roadway shoulder improvements as part of the installation of the driveway entrance into the project site on Mountain House Road.

Verification: Thirty (30) days prior to site mobilization, the project owner shall submit to the CPM a letter from the County of Alameda stating its approval of the final engineered construction Plans for the driveway structural roadway shoulder improvements are in accordance with County standards.

C. NOISE

The construction and operation of any power plant creates noise, or unwanted sound. The character and loudness of this sound and the proximity of the facility to sensitive receptors combine to determine whether a project's noise will cause significant adverse impacts to the environment. In the licensing process, the Energy Commission evaluates those impacts and determines whether noise produced by project-related activities will be consistent with applicable noise control laws and ordinances. In this portion of the Decision, we examine the likely noise impacts from the EAEC and the sufficiency of measures proposed to control them.

SUMMARY OF THE EVIDENCE

Applicant entered the following evidence:

- A letter from Mr. And Mrs. Costa (the owners of the property closest to the EAEC site referred to as noise receptor Site 2 on Noise Table 5 in the errata issued by Staff dated October 15, 2002) accepting Applicant's offer of a residential sound attenuation program.
- A letter from Alameda County regarding the County's interpretation of the Alameda County noise ordinance. Alameda County stated "the Director of Environmental Health and the Director of the Community Development Agency have found the source-specific noise levels predicted for the Calpine EAEC are in conformance with the requirements of the Alameda County Noise Ordinance (Alameda County Health and Safety Code, Title 6, Sections 6.60.010 through 6.60.120 inclusive)".
- A letter from Mr. And Mrs. Kuhn (owners of the property referred to as noise receptor Site 3 on Noise Table 5 in the errata issued by Staff

dated October 15, 2002) wherein Applicant and the Kuhn's have agreed that the Applicant will relocate the Kuhn residence.

- Applicant has obtained an option on the parcel of land containing the Franco residence (referred to as noise receptor Site 1 on Noise Table 5 in the errata issued by Staff dated October 15, 2002 and, upon exercise of this option, will remove the residential structure on this parcel from residential use. (Exs. 1 F; 2, § 8.7/4 C 1; 4 C 2, 4 C 3, 4 C 4, § 2 YY.)

Staff testified that with Staff's proposed Conditions of Certification including the modified Conditions, as modified, the project would be constructed and operated without significant adverse noise impacts.[155] These changes reflect the fact that once the project owner has performed the proposed mitigation to nearby residences there will be no impact on any sensitive receptors near the project. (10/15 RT 131 & 132; Exs. 1, § 5.6; 1 F; Condition **NOISE-6**.)

Applicant noted for the record that while Applicant does not necessarily agree with Staff's methodology, both Applicant and Staff came to the same conclusion with regard to applicable noise standards. Applicant and Staff agree that with the Conditions of Certification, the project will meet all noise LORS and will impose no significant impacts on the environment due to noise.

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, the Committee find as follows:

1. Construction and operation of the EAEC will not increase noise levels significantly above existing ambient levels in the surrounding community.

---

[155] These changes reflect the fact that once the project owner has performed the proposed mitigation to nearby residences there will be no impact on any sensitive receptors near the project. (*See* Condition **NOISE-6**.)

2. The nearest residential receptor to the project is located approximately 3,200 feet northeast of the project site.
3. Noise associated with construction activities at the project will be temporary in nature and mitigated to the extent feasible; therefore, they will not result in a significant impact to the surrounding community.
4. Implementation of the Conditions of Certification, which follow, will ensure that noise levels in the community will not significantly increase as a result of the project.
5. With implementation of the Conditions of Certification, the project will be constructed and operated in conformity with the applicable laws, ordinances, regulations, and standards.

We therefore conclude that the EAEC will not create any significant direct, indirect, or cumulative adverse noise impacts, and will comply with all applicable laws, ordinances, regulations, and standards.

CONDITIONS OF CERTIFICATION

NOISE-1 At least fifteen (15) days prior to the start of ground disturbance, the project owner shall notify all residents within one-half mile of the site and the linear facilities, by mail or other effective means, of the commencement of project construction. At the same time, the project owner shall establish a telephone number for use by the public to report any undesirable noise conditions associated with the construction and operation of the project. If the telephone is not staffed 24 hours per day, the project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This telephone number shall be posted at the project site during construction in a manner visible to passersby. This telephone number shall be maintained until the project has been operational for at least one year.

Verification: The project owner shall transmit to the CPM in the first Monthly Construction Report following the start of ground disturbance, a statement, signed by the project manager, stating that the above notification has been performed, and describing the method of that notification, verifying that the telephone number has been established and posted at the site, and giving that telephone number.

NOISE-2 Throughout the construction and operation of the project, the project owner shall document, investigate, evaluate, and attempt to resolve all project related noise complaints.

The project owner or authorized agent shall:

- Use the Noise Complaint Resolution Form (see Exhibit 1), or functionally equivalent procedure acceptable to the CPM, to document and respond to each noise complaint;
- Attempt to contact the person(s) making the noise complaint within 24 hours;
- Conduct an investigation to determine the source of noise related to the complaint;
- If the noise is project related, take all feasible measures to reduce the noise at its source; and
- Submit a report documenting the complaint and the actions taken. The report shall include: a complaint summary, including final results of noise reduction efforts; and, if obtainable, a signed statement by the complainant stating that the noise problem is resolved to the complainant's satisfaction.

Verification: Within five (5) days of receiving a noise complaint, the project owner shall file a copy of the Noise Complaint Resolution Form, or similar instrument approved by the CPM, with the Alameda County Planning Department, and with the CPM, documenting the resolution of the complaint. If mitigation is required to resolve a complaint, and the complaint is not resolved within a 3-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is finally implemented.

NOISE-3 The project owner shall submit to the CPM for review and approval a construction noise control program, consistent with Cal-OSHA regulations (Title 8, Group 15, Article 105, Section 5096). The noise control program shall be used to reduce employee exposure to high noise levels during construction and also to comply with applicable OSHA and Cal-OSHA standards.

Verification: At least thirty (30) days prior to the start of ground disturbance, the project owner shall submit to the CPM the above referenced program. The project owner shall make the program available to OSHA upon request.

NOISE-4 If a traditional, high-pressure intermittent 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 55 dBA measured at the nearest sensitive receptor. The project owner shall conduct high-pressure intermittent steam blows only during the hours of 7 a.m. to 7 p.m. on weekdays, unless the CPM agrees to longer hours based on a demonstration by the project owner that offsite noise impacts will not cause annoyance.

If a low-pressure continuous steam blow or air blow process is employed, the project owner shall submit a description of this process, with expected noise levels and projected hours of execution, to the CPM, who shall review the proposal with the objective of ensuring that the resulting noise levels will not exceed 45 dBA L_{eq}. If the low-pressure process is approved by the CPM, the project owner shall implement it in accordance with the requirements of the CPM.

Verification: At least fifteen (15) days prior to the first high-pressure steam blow, the project owner shall submit to the CPM drawings or other information describing the temporary steam blow silencer and the noise levels expected, and a description of the steam blow schedule.

At least fifteen (15) days prior to any low-pressure continuous steam blow, the project owner shall submit to the CPM drawings or other information describing the process, including the noise levels expected and the projected time schedule for execution of the process.

NOISE-5 Prior to the first steam or air blow(s), the project owner shall notify all residents within one mile of the site of the planned activity, and shall make the notification available to other area residents in an appropriate manner. The notification may be in the form of letters to the area residences, telephone calls, fliers or other effective means. The notification shall include a description of the purpose and nature of the steam or air blow(s), the proposed schedule, the expected sound levels, and the explanation that it is a one-time operation and not a part of normal plant operations.

Verification: The project owner shall notify residents and business owners at least fifteen (15) days prior to the first high-pressure steam blow(s). Within five (5) days of notifying these entities, the project owner shall send a letter to the CPM confirming that they have been notified of the planned steam blow activities, including a description of the method(s) of that notification.

NOISE-6 The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that the noise level produced by operation of the project will not exceed an hourly average exterior noise level of more than 43 dBA L_{50} measured at any residence.

No new pure tone components may be introduced. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints, as determined by the CPM. Steam relief valves shall be adequately muffled to preclude noise that draws legitimate complaints, as determined by the CPM.

Verification: Within thirty (30) days of the project first achieving a sustained output of 80 percent or greater of rated capacity, the project owner shall conduct a 25-hour community noise survey at Site 2. In addition, the applicant shall conduct short-term survey noise measurements at monitoring site 4. The short-term noise measurements shall be conducted during both daytime (7 a.m. to 10 p.m.) and nighttime (10 p.m. to 7 a.m.) periods. The noise surveys shall also include short-term measurement of one-third octave band sound pressure levels at each of the above locations to ensure that no new pure-tone noise components have been introduced.

If the results from the operational noise survey indicate that the noise level due to the plant operations exceeds 43 dBA for any given hour, mitigation measures shall be implemented to reduce noise to a level of compliance with this limit.

If the results from the operational noise survey indicate that pure tones are present, mitigation measures shall be implemented to eliminate the pure tones.

The measurement of power plant noise for the purposes of demonstrating compliance with this Condition of Certification may alternatively be made at a location, acceptable to the CPM, closer to the plant (e.g., 400 feet from the plant boundary) and this measured level then mathematically extrapolated to determine the plant noise contribution at the nearest residence. However, notwithstanding the use of this alternative method for determining the noise level, the character of the plant noise shall be evaluated at the nearest residence to determine the presence of pure tones or other dominant sources of plant noise.

Within fifteen (15) days after completing the post-construction survey, the project owner shall submit a summary report of the survey to the Alameda County Planning Department, and to the CPM. Included in the survey report will be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limits, and a schedule, subject to CPM approval, for implementing these measures. Within 15 days of completion of installation of these measures, the project owner shall submit to the CPM a summary report of a new noise survey, performed as described above and showing compliance with this condition.

NOISE-7 Following the project first achieving a sustained output of 80 percent or greater of rated capacity, the project owner shall conduct an occupational noise survey to identify the noise hazardous areas in the facility. The survey shall be conducted by a qualified

person in accordance with the provisions of Title 8, California Code of Regulations, sections 5095-5099 (Article 105) and Title 29, Code of Federal Regulations, section 1910.95. The survey results shall be used to determine the magnitude of employee noise exposure.

The project owner shall prepare a report of the survey results and, if necessary, identify proposed mitigation measures that will be employed to comply with the applicable California and federal regulations.

Verification: Within 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 and Cal-OSHA upon request.

NOISE-8 Heavy equipment operation, pile driving, and noisy construction or demolition work shall be restricted to the times of day delineated below:

Weekdays	7 a.m. to 7 p.m.
Weekends and Holidays	8 a.m. to 5 p.m.

Haul trucks and other engine-powered equipment shall be equipped with adequate mufflers. Haul trucks shall be operated in accordance with posted speed limits. Truck engine exhaust brake use shall be limited to emergencies.

Horizontal drill rigs may be operated on a continuous basis, provided that the rigs are fitted with adequate mufflers and engine enclosures.

Verification: The project owner shall transmit to the CPM in the first Monthly Construction Report a statement acknowledging that the above restrictions will be observed throughout the construction of the project.

NOISE-9 The Project owner shall remove from residential use, for the life of the project, that dwelling on Kelso Road, southeast of the project site, known as the Franco residence.

Verification: Prior to commercial operation, the project owner shall submit to the CPM copies of legal documents demonstrating that the project owner has control of the Franco residence, along with an affidavit, signed by the project owner, attesting that said residence is no longer used as a residence. The project owner shall submit a renewed affidavit to this effect annually in the Annual Compliance Report.

NOISE-10 The Project owner shall relocate or replace that dwelling at 4378 Mountain House Road, southwest of the project site, known as the Kuhn residence, to a site beyond the predicted location of the 40 dBA noise contour.

Prior to commercial operation, the project owner shall submit to the CPM copies of legal documents demonstrating that the subject residence has been relocated or replaced so that the dwelling is located outside of the 40 dBA noise contour shown by AFC Figure 8.5-2R.

D. SOCIOECONOMICS

This section of the Decision addresses the potential direct and cumulative impacts of the proposed East Altamont Energy Center project on local communities, community resources, and public services, such as schools, medical, and police services. It also considers the effect of project-related impacts on minority and low-income populations. Executive Order 12898, Federal Actions to address Environmental Justice 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 U.S. Environmental Protection Agency, all other federal agencies, and 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 impacts of their programs, policies, and activities on minority and/or low-income populations.

SUMMARY OF THE EVIDENCE

The Applicant's witness, Fatuma Yusuf sponsored Section 8.8 of the AFC. (Ex. 2.)

The Staff's independent analysis of Socioeconomics is set forth in the FSA and is sponsored by James Adams. (Ex. 1, pp. 5.8-1 to 5.8-12.)

The Applicant's witness testified that total construction personnel requirements during the approximately 24 months of construction will be approximately 5,671 person-months. The East Altamont Energy Center will provide approximately $49 million in construction payroll, at an average salary of $50 per hour (including benefits). Available skilled labor in the Tri-County region (Alameda County, Contra Costa County, and San Joaquin County) was evaluated by surveying

local labor unions and contacting the California Employment Development Department. Both sources show that the workforce in the Tri-County area will be adequate to fulfill the East Altamont Energy Center's labor requirements for construction. It is expected that most of the construction workforce will be drawn from the local area and will commute daily less than 30 miles each way to reach the job site. As a result, the construction of the East Altamont Energy Center will not create any significant adverse impacts to the local school system since there will likely be no new students entering the local school districts.

The construction of the proposed project will not cause significant demands on public services or facilities. All utilities are readily available from local utility providers and the construction of the proposed project will not cause significant demands on electricity and gas, sewer, water, or telephone service. The estimated value of materials and supplies that will be purchased locally during construction is between $5 and $10 million. The total local sales tax expected to be generated during construction is $400,000 to $800,000. (Ex. 3M, p. 2.8-2.)

The Applicant's witness further testified that when the facility becomes operational, the East Altamont Energy Center is expected to employ up to 40 full-time employees with no significant impact on population due to plant operations, since the entire permanent workforce is expected to commute from within the three-county (Alameda, Contra Costa, and San Joaquin) region. There will also be no anticipated significant impacts to local housing resources. There will be no significant impact to the local educational system from the operation of the East Altamont Energy Center.

The Project Owner will be required to pay a school impact fee of $0.33 per square foot of principal building to the Tracy Unified School District. Operation of the proposed project will not cause significant demands on public services or facilities. Required utilities are readily available from local providers. The East Altamont Energy Center's total value for property tax purposes has not been

established. However, a simple assessment using values of $400 to $500 million, based on the Applicant's estimate of project value, suggests the total property tax obligation could range from $5 million to $6.5 million annually. The East Altamont Energy Center will be in compliance with Guidances and the Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low Income Populations (1994), because local minority and low-income populations will not be exposed to disproportionately high and adverse impacts from the project. (Ex. 3M, p. 2.8-2.)

Staff testimony similarly concludes that the East Altamont Energy Center will not cause a significant adverse direct, indirect or cumulative impact on housing, employment, schools, public services or utilities. The East Altamont Energy Center will benefit the local and Tri-County area in terms of an increase in jobs and commercial activity during the construction and operation of the facility. Construction payroll and project expenditures would also have a positive effect on the local and Tri-County economy. The estimated benefits from the project include increases in the affected area's property and sales taxes, employment, and sales of services, manufactured goods, and equipment. The estimated annual operating budget will be $8 million. Overall, the project will have a positive socioeconomic impact on the East Altamont area. (Ex. 1, p. 5.8-10)

The project, as proposed, will be consistent with all applicable Socioeconomic LORS. In particular, the East Altamont Energy Center is consistent with Policies 50 and 262 of the East Alameda County Area Plan regarding the use of local labor, and facilitating the provision of adequate electric service facilities. Further, the project is consistent with Executive Order 12898 because it will not have any disproportionately high and adverse impacts on minority and low-income populations. Therefore, there are no environmental justice issues. The proposed conditions of certification ensure the compliance with LORS and that anticipated local benefits occur to the extent feasible. (Ex. 1, p. 5.8-10.)

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, we find as follows:

1. The East Altamont Energy Center will draw primarily upon the local labor force from the Tri-County area for construction and operation workers, and have a construction payroll of approximately $49 million.
2. The project will not cause an influx of a significant number of construction or operation workers into the local area.
3. The proposed project is not likely to have a significant adverse effect on traditional socioeconomic considerations including employment, housing, schools, medical, tax revenues, and fire and police protection.
4. The project will likely result in increased revenue from sales taxes due to construction activities.
5. The project owner will recruit employees and purchase materials within the Tri-County area to the greatest extent possible.
6. The project will not have any disproportionately high and adverse impacts on any minority and low-income populations.

We therefore conclude that Implementation of the Conditions of Certification will ensure that project-related construction and operation activities will not impose any significant adverse socioeconomic impacts. Implementation of the following Conditions of Certification will ensure that the project will conform with all applicable laws, ordinances, regulations, and standards relating to socioeconomic factors. In summary, the East Altamont Energy Center 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 Tri-County area unless:

a) to do so will violate federal and/or state statutes;

b) the materials and/or supplies are not available;

c) qualified employees for specific jobs or positions are not available; or

d) 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 construction, the project owner shall submit to the Energy Commission Compliance Project Manager (CPM) copies of contractor, subcontractor, and vendor solicitations and guidelines stating hiring and procurement requirements and procedures. In addition, the project owner shall notify the CPM by letter of the reasons for any planned procurement of materials or hiring outside the local regional area that will occur during the next two 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 Alameda County 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.

E. VISUAL RESOURCES AND PLUMES

Visual resources are the natural and cultural features of the environment that contribute to the visual character or quality of the environmental surroundings. CEQA requires that projects be examined to evaluate their visual impacts on the environment. The evidence of record contains this evaluation as well as an evaluation of the EAEC project's capacity to produce plumes visible to the area's residents and visitors. Because we view the issue of visual plumes to be part of our Visual Resources analysis, we combine the topics here for ease of reference.

In addition, we note that federal regulations do not apply to the proposed project's potential impacts on visual resources. Therefore, Staff noted that WAPA is likely to put greater emphasis on LORS compliance and other factors such as the strong presence of the Tracy Substation and the many transmission lines radiating from it. (Ex. 1, p. 1-2.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

Both Applicant and Staff analyzed the potential visual impacts of EAEC's plumes. Staff modeled the Applicant's proposed unabated cooling tower and HRSG designs, and potential plume abated designs. Staff concluded that EAEC's HRSG stacks and cooling tower water vapor plumes are predicted to occur at a frequency of 11.8 and 16.5 percent (respectively) of the clear weather seasonal daylight, no rain, no fog (SDNRNF) hours.[156] Applicant and Staff concluded that the visible water vapor plumes from the EAEC's cooling towers and heat

[156] Staff found that these occurrences exceed its 10-percent frequency threshold, thereby requiring an impact analysis, which concluded that these plumes would cause an adverse but less than significant visual impact to close in and viewers that are more distant. (Exs. 1, p. 5.11b-1; 4 I, p. 2.13-2.)

recovery steam generators (HRSGs) would result in no significant visual impacts. (10/22 RT 7:22-8:4; Exs. 1, pp. 5.11a-1/20 & 5.11b-1; 2 DDD.)

The most visible features of the proposed EAEC generation site would include:

- three 175-foot tall HRSG stacks;
- 110 feet to 125 feet tubular steel electrical transmission new angle and dead-end structures;[157]
- a 100-foot tall auxiliary boiler stack;
- a 90-foot tall brine concentrator;
- a 65-foot tall air inlet to the combustion turbine generators (CTGs);
- a 57-foot tall steam turbine generator;
- a 57-foot tall, 1,030-foot long cooling tower structure consisting of 19 cells;
- a 51 foot tall "A-frame" takeoff structure for the switchyard's electric transmission lines;
- an 8-foot non-reflective chain link fence, with an additional 2 feet of barbed or razor wire;
- ancillary structures;
- parking areas;
- a one million-gallon brine concentrator feed tank;
- a 300,000-gallon reverse osmosis feed storage tank;
- a 1.7-acre stormwater retention pond;
- a new on-site switchyard; and
- two new 0.5-mile long, double circuit 230 kV transmission lines. (Ex. 1, p. 5.12-7/8 & 17, Figure 1, which is replicated below.)

Components of the new switchyard, including transformers, take-off structures, and other electrical equipment, would have an industrial appearance similar to that of the components in the nearby Tracy Substation. (Ex. 1, p. 5.12-7/8.)

---

[157] These structures would be painted with a neutral gray finish and would be non-specular to reduce visibility and the insulators would be non-reflective and non-refractive. Modifications confined to within the existing developed facility areas would be made at the Tracy and Westley Substations. (Ex. 1, p. 5.12-7.)

At present, the EAEC project site:

- Is open and used for field and row crops and for occasional grazing;
- has no structures;
- except for seasonal crops, there is no vegetation; and
- has no features that would be considered to be a visual resource.

Applicant describes the site's level of visual quality as moderately low. (Exs. 4 I, p. 2.13-2; 4 J, p. 2.12-4.)

VISUAL RESOURCES Table 1

Dimensions of Key Project Components

Component	Height[1] (feet)	Length (feet)	Diameter / Width (feet)
HRSG Structure (to top of highest relief valve)	108		
HRSG Drums (to top of highest)	87		
HRSG Stacks	175		20
HRSG Casings	73	150	60
Gas Combustion Turbine Air Inlet Filters	65	60	40
Steam Turbine Generator Enclosure	57	115	32
Auxiliary Boiler Stack	100		4
Cooling Tower Structure	57	1,030	
Two Brine Concentrators	90		20
Two Brine Crystallizers	100 (approx.)		15 (approx.)
Raw Water Tanks	40		150
Demineralized Water Storage Tanks	40		52
Switchyard Conductor Take-off Structures	56		

[1]

Source: (Ex. 1, p. 5.12-17.)

The project site is an approximate 43.5-acre area of flat valley land located in the northeastern corner of Alameda County that falls within the San Joaquin Valley landscape region. The landscape in the project area has been highly altered to accommodate large scale, irrigated agriculture. In addition, the area around the project site has an unusually high concentration of major electric and water

infrastructure facilities.[158] The project area landscape can be characterized as one that is a mix of the agricultural and technological in which large infrastructure facilities are visually important parts of the overall landscape composition. Applicant describes the visual quality of the immediate project area as moderately low. (Exs. 2, pp. 5.11.b-5; 5.12-9; 4 I, p. 2.13-2; 4 J, p. 2.12-4.)

I. VISUAL PLUMES

A. Construction Impacts

Since plume formations are only associated with plant operation, there are no construction impacts associated with Visual Plumes. (Ex. 4 I, p. 2.13-2.)

B. Operational Impacts

1. Applicant and Staff

During the EAEC's project operational period, the appearance of the project site and its surroundings will be altered by the presence of the power plant and the intermittent presence of plumes associated with the project's stacks and cooling tower. Although the presence of the project plumes will create changes in the current appearance of the site and the project area, these changes will not produce a substantial degradation of the area's existing character as a landscape of agriculture and infrastructure and/or of its existing moderately low level of visual quality. (10/22 RT 65:9-24; Exs.1, p. 5.11b1; 4 I, p. 2.13.2.)

Staff and Applicant conducted visible plume modeling and visual impact analyses to determine the predicted frequency and dimensions of the cooling tower and

---

[158] See our section on Land Use, *supra*, for a description of the area's major electric and water infrastructure facilities. Our section on Project Description also has a discussion of the EAEC projects proposed facilities.

HRSG plumes and whether they create a visual impact. Once Staff determined that the presence of plumes would exceed its 10 percent threshold, Applicant has questioned Staff's modeling methodology. Applicant has continually expressed concerns regarding the modeling techniques and significance criteria used by Staff in estimating the frequency and dimensions of the visible water vapor plumes from the gas turbines/HRSGs and the cooling towers. Nevertheless, at the Evidentiary Hearings, they reached an accord regarding language of the conditions applicable to visible plumes. (10/22 RT 9:3-40:7; 64:1-65:24; 68:1-72:25; Ex. 4 I, p. 2.13-3; Jt. Ex. 5 C; *see* **Conditions Plume 1 & 2**.)[159]

Applicant and Staff's analysis evaluated potential plume impacts in light of the aesthetic standards, which the CEQA Guidelines established in its Appendix G. The Guidelines define a "significant effect" on the environment to mean a "substantial, or potentially substantial, adverse change in any of the physical conditions in the area affected by the project, including objects of historic or aesthetic significance". The Aesthetics section of Appendix G of the CEQA Guidelines lists four questions lead agencies need to address in determining whether a project's visual effects are significant.[160] (14 Cal. Code of Regs., § 15382.)

Applicant and Staff's summarized assessment of the significance of the EAEC's plumes in light of Appendix G of the Guidelines are presented below:

> ***Would the project have a substantial adverse effect on a scenic vista?***
>
> The Applicant concurs with Staff's conclusion that the EAEC's plumes will not result in significant visual impacts under this criterion. The closest viewpoints from which scenic vistas are

[159] In addition, Applicant throughout has concerns regarding the accuracy and meaningfulness of Staff's plume simulations. (Ex. 4 I, p. 2.13-3, note 1.)

[160] The analytical framework of our analysis is identical in the area of Visual Resources, *infra.* (Exs. 1, p. 5.2-3; 4 J, p. 2.12-8/9.)

> available are 8 and 20 miles away, and at these distances, views will be little affected by the project's plumes presence.
>
> ***Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?***
>
> The Applicant concurs with Staff's conclusion that the project's plumes will not result in significant visual impacts under this criterion. There are no state-designated scenic highways in the project vicinity, and no project elements are located "within" the right of way of such a highway.
>
> ***Would the project substantially degrade the existing visual character or quality of the site and its surroundings?***
>
> The Applicant concurs with Staff's conclusion that the plumes associated with the operation of the EAEC's project's gas turbines/HRSGs and cooling tower will not create significant impacts on visual resources.
>
> ***Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?***
>
> Applicant concurs with Staff's assessment that this criterion is not applicable to the proposed project's plumes. (Exs. 2, p. 5.11b-14; 4 I, p. 2.13-4.)

Finally, Staff and Applicant concur that the EAEC's visible plumes comply with applicable LORS. *(Ibid.)*

2. Intervenor Sarvey

Intervenor Sarvey's offered no testimony in the area of Visual Plumes. He did participate in the cross-examination of Applicant and Staff's experts. During cross-examination, Applicant's expert testified as follows:

> MR. SARVEY: Let me restate my question. Can you identify any other plumes in the project area?
>
> MR. RUBENSTEIN: Yes. That's discussed in the April 3rd filing. And in particular there's a table, table 10, on page 12 which shows the frequency of agricultural burning in San Joaquin County for the three-year period between 1997 and 1999. And it shows that ag

> burning which, in my professional experience, definitely generates plumes occurs on an average of 276 days per year. (10/22 RT 46:18-47:17.)

In addition, Intervenor Sarvey has explained his position in written briefs, which we have considered. His primary concern is that Staff's plume modeling indicates that under certain meteorological conditions and locations, EAEC's plume will obscure area views of Mount Diablo. Intervenor Sarvey's other primary concern appears to be that Applicant did not provide a visual simulation of the plume. (10/22 RT 40:22-51:13; 7:264:25-8:4; Intervenor Sarvey Opening Brief on Phase 3 Topics, pp. 22-32.)

C. Cumulative Impacts

Staff and Applicant concluded that the water vapor plume from the EAEC would not result in any cumulative visual impacts. The Mountain House community is the closest planned project to the EAEC. The initial phase of this project that has been approved is Neighborhood F, which is located at a point approximately 2.3 miles southeast of the project site, well outside of the EAEC's immediate viewshed. It is now anticipated that the community's overall build out will take place over a period ranging from 20 to 40 years, and at the moment, there are no specific approvals or commitments for development of the portions of the project's northernmost fringes which are closest to, but still more than a mile away from the project site. Staff concluded that:

> The proposed project's plumes, which would be visible only intermittently for a generally short period of the day during approximately half the year (the coolest months), would be added to a landscape that is already heavily impacted by energy infrastructure. This includes the large and very industrial appearing Tracy Substation located on Mountain House Road across from the proposed project site, numerous transmission towers and transmission lines, numerous wind turbines plainly visible on the hills behind the project site, and the proposed EAEC itself should it be approved. The addition of intermittent, short-

> duration, variable size cooling tower and HRSG water vapor plumes to a setting with the substantial existing energy infrastructure, including the new power plant, would result in an adverse, but not significant cumulative visual impact. (10/22 RT 65:25-66-8; Exs. 1, p. 5.11b-15; 4 I, p. 2.13-4/5.)

COMMISSION DISCUSSION

Evidence of record demonstrate an agreement between Staff and Applicant that intermittent water vapor plumes generated by the EAEC's stacks and cooling tower will create changes in the current appearance of the proposed site and project area. Both parties have agreed that these changes will not produce a substantial degradation of the area's existing character as a landscape of agriculture and infrastructure. Our evidence of record revealing agricultural burning, which also create visible plumes, supports this finding.

In addition, Applicant's expert under Intervenor's Sarvey cross-examination testified that it is not necessary to do a photo-simulation to evaluate the frequency with which a plume will form, or to evaluate the dimensions of the plume. In Applicant's analysis, a detailed description of the expected frequency and dimensions of visible water vapor plumes from both the cooling tower and the HRSG concluded that neither the plume frequency nor the dimensions would rise to a level of significance. Conversely, Staff performed photo-simulations, which are contained in the FSA, and reached the identical conclusion applying a methodology that Applicant took pains to dispute. Accordingly, based upon the entire record, we must reject Intervenor Sarvey's position that the plumes will create a significant unmitigated impact in the area. (10/22 RT 42:17-46:8; 86:22-92:13.)

Moreover, we commend Applicant and Staff for reaching a consensus on the language that is contained below in our **Conditions of Certification**. The resolution reached reflects a genuine concern that the CEC have the ability to ensure that the EAEC facility will operate as designed with respect to visual

plumes. We view Applicant's accommodation to the language as a measure of its confidence that the EAEC will operate without creating significant adverse impacts to the region. Because the region has evolved from the general agricultural dominance of the San Joaquin Valley to an industrialized center with a concomitant rapid development of residential communities, we view Applicant's gesture as critical to our overall findings. (10/22 RT 67:6-82-13; 85:5-10; 85:22-92:15; 262:6-264:24.)

FINDINGS AND CONCLUSION

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

1. The EAEC project is planned for an area that has a mix of open space agricultural land and technological extensive infrastructure.

2. The EAEC project site is open and used for field and row crops and for occasional grazing; it has no structures and except for seasonal crops, there is no vegetation; and the site has no features that would be considered to be a visual resource.

3. The proposed project's plumes would be visible only intermittently for a generally short period of the day during approximately half the year (the coolest months), and would be added to a landscape that is already heavily impacted by energy infrastructure.

4. EAEC's plumes will not result in significant visual impacts under the CEQA Guideline, Appendix G.

5. Water vapor plume from the EAEC will not result in any cumulative visual impacts.

6. Visible water vapor plumes from the EAEC's cooling towers and heat recovery steam generators (HRSGs) would result in no significant visual impacts.

7. EAEC's visible plumes comply with applicable LORS.

We conclude that construction and operation of the EAEC will not cause any significant direct, indirect, or cumulative adverse visual impacts from visual

plumes. Further, as conditioned, the project complies with all applicable LORS identified in the appropriate portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

PLUME-1 The project owner shall ensure that the EAEC cooling tower operates so that the plume frequency will not increase from the design as certified.

Verification: At least 30 days prior to ordering the cooling towers, the project owner shall provide to the CPM for review the final design specifications of the cooling tower related to plume formation. The project owner shall not order the cooling tower until notified by the CPM that the following two conditions have been satisfied:

The cooling tower design confirms that the exhaust air flow rate per heat rejection rate (1) will be not less than 29.9 kilograms per second per megawatt during unfired operation between 45 degrees F and 98 degrees F; and (2) will be not less than 18.0 kilograms per second per megawatt during fired operations between 45 degrees F and 98 degrees F.

The project owner shall provide a written certification in each Annual Compliance Report that the cooling towers have consistently been operated within the above-specified design parameters. If determined to be necessary to ensure operational compliance, based on legitimate complaints received or other physical evidence of potential non-compliant operation, the project owner shall monitor the cooling tower operating parameters in a manner and for a period as specified by the CPM. For each period that the cooling tower operation monitoring is required, the project owner shall provide to the CPM the cooling tower operating data within 30 days of the end of the monitoring period. The project owner shall include with this operating data an analysis of compliance and shall provide proposed remedial actions if compliance cannot be demonstrated.

PLUME-2 The project owner shall ensure that the EAEC HRSGs operate so that the plume frequency will not increase from the design as certified.

Verification: The project owner shall provide a written certification in each Annual Compliance Report that the HRSGs' visible plume frequency has been consistent with the design as certified. If determined to be necessary to ensure operational compliance, based on complaints received or other physical evidence of potential non-compliant operation, the project owner shall monitor the HRSGs operating parameters in a manner and for a period as specified by the CPM. For

each period that HRSG operation monitoring is required, the project owner shall provide to the CPM the HRSG operating data within 30 days of the end of the monitoring period. The project owner shall include with this operating data an analysis of compliance and shall provide proposed remedial actions if compliance cannot be demonstrated. Compliance shall be demonstrated if the HRSGs' exhaust temperatures are at least 155°F under all ambient conditions during duct firing operations and at least 176°F under all ambient conditions during non-duct full load firing operations.

II. VISUAL RESOURCES

SUMMARY AND DISCUSSION OF THE EVIDENCE

The landscape character of the project site and its immediate surroundings is consistent with the character of the larger landscape region of which they are a part. This larger region has a visual character that is dominated by an unusually high concentration of water and energy facilities of state and regional importance. We have already described those facilities in the immediate vicinity of the project in our Introduction, Water Resources, and Land Use sections. (Ex. 4 J, p. 2.12-4.)

For example, we have noted the Tracy Substation, where a number of large transmission lines converge. One of these lines is a MID/TID 230-kV line carried on tall steel poles that that runs along the southern edge of Kelso Road near the proposed project. Three parallel transmission lines comprising two 230-kV lines and one 500-kV line that are carried on large lattice steel towers cross the large agricultural parcel located north of the project site. A cluster of three towers, which range from 100 to 120-feet in height, is located in the area just to the north of the EAEC site's northwest corner. (Exs. 1, Figs. 1-4; 4 J, p. 2.12-3.)

In addition, large assemblages of wind turbines are located in the hill areas to the west and south of the EAEC project site. The wind turbines are a part of the state-designated Altamont Pass Wind Resource Area, where there are approximately 5,000 wind turbines. The wind turbines closest to the site are

located approximately 1.5 miles to the southwest. From the areas around the project site, fields of wind turbines are visible elements on the hills in the middle ground and background of views to the west and southwest. (Ex. 4 J, p. 2.12-4.)

In the area surrounding the project site, the numbers of sensitive viewers are relatively low. Because there are no occupied residences located within .05 mile of the proposed power plant's structures, the proposed power plant's location is not visible within the foreground zone of any residential view. The residences closest to the project site are individual farm dwellings, which, in most cases are surrounded by outbuildings and trees. The largest concentration of residences in the project vicinity consists of the cluster of approximately 30 small homes located approximately 0.75 mile northeast of the project site, in an area known as the Livermore Yacht Club. These homes are located along a small slough, are oriented to the water, and have no views toward the project site because of the levees that surround this area. (Ex. 4 J, p. 2.12-4/5.)

Mountain House School, a public elementary school serving approximately 60 students, is located along Mountain House Road, approximately 1 mile south of the project site. Because of vegetation and structures in the area to the immediate north of the school, the power plant site is not visible from the school property, although it is visible from Mountain House Road in front of the school, where it can be seen in the view's middle ground. (Ex. 4 J, p. 2.12-5.)

The recreational facility closest to the project site is the Rivers End Marina, located adjacent to the Livermore Yacht Club and .75 mile northeast of the project site. Because the marina's use centers on the slough, which is at the eastern edge of the facility, rather than toward the west where the project site is located, the project site and the set of major electrical facilities located in its immediate vicinity are not a sensitive part of the marina's overall visual setting. (Ex. 4 J, p. 2.12-5.)

The other recreational activity areas in the vicinity, including the portions of the shoreline of the Clifton Court Forebay and the California Aqueduct used for bank fishing and waterfowl hunting; a marina located adjacent to Clifton Court Forebay; and the Bethany Reservoir, where boating and fishing take place are all located two miles or more from the project site. Because of the distance of these areas from the project site (2 miles or more) and because of the presence of a considerable concentration of large energy and water infrastructure in the intervening landscape, the views from these areas toward the project site are not visually sensitive. (Ex. 4 J, p. 2.12-4.)

A. Construction Impacts

Construction of the proposed power plant and linear facilities would cause temporary adverse visual impacts due to the presence of equipment, materials, and workforce. Construction would involve the use of cranes, heavy construction equipment, temporary storage and office facilities, and temporary laydown/staging areas. Construction would include site clearing and grading, ditching of construction sites, construction of the actual facilities, and site and rights-of-way cleanup and restoration. EAEC's construction would occur over a 24-month period. Due to the relatively short-term nature of project construction, the adverse visual impacts that would occur during construction would not be significant. Proper implementation of our conditions will ensure that complete restoration of construction areas and rights-of-way and appropriate lighting are accomplished thereby ensuring that visual impacts associated with project construction remain less than significant. (Ex. 1, p. 5.12-16; *see* **Conditions VIS-1 & 4**.)

B. Operational Impacts

1. <u>Applicant</u>

EAEC facility components of the will be arranged on the site in a neat and orderly manner. A setback area of over 50 feet is planned for the area between the edge of Mountain House Road and the closest project structures to provide a spatial separation between the road and the project and to provide ample space for installation of landscaping. The tallest project structures are set back as far from Mountain House Road as is feasible, and the water tanks, administration building, and other smaller structures are located along the western edge of the site to create a transition in scale between the corridor along Mountain House Road and the power plant's taller features. A palette of neutral gray tones will be used for project structures to create a pleasing composition and to reduce the facility's contrast with its landscape and sky backdrops. Project lighting will be the minimal required for safety, security, and operations, and will be shielded and directed to reduce light scatter and glare. (Ex. 4 J, p. 2.12-6.)

The project as proposed includes extensive landscaping[161] that will create an attractive composition, to integrate the project visually into its overall landscape setting and, to screen project structures to the extent feasible in views from nearby areas.[162] (Ex. 4 J, p. 2.12-7.)

---

[161] Applicant's April 3, 2002, landscape plan provides the maximum level of screening that can be achieved from vegetation, which does not result in a significant adverse impact to wildlife. This landscape plan also increases the numbers of native plants used in the composition. To maximize screenings, the landscape plan provides for the trees to be planted as closely together as feasible to ensure both rapid creation of a dense screen and an optimal rate of tree growth. Along the project's eastern edge and much of its northern and southern sides, a staggered double row of lombardy poplars (Populus nigra "Italica") is proposed. The lombardy poplars are the fastest growing and tallest trees available that are appropriate for this area and that meet the criterion of resistance to roosting by raptors. Because lombardy poplars are deciduous, plantings of evergreen river she oaks (Casuarina cunning hamina) are provided in front of the poplar rows to provide winter screening. Besides providing winter screening, the informal groupings of river she oaks also provide a visual counterpoint to the regular rows of lighter colored lombardy poplars that form their backdrop. Along the western portions of the project's northern and southern perimeters, and along the project's western edge where the need for tall screening is not as critical, small and medium height evergreen trees have been specified in the plan. (Ex. 4 J, pp. 2.12-6/7.)

[162] The AFC landscape plan entailed planting of informal groupings of acacia and eucalyptus trees around the perimeter of the 55-acre site that the proposed EAEC project, with its evaporation ponds, was initially expected to occupy. After reviewing the AFC, representatives of CEC's Biology Staff, CDFG, and USFWS expressed concerns regarding potential conflicts between wildlife habitat issues and the proposed landscape concept. These agencies were

Applicant asserts that a review of the final landscape plan's simulated views of the EAEC project indicates that it provides a substantial level of screening, particularly under summer conditions. The trees planted in the plan will provide a higher degree of screening under summer conditions because of the density of the screens they create. Within 10 years, in all three of the simulated views, the cooling tower will be substantially hidden, as well as the lower half of the HRSG structures. Applicant believes that Staff has not taken into account the salient features of the final landscaping plan, which creates an attractive landscape composition that will integrate the elements of the project that remain visible into a more visually coherent and pleasing whole. (Ex. 4 J, p. 2.12-7/8.)

Following the applicable CEQA Guidelines, which we applied earlier in the area of visual plumes, Applicant critique's Staff's analysis in the FSA, and provides its own analysis as follows:

> ***Would the project have a substantial adverse effect on a scenic vista?***
>
> Applicant concurs with Staff's conclusion that the project's structures and plumes will not result in significant visual impacts under this criterion. The closest viewpoints from which scenic vistas are available are 8 and 20 miles away, and at these distances, the views will be little affected by the project's presence
>
> ***Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?***
>
> Applicant concurs with Staff's conclusion that the project's structures and plumes will not result in significant visual impacts under this criterion. There are no state-designated scenic highways

---

primarily concerned that the trees specified in the landscape plan could potentially provide perching opportunities for golden eagles, which prey on the San Joaquin kit fox, a protected species. In response to feedback presented by these representatives at a meeting on September 12, 2001, the landscape plan was revised to reduce the project's landscaping potential to attract raptors, and this plan was submitted to the CEC Staff, CDFG, and USFWS on November 9, 2001. The revised plan was reviewed at a workshop on January 23, 2002. Following the workshop, the revised plan was further modified to respond to the suggestions CEC Visual Resources Staff made at that workshop and a new landscape plan and simulations were docketed on April 3, 2002. (Ex. 4 J, p. 2.12-6.)

in the project vicinity, and no project elements are located "within" the right of way of such a highway.

Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

Applicant strongly disagrees with Staff's conclusion that the project structures will substantially degrade the existing visual character or quality of the site and its surroundings. The overwhelming evidence is that the project will not substantially degrade the character and quality of the site and its surroundings because although the project will be large and visible:

- it will have a neat and orderly layout and appearance,
- its surfaces will have colors and finishes that minimize reflectivity and maximize the structures' visual absorption into the setting,
- it will be surrounded by multiple rows of dense landscaping designed to integrate the project facilities into their overall setting and to be visually attractive in its own right,
- it will not substantially alter the existing character of its setting, which is a highly altered landscape of large scale agriculture and infrastructure in which there is already an unusually high concentration of major water and electric facilities, including the 500 kV Tracy Substation, which is located across Mountain House Road from the project site.
- It will not substantially decrease the existing level of visual quality of the setting, which is now moderately low. (10/22 RT 101:4-121:7.) ; Ex. 4 J, p. 2.12-8/9.)

Applicant asserts that Staff's conclusion is wrong on this issue because it:

- mischaracterizes the setting,
- ignores the setting's existing visual character and quality,
- ignores the mitigation proposed as a part of the project, and
- is based on a seriously flawed methodology. *(Ibid.)*

According to Applicant, Staff's analysis is flawed for the following reasons:

- Staff's suggestion that the project's structures would be visible in foreground views from residences is false because no occupied residences are located within a ½ mile radius of the major equipment on the power plant site.

- The statement that structures will be in the foreground views from nearby roadways seriously mischaracterizes the setting. Segments of roadway from which the project would appear in the foreground zone are extremely limited - a 0.7 mile segment of Mountain House Road and a 0.4 mile segment of Byron-Bethany Road lie within the EAEC's project's near-foreground (1/4) mile distance zone and segments of Mountain House Road totaling 0.45 mile and segments of Byron-Bethany road totaling 0.65 lie within the far foreground (1/4 to ½ mile) zone. From most of these segments along Byron-Bethany Road, the EAEC project will not be visible within the primary cone of vision of vehicle drivers. In views from the segments of Mountain House Road lying within the foreground zone, the project landscaping will play a major role in the view, and from the area of Mountain House Road adjacent to the project, the project's structures will be substantially screened by the project landscaping, which will be located just to the east of the roadway, in the immediate foreground of the view. Therefore, structures will not be a prominent element in the foreground views from roadways. Considering the landscaping, the cone of vision of the motorists and the speeds at which the vehicles will be traveling, motorists will have, at most, a brief foreground glimpse of the project as vehicles pass the project. The EAEC will be seen as a middleground feature in views from residences and most nearby roadway segments. However, the FSA is wrong when it characterizes the projects effects on these views as resulting in "a high level of visual degradation."
- Staff's statement that the visual changes resulting from the project would "range from low-to moderate to high depending on viewpoint location" is wrong because by Staff's own logic, if all residential views and most roadway views are from locations in the middleground rather than the foreground viewing zone, it can be presumed that the project's effects on these views would be low to moderate rather than high. Staff has not provided an explanation of or evidence to support how a low to moderate effect on a project area view, which in Staff's own analysis has been rated low to moderate in visual quality "…would substantially degrade the existing visual character or quality of the site and its surroundings." (Ex. 4 J, p. 2.12-9/10; *cf*. Ex. 1, p. 5.2-12/26.)

Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

Applicant asserts that Staff's analysis of the EAEC project's visual effects fails to provide a clear understanding of whether the project would or would not "substantially degrade" the visual character or quality of EAEC's project site and the surrounding area. Staff's assertion that "the project has the potential to create a new source

> of substantial light that would adversely affect nighttime views," is wrong. The EAEC facillity will create a new source of light, but the light will be subject to extensive measures to minimize its impact. As indicated in the AFC, EAEC's lighting will be restricted to areas where it is required for safety, security, and operation. Exterior lights will be hooded, and lights will be directed onsite so that significant light or glare will not be created. Fixtures of a non-glare type will be specified. For areas where lighting is not required for normal safety or security, switched lighting circuits will be provided, allowing these areas to be unilluminated at most times, minimizing the amount of lighting potentially visible offsite. As the dense vegetation to be planted around the perimeter of the project site begins to fill out and gain height, it will have the effect of screening some of the lighting from view. Because of these measures, which are proposed as a part of the EAEC's project design, the facility will not be a substantial source of light nor will it adversely affect nighttime views.[163] (*Cf.* Exs. 4 J, pp. 2.12-10/11; 1, p. 5.12-25/26.)

2. Staff

Staff cross-examined Applicant's expert witness on his applied methodology in an attempt to undermine his findings that the EAEC project will not create unmitigated impacts to the region's visual resources. (10/22 RT 122:3-170:11.)

In addition, Staff provided expert testimony that is consistent with Applicant's summary as we have presented in the CEQA Guidelines presentation presented above. Staff also recognized that Alameda County's position is that the EAEC project will be consistent with all of its Visual Resources LORS, which oppose Staff's finding of inconsistencies. (10/22 RT 190:15-215:12.)

---

[163] Applicant asserts that its nighttime observations establish that there are a number of large, brightly illuminated infrastructure facilities distributed across the EAEC's project area. These facilities create a landscape in which there are large areas of bright illumination, and a level of overall ambient light that is higher than that typically found in rural settings. For example, a night view of the Tracy Substation's 500 kV switchyard (as viewed from the edge of the project site) shows brightly illuminated equipment that is fully visible in views from the north and east. In addition, light from the substation extends onto the surrounding landscape because there is no landscaping or solid fencing around this portion of the substation. In this context, Applicant asserts that the highly controlled lighting associated with the EAEC project will not create a substantial change in or adversely effect nighttime views in the area. In fact, Applicant asserts that the EAEC facility, from some viewpoints, might ameliorate the adverse nighttime lighting impacts from the Tracy Substation. (*Cf.* Exs. 4 J, pp. 2.12-10/11; 1, p. 5.12-25/26.)

3. Alameda County

Alameda County has taken the position that the EAEC facility will:

- not occupy an area that it considers to be sensitive viewshed;
- be consistent with all of its Visual Resources LORS. (10/21 RT 45:16-49:13; 60:13-63:6; 10/22 RT 256:19-257:9.)

4. Intervenor Sarvey

As in the area of visual plumes, Intervenor Sarvey cross-examined the expert witnesses Applicant and Staff provided, but offered no independent testimony of his own. He has, however, provided briefs that clarify his position on the issues. Intervenor Sarvey's position is that the EAEC's project will create significant unmitigated impacts on the area's visual resources and be inconsistent with several of Alameda County Visual Resources LORS. (10/22 RT 170:15-185:21; 255:13-258:24.)

C. Laws, Ordinances, Regulations, and Standards (LORS)

Alameda County has determined that the EAEC project is consistent with all applicable LORS. The County's assessments of its policies and the EAEC project's relationship to them have been included in the FSA. CEC Staff has deferred to this determination. Therefore, Alameda County, Staff, and the Applicant all concur that the Commission should find that the project is in compliance with all applicable Visual Resources LORS. (Exs. 1, p. 5.12-1 & Table 4 (pp. 5.12-29/37; 4 J, p. 2.12-8.)

D. Cumulative Impacts

1. Applicant

Applicant asserts that Staff's conclusion that the EAEC project will result in a significant cumulative visual impact is incorrect. Applicant asserts that the EAEC structures will be substantially screened by the project's landscaping which is carefully composed from a palette of native species. Applicant therefore disputes Staff's conclusion that the landscaped features of the EAEC will cause a greater contribution to visual impacts than the unscreened Tracy Substation. Further, Applicant asserts that under CEQA, Staff must discuss the severity of the impact. Here, Applicant asserts that Staff has offered no incremental effect analysis of the EAEC's lighting to support Staff's conclusion that such lighting, when combined with the lighting from the Tracy Substation, will result in even a perceptible, much less a significant, change in the nighttime landscape. Applicant concludes that the EAEC's incremental contribution to cumulative visual impacts will be de minimis and thus not significant. [10/22 RT 121:8-18; Ex. 4 J, p. 2.12-11/12 citing CEQA Guidelines, section 15130(b).]

2. Staff

Staff concludes that the project structures and the project's night lighting would create significant cumulative impacts to visual resources. Staff contends that the project structures would cause a greater contribution to cumulative visual impacts than any of the other energy infrastructure features, including the Tracy Substation. In addition, Staff contends that the EAEC project would contribute additional lighting impacts to a nighttime landscape that is already substantially impacted by the unshielded lights of the Tracy substation. (Ex. 1, p. 5.2-26/27.

COMMISSION DISCUSSION

Even though the use of generally accepted criteria and a clearly described analytical approach for determining impact significance aid in developing a consistent analysis, we agree with Staff that Visual Resources analysis has an inherently subjective aspect. For example, here the landscape character of the EAEC project site and its immediate region is consistent with a visual character

that is dominated by an unusually high concentration of water and energy facilities of state and regional importance. Even so, Staff found that the EAEC project will create significant and cumulative unmitigated visible impacts. We respectfully disagree.

In our section on Land Use, we deferred to Alameda County's judgment that the EAEC project is consistent with its LORS. We see no compelling reason to depart from that approach here in our analysis on Visual Resources. Here, Alameda County has concluded that the EAEC project will not impact a sensitive viewshed and that the project is consistent with the County's Visual Resources LORS. Again, we defer to the County's judgements.

Insofar as San Joaquin County is concerned, the Committee is impressed with the size and breadth of the Mountain House community's development, which will greatly enlarge the population density in the North San Joaquin Valley area, where the EAEC project is proposed to be located. In various parts of our Decision, we have discussed how the growth of that planned community will add infrastructure, homes and associated business development for in excess of 40,000 residents. Even Staff has characterized Mountain House's impact to the local region "as a change in the rural agricultural visual character to that of a suburban mixed-use and highly modified landscape." (Ex. 1, p. 5.11b-15.)

With Staff's explicit recognition of change, the Committee is persuaded that we must take into account now in reaching our Decision here the burgeoning development in the North San Joaquin region of Alameda County. Otherwise, we simply cannot reconcile Staff's divergent conclusions on the impacts related to visual plumes and overall visual impacts. Stated differently, the Committee is unable to find that the region will not be significantly impacted by visual plumes yet the EAEC's overall visual impacts will be significant. Instead, we conclude that neither the EAEC's visual plumes nor its overall presence will further degrade the region's substantial existing energy infrastructure.

With this finding, the Committee need not reach the issue of override because we do not view the EAEC as creating a significant impact to the local area's visual resources.

FINDINGS AND CONCLUSION

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

1. The EAEC project is planned for an area that has a mix of open space land-extensive infrastructure facilities, and scattered industrial, commercial, and residential development. This area now is undergoing rapid development, which is in the process of filing in many of the vacant lands and creating a landscape dominated by complexes of large, boxy industrial, office, and commercial structures surrounded by extensive areas of landscaped parking.

2. Due to the EAEC's construction over a 24-month period, which is a relatively short-term nature of project construction, the adverse visual impacts that would occur during construction would not be significant.

3. The landscape character of the project site and its immediate region is consistent with a visual character that is dominated by an unusually high concentration of water and energy facilities of state and regional importance.

4. The EAEC facility's components will be arranged on the site in a neat and orderly manner.

5. The EAEC project's surfaces will have colors and finishes that minimize reflectivity and maximize the structures' visual absorption into the setting.

6. The EAEC facillity will create a new source of light, but the light will be subject to extensive measures to minimize its impact to a level of insignificance.

7. The EAEC project will be surrounded by multiple rows of dense landscaping designed to integrate the project facilities into their overall setting and to be visually attractive in its own right.

8. The EAEC project will not substantially alter the existing character of its setting, which is a highly altered landscape of large scale agriculture and

infrastructure in which there is already an unusually high concentration of major water and electric facilities, including the 500 kV Tracy Substation, which is located across Mountain House Road from the project site.

9. The EAEC project as proposed includes extensive landscaping that will create an attractive composition, to integrate the project visually into its overall landscape setting and, to screen project structures to the extent feasible in views from nearby areas.

10. Applicant's final landscape plan that was approved by staff from the CEC, CDFG, and USFWS, provides the maximum level of screening that can be achieved from vegetation which does not result in a significant adverse impact to wildlife, particularly the San Joaquin kit fox.

11. With implementation of the final landscaping plan and the Conditions of Certification, the project will not significantly degrade the general visual character and quality of the area.

12. The EAEC's incremental contribution to cumulative visual impacts will be de minimis--and thus not significant.

13. Alameda County has determined that the EAEC project is consistent with all applicable LORS as specified in the **Visual Resources** portion of this Decision.

We, therefore, conclude that construction and operation of the EAEC will not cause any significant direct, indirect, or cumulative adverse visual impacts. As conditioned, the project complies 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 To minimize the visual impacts of project construction, the project owner shall visually screen the project site as well as staging and material and equipment storage areas with temporary screening fencing. The screening for the power plant site shall be no less than12 feet tall. The screening for staging and material and equipment storage areas shall be no less than 8 feet tall unless material or equipment will be more than 8 feet tall, in which case the screening shall be no less than 12 feet tall. Fencing shall be of an appropriate design, opacity, and color for each specific location, as determined by the CPM. All evidence of construction

activities, including ground disturbance due to staging and storage areas, shall be removed and remediated to an original or improved condition upon completion of construction including the replacement of any vegetation or paving removed during construction.

The project owner shall submit to the CPM for review and approval a detailed screening and restoration plan the proper implementation of which will satisfy these requirements. The project owner shall install the temporary screening before the start of project construction.

Verification: At least 90 days prior to the start of site mobilization, the project owner shall submit the screening and restoration plan to the CPM for review and approval.

The project owner shall notify the CPM within seven days after installing screening at staging, material, and equipment storage areas that it is ready for inspection.

The project owner shall notify the CPM within seven days after completing the surface restoration that it is ready for inspection.

VIS-2 Prior to the first turbine roll, the project owner shall treat the surfaces of all project structures and buildings visible to the public such that their colors minimize visual intrusion and contrast by blending with the landscape; their surfaces do not create excessive glare; and they are consistent with local laws, ordinances, regulations, and standards. The project owner shall submit for CPM review and approval and to Alameda County for review and comment, a specific treatment plan the proper implementation of which will satisfy these requirements. The treatment plan shall include:

a) Specification, and 11" x 17" color simulations at life size scale when viewed at 18 inches, of the treatment proposed for use on project structures, including structures treated during manufacture;

b) A list of each major project structure, building, tank, transmission line tower and/or pole, and fencing specifying the color(s) and finish proposed for each (colors must be identified by name and by vendor brand or a universal designation). The transmission line structures shall have a neutral gray finish. The conductors shall be non-specular conductors and non-reflective, and the insulators shall be non-refractive;

c) Two sets of brochures and/or color chips for each proposed color;

d) Samples with dimensions of at least five inches by seven inches of each proposed treatment and color on the predominant material to

which each treatment would be applied to the heat recovery steam generator (HRSG), the HRSG stacks, and the cooling tower;

e) A detailed schedule for completion of the treatment; and

f) A procedure to ensure proper treatment maintenance for the life of the project.

The project owner shall not specify to the vendors the treatment of any buildings or structures treated during manufacture, or perform the final treatment on any buildings or structures treated on site, until the project owner receives notification of approval of the treatment plan by the CPM.

Verification: The project owner shall submit its proposed treatment plan at least 90 days prior to ordering the first structures that are color treated during manufacture.

Prior to the first turbine roll, the project owner shall notify the CPM that all buildings and structures are ready for inspection.

The project owner shall provide a status report regarding treatment maintenance in the Annual Compliance Report.

VIS-3 The project owner shall install landscaping to provide the maximum feasible visual screening between the power plant and public view areas. The landscaping shall include rows and informal groupings of trees and shrubs around the power plant to provide a virtually continuous visual screen. To maximize visual screening the species to be used shall be fast-growing, and the size of the plants shall be the optimum for achieving maximum height as soon as possible. The trees to be planted along the north and east sides of the project site, and along the south side of the project site except under the project's transmission lines, shall be capable of reaching a minimum height of 50 feet at maturity. The project owner shall also plant evergreen trees and/or shrubs to visually screen the above-ground ancillary facilities associated with the linear project components, except for new transmission line structures for the interconnection.

The project owner shall submit a landscaping plan to the CPM for review and approval. The plan shall include:

a) 11"x17" color photo simulations of the proposed landscaping for the power plant at 10 years after planting as it is expected to appear in both summer and winter as viewed from KOPs 1, 2, and 5;

b) a detailed list of plants to be used, specifying their rates of growth and times to maturity given their proposed size and age at planting; and

c) a diagram showing the planting locations for each species. Landscaping shall be planted continuously around the power plant except as restricted by access roads and the electric transmission interconnection lines.

The project owner shall not implement the plan until the project owner receives approval of the submittal from the CPM.

Verification: The project owner shall submit the landscaping plan prior to the first turbine roll and at least 90 days prior to installing the landscaping. The planting must be completed by start of project operation.

The project owner shall notify the CPM within seven days after completing installation of the landscaping, that the landscaping is ready for inspection.

VIS-4 The project owner shall ensure that lighting for construction of the power plant is used in a manner that minimizes potential night lighting impacts, as follows:

a) All lighting shall be of minimum necessary brightness consistent with worker safety;
b) All fixed position lighting shall be shielded, hooded, and directed downward to minimize backscatter to the night sky and direct light trespass (direct lighting extending outside the boundaries of the construction area);
c) Wherever feasible and safe, lighting shall be kept off when not in use and motion detectors shall be employed; and
d) A lighting complaint resolution form (following the general format of that in **VISUAL RESOURCES Appendix VR-2**) shall be maintained by plant construction management, to record all lighting complaints received and to document the resolution of that complaint.

Verification: Within seven days after the first use of construction lighting, the project owner shall notify the CPM that the lighting is ready for inspection.

If the CPM notifies the project owner that modifications to the lighting are needed to minimize impacts, within 15 days of receiving that notification, the project owner shall implement the necessary modifications and notify the CPM that the modifications have been completed.

The project owner shall report any lighting complaints and documentation of resolution in the Monthly Compliance Report.

VIS-5 The project owner shall design and install all permanent lighting such that, to the extent that is consistent with safety considerations, light bulbs and reflectors are not visible from public viewing areas; lighting does not cause reflected glare; and illumination of the project, the

vicinity, and the nighttime sky is minimized. To meet these requirements the project owner shall ensure that:

a) Lighting shall be designed so exterior light fixtures are hooded, with lights directed downward or toward the area to be illuminated and so that backscatter to the nighttime sky is minimized. The design of the lighting shall be such that the luminescence or light source is shielded to minimize light trespass outside the project boundary while taking into consideration security concerns.

b) All lighting shall be of minimum necessary brightness consistent with worker safety and security concerns;

c) High illumination areas not occupied on a continuous basis (such as maintenance platforms) shall have switches or motion detectors to light the area only when occupied; and

d) Plant operations staff shall record all lighting complaints received and document the resolution of those complaints. All records of lighting complaints shall be kept in the on-site compliance file.

Verification: At least 60 days prior to ordering any permanent exterior lighting, the project owner shall submit to the CPM for review and approval written documentation describing the lighting control measures and fixtures, hoods, shields proposed for use. The project owner shall incorporate the CPM's comments in lighting equipment orders.

Prior to the first turbine roll, the project owner shall notify the CPM that the lighting has been completed and is ready for inspection.

The project owner shall report any complaints about permanent lighting and provide documentation of resolution in the Annual Compliance Report for that year.

VIS-6 The project owner shall comply with all Alameda County requirements regarding temporary and permanent signage). The design of any signs required by safety regulations shall conform to the criteria established by those regulations.

Verification: At least 90 days prior to installing signage, the project owner shall submit its signage plan to the CPM for review and approval and to Alameda County for review and comment.

The project owner shall notify the CPM within seven days after completing installation of signage that they are ready for inspection.

VIS-7 The project owner shall place the water tanks, administration building, and other smaller structures on the western edge of the power plant site to create a transition in scale between the corridor along Mountain House Road and the plant's taller features.

Verification: At least 60 days prior to the start of construction, the project owner shall submit to the CPM for review and approval a plot plan that demonstrates compliance with the condition.

Appendix A

LORS: Laws, Ordinances, Regulations, and Standards

AIR QUALITY

FEDERAL

The federal Clean Air Act requires the proponent of any new major stationary source of air pollution or any major modification to a major stationary source to obtain a construction permit before commencing construction. This process is known as New Source Review (NSR). Its requirements differ depending on the attainment status of the area where the major facility is to be located. Prevention of Significant Deterioration (PSD) requirements apply in areas that are in attainment of the national ambient air quality standards. The 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 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. Large sources are required to operate in compliance with the Title V requirements promulgated in Title 40, Code of Federal Regulations, Section 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 regulations and has delegated to the District the implementation of the federal PSD, Non-attainment NSR, and Title V programs. The District implements these programs through its own rules and regulations, which are, at a minimum, as stringent as the federal regulations.

The EAEC's gas turbines are also subject to the federal New Source Performance Standards (NSPS). These standards include a NO_x emissions concentration of no more than 75 parts per million (ppm) at 15 percent excess oxygen (ppm@15%O_2), and a SO_x emissions concentration of no more than 150 ppm@15%O_2.

STATE

California Health and Safety Code, Section 41700, requires that: "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerate number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property."

LOCAL

As part of the Commission's licensing process, in lieu of issuing a construction permit to the applicant for the EAEC, the District prepared and presented to the Commission a Final Determination of Compliance (FDOC) on July 24, 2002. The FDOC evaluates whether and under what conditions the proposed project will comply with the District's applicable rules and regulations, as described below. Staff has incorporated the FDOC recommended conditions of certification in its Final Staff Assessment.

The project is subject to the specific District rules and regulations that are briefly described below:

Regulation 2

Rule 1 - General Requirements. This rule contains general requirements, definitions, and a requirement that an applicant submit an application for an authority to construct and permit to operate.

Rule 2 - New Source Review. This rule applies to all new and modified sources. The following sections of Rule 2 are the regulations that are applicable to this project.

- Section 2-2-301 - Best Available Control Technology (BACT) Requirement: This rule requires that BACT be applied for each pollutant which is emitted in excess of 10.0 pounds per day.
- Section 2-2-302 - Offset Requirement, Precursor Organic Compounds and Nitrogen Oxides. This section applies to projects with an emissions increase of 50 tons per year or more of organic compounds and/or NO_x. Offsets shall be provided at a ratio of 1.15 tons of emission reduction credits for each 1.0 ton of proposed permitted emissions.
- Section 2-2-303 - Offset Requirements, Total Particulate Matter, PM_{10} and Sulfur Dioxide: If a Major Facility (a project that emits any pollutant greater than 100 tons per year) has a cumulative increase of 1.0 ton per year of PM_{10} or SO_2, emission offsets must be provided for the entire cumulative increase at a ratio of 1.0:1.0.
- Emission reductions of nitrogen oxides and/or sulfur dioxide may be used to offset increased emissions of PM_{10} at offset ratios deemed appropriate by the Air Pollution Control Officer.
- A facility which emits less than 100 tons of any pollutant may voluntarily provide emission offsets for all, or any portion, of their PM_{10} or sulfur dioxide emissions increase at the offset ratio required above (1.0:1.0).
- Section 2-2-606 - Emission Calculation Procedures, Offsets. This section requires that emission offsets must be provided from the District's Emissions Bank, and/or from contemporaneous actual emission reductions.

Rule 7-Acid Rain. This rule applies the requirements of Title IV of the federal Clean Air Act, which are spelled out in Title 40, Code of Federal Regulations, Section 72. The provisions of Section 72 will apply when EPA approves the District's Title IV program, which has not been approved at this time. The Title IV requirements will include the installation of continuous emission monitors to monitor acid deposition precursor pollutants.

Regulation 6

Particulate Matter and Visible Emission. The purpose of this regulation is to limit the quantity of particulate matter in the atmosphere. The following two sections of Regulation 6 are directly applicable to this project:

- Section 301 - Ringelmann No. 1 Limitation: This rule limits visible emissions to no darker than Ringelmann No. 1 for periods greater than three minutes in any hour.

- Section 310 - Particulate Weight Limitation: This rule limits source particulate matter emissions to no greater than 0.15 grains per standard dry cubic foot.

Regulation 9

Rule 1 - Limitations

- Section 301: Limitations on Ground Level Sulfur Dioxide Concentration. This section requires that SO_2 emissions shall not impact at ground level in excess of 0.5 ppm for 3 consecutive minutes, or 0.25 ppm averaged over 60 minutes, or 0.05 ppm averaged over 24 hours.
- Section 302: General Emission Limitation. This rule limits the sulfur dioxide concentration from an exhaust stack to no greater than 300 ppm dry.

Rule 9 - Nitrogen Oxides from Stationary Gas Turbines. Effective January 1, 1997, this rule will limit gaseous fired, SCR equipped, combustion turbines rated greater than 10 MW to 9 ppm@15%O2.

Regulation 10

Rule 26 - Gas Turbines - Standards of Performance for New Stationary Sources. This rule adopts the national maximum emission limits (40 C.F.R. §60) which are 75 ppm NO_x and 150 ppm SO_2 at 15 percent O_2. Whenever any source is subject to more than one emission limitation rule, regulation, provision or requirement relating to the control of any air contaminant, the most stringent limitation applies.

BIOLOGICAL RESOURCES

FEDERAL

Endangered Species Act of 1973

Title 16, United States Code, section 1531 et seq., and Title 50, Code of Federal Regulations, part 17.1 et seq., designate and provide for protection of threatened and endangered plant and animal species, and their critical habitat. Section 7 requires a consultation with the U.S. Fish and Wildlife Service (USFWS) if “take” may result during lawful project activities. Western was the lead agency in requesting the consultation. If no federal nexus exists for a project, a Section 10, Habitat Conservation Plan (HCP) may be required.

Migratory Bird Treaty Act

Title 16, United States Code, sections 703 through 711, prohibit the take or possession of migratory birds, parts, or nests without a permit issued by the USFWS and California Department of Fish and Game (CDFG).

Bald and Golden Eagle Protection Act

Title 16, United States Code, section 668, prohibits the take or possession of eagles, parts, or nests without a permit issued by the USFWS.

Clean Water Act

Title 33 United States Code, section 404 et seq., prohibits the discharge of dredged or fill material into the waters of the United States without a permit. The administering agency is the Army Corps of Engineers.

Department of Energy-Floodplain and Wetland Regulations

This regulation at Title 10, Code of Federal Regulations (CFR), section 1022 establishes policy and procedures for discharging the Department of Energy's (DOE's) responsibilities with respect to compliance with Executive Order (E.O.) 11988 and E.O. 11990, including: (1) DOE policy regarding the consideration of floodplain/wetlands factors in DOE planning and decision-making; and (2) DOE procedures for identifying proposed actions located in floodplain/wetlands, providing opportunity for early public review of such proposed actions, preparing floodplain and wetland assessments, and issuing statements of findings for actions in a floodplain.

STATE

California Endangered Species Act of 1984

Fish and Game Code, sections 2050 through 2098, protect California’s rare, threatened, and endangered species.

California Code of Regulations

Title 14, California Code of Regulations, sections 670.2 and 670.5, list animals of California designated as threatened or endangered. The CEQA Guidelines Section 15000 et seq. defines the type and extent of biological information needed to evaluate impacts from a proposed project.

Title 20, California Code of Regulations, section 1702 protects “areas of critical concern” and “species of special concern.”

Protection for 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.

Protection for Fully Protected Species

Fish and Game Code, sections 3511, 4700, 5050, and 5515, designate certain species as fully protected and prohibits the take of such species or their habitat unless for scientific purposes (see also California Code of Regulations Title 14, Division 1, Subdivision 3, Chapter 3, section 670.7).

Protection of 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.

Protection of Significant Natural Areas

Fish and Game Code section 1930 et seq. designate certain areas such as refuges, natural sloughs, riparian areas, and vernal pools as significant wildlife habitat.

Fish and Game Code section 1580 designates land and water areas as significant wildlife habitats so they can be preserved in natural condition for low-impact public use.

Streambed Alteration Agreement

Fish and Game Code Section 1600 reviews 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., designate state rare, threatened, and endangered plants.

Delta Protection Act of 1992

Sections 29700 –29712, Legislate protection for the Sacramento-San Joaquin Delta and its natural resources including wildlife, fish, and the habitats on which they depend. Section 29760 specifies the adoption of a comprehensive, long-term resource management plan, which includes requirements for the conservation, preservation, and restoration of Delta wildlife, fisheries, and habitats.

LOCAL

Alameda County East County Area Plan (1994)

- Policy 113 requires landscaping that enhances the scenic quality of an area. Criteria for landscaping includes: use of drought resistant plants, use of plants compatible with the surrounding vegetation, use of plants which provide habitat value, use of plants which are fire retardant, and suitable to site conditions.
- Program 51 provides a list of extremely invasive non-native plants that are not suitable for landscaping.
- Policy 118 states that the county will secure open space, through acquisition of easements or fee title, for the specific purpose of preserving wildlife habitats.
- Policies 119-120 encourage preservation and enhancement of biological diversity and provide specific attention to management of special status species.

There are also two regional resource management plans that have been developed to protect open space, habitats and populations of special status species (San Joaquin County 2000; USFWS 1998). Both of these plans establish a concern for special status species and loss of habitat quantity and quality in the project vicinity. The two plans include:

- **The San Joaquin County Multispecies Habitat Conservation and Open Space Plan** (SJMSCP) provides a strategy for balancing protection of essential wildlife habitat as well as open space, with the increasing demands of human society and economy driving land development. This plan applies to San Joaquin County only, and relies upon minimizing, avoiding, and mitigating impacts to species covered within the plan. One of the focal species in the plan is the San Joaquin kit fox.
- **The Recovery Plan for Upland Species of the San Joaquin Valley, California.** The primary objective of this recovery plan is the recovery of 11 endangered and threatened species, along with protection and long-term conservation of candidate species and species of special concern. The species covered in the plan inhabit grasslands and scrublands of the San Joaquin Valley, adjacent foothills, and small valleys. The San Joaquin kit fox is a focal species in this plan as well.

CULTURAL RESOURCES

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.
- Title 36, Code of Federal Regulations, section 61, Federal Guidelines for Historic Preservation Projects: The U. S. 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 California 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 of 1966, as amended (Title16, United States Code, section 470). This act expresses the general policy of the federal government that supports and encourages the preservation of prehistoric and historic resources for present and future generations. It established the National Register of Historic Places, established the President's Advisory Council on Historic Preservation, established procedures for actions taken by federal agencies that may affect historic resources, and established a fund for preservation. Pertinent to this project, section 106 of this act 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.
- Title 36, Code of Federal Regulations, Part 800. These procedures of the Advisory Council on Historic Preservation, most commonly referred to as the section 106 process, established a process to ensure that federal agencies take into account the impacts of their undertakings on significant cultural resources. An agency is strongly encouraged to consult with various parties, including the State, private parties, and Indian Tribes as they determine the presence or absence of cultural resources, the eligibility of resources for nomination to the National Register of Historic Places (NRHP), and the effect the federal action may have on those resources. Very similar criteria and procedures are used by the State of California in identifying cultural resources eligible for listing in the California Register of Historical Resources (CRHR).
- Executive Order 11593, "Protection and Enhancement 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 of 1990; Title 25, United States Code, section 3001, et seq. This act provides for the repatriation of certain items from the federal government and certain museums to the native groups to which they once belonged. However, the provisions for repatriation only apply to items found on federal lands or Indian lands. The act also defines “cultural items,” “sacred objects,” and “objects of cultural patrimony”; and it establishes a means for determining ownership of these items.
- National Environmental Policy Act of 1969 (NEPA; Title 42, United States Code, sections 4321-4347). This act requires federal agencies to consider the impacts of their projects on the human environment, whether the action is funded or permitted by the agency. Part of the human environment includes the cultural environment.
- Title10, Code of Federal Regulations, Part 1021. These are the procedures of the Department of Energy that implement the provisions of the National Environmental Policy Act.

STATE

- California Code of Regulations, Title 14, section 4852 defines the term "cultural resource" to include buildings, sites, structures, objects, and historic districts.
- Public Resources Code, Section 5000 establishes a California Register of Historic Places; determines significance of and defines eligible resources. It identifies any unauthorized removal or destruction of historic resources on sites located on public land as a misdemeanor. It also prohibits obtaining or possessing Native American artifacts or human remains taken from a grave or cairn and establishes the penalty for possession of such artifacts with intent to sell or vandalize them as a felony. This section defines procedures for the notification of discovery of Native American artifacts or remains, and states that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated.
- The California Environmental Quality Act (CEQA) (Public Resources Code, section 21000 et seq.; Title 14, California Code of Regulations, section 15000 et seq.) requires analysis of potential environmental impacts of proposed projects and requires application of feasible mitigation measures.
- Public Resources Code section 21083.2 states that the lead agency determines whether a project may have a significant effect on “unique” archaeological resources; if so, an EIR shall address these resources. If a potential for damage to unique archaeological resources can be demonstrated, the lead agency may require reasonable steps to preserve the resource in place. Otherwise, mitigation measures shall be required as prescribed in this section. The section discusses excavation as mitigation; limits the Applicant’s cost of mitigation; sets time frames for excavation; defines “unique and non-unique archaeological resources;” and provides for mitigation of unexpected resources.
- 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(b), prescribes the manner of maintenance, repair, stabilization, restoration, conservation, or reconstruction as mitigation of a project's impact on a historical resource. It also discusses documentation as a mitigation measure; and discusses mitigation through avoidance of damaging effects on any historical resource of an archaeological nature, preferably by preservation in place, or by data recovery through excavation if avoidance or preservation in place is not feasible. Data recovery must be conducted in accordance with an adopted data recovery plan.
- CEQA Guidelines, section 15064.5 defines the term "historical resources," explains when a project may have a significant effect on historic resources, describes CEQA's applicability to archaeological sites, and specifies the relationship between "historical resources" and "unique archaeological resources."
- Penal Code, section 622 1/2 states that anyone who willfully damages an object or thing of archaeological or historic interest is guilty of a misdemeanor.
- California Health and Safety Code, section 7050.5 states that if human remains are discovered during construction, the project owner is required to contact the county coroner.

LOCAL

San Joaquin County

The San Joaquin County General Plan includes a goal for protection of architectural, historical, archaeological, and cultural resources (San Joaquin County 1992). The General Plan contains policies for the identification, protection, and preservation of significant archaeological and historical resources, reuse of architecturally or historically significant buildings, and promotion of public awareness and support for historic preservation. These policies are implemented through county museum programs for public education, historic inventories, and promotion of National Register and California Register nominations of historic structures. The Planning Department is required to develop historic preservation regulations.

Contra Costa County

The Contra Costa General Plan contains a goal to identify and preserve important archaeological and historic resources (Contra Costa County 1996). There are policies for preservation and protection of buildings, structures, and areas with historic or archaeological significance, use of compatible design for development of areas adjacent to areas of historic significance, and balancing multiple land use with protection of archaeological resources in the Southeast County Area. The Planning Agency will develop an archaeological sensitivity map and procedures for protection of archaeological resources encountered during construction. Use of the State Historic Building Code is encouraged and property owners are encouraged to nominate their historic properties for the NRHP and the CRHR and to make use of tax incentives.

East Alameda County

The East Alameda County General Plan (Alameda County 1994) contains a goal to protect cultural resources from development. Policies include preservation and identification of significant archaeological and historical resources and planning

development to avoid cultural resources. Procedures for protection of archaeological sites include requiring records searches and surveys and halting construction if archaeological sites are found. Renovation or relocation are considered appropriate measures for preservation of historic structures. Proposed demolition of historic structures must be reviewed by qualified professionals.

FACILITY DESIGN

The applicable LORS for each engineering discipline (civil, structural, mechanical, electrical, and controls) are described in AFC Section 10.4, the following AFC Appendices (EAEC 2001a), and Data Adequacy Response Set 1, Section 2.5 (EAEC 2001e).

- Appendix 10A – Civil Engineering Design Criteria
- Appendix 10B – Structural Engineering Design Criteria
- Appendix 10C – Mechanical Engineering Design Criteria
- Appendix 10D – Electrical Engineering Design Criteria
- Appendix 10E – Control Systems Engineering Design Criteria
- Appendix 10F – Chemical Engineering Design Criteria

Some of these LORS include: California Building Code (CBC), American National Standards Institute (ANSI), American Society of Mechanical Engineers (ASME), American Society for Testing and Materials (ASTM), and the American Welding Society (AWS).

GEOLOGY AND PALEONTOLOGY

FEDERAL

The proposed East Altamont Energy Center (EAEC) is not located on Federal property but will be interconnected to a federally owned substation. There are no federal LORS for geological hazards and resources or grading for the proposed project. The Federal Antiquities Act of 1906, in part, protects paleontological resources from vandalism and unauthorized collection on federal land (PL 59-209; 16 United States Code section 431 *et seq*.; 34 Stat. 25). The National Environmental Policy Act of 1969, as amended, requires analysis of potential environmental impacts to important historic, cultural and natural aspects of our national heritage (United States Code, section 4321 et seq.; 40 Code of Federal Regulations, section 1502.25).

STATE AND LOCAL

The California Building Code (CBC) 1998 edition is based upon the *Uniform Building Code* (*UBC*), 1997 edition, which was published by the International Conference of Building Officials. The *CBC* is a series of standards that are used in investigation, design (Chapters 16 and 18) and construction (including grading and erosion control; Appendix Chapter 33). The *CBC* supplements the grading and construction requirements of the *UBC*.

The California Environmental Quality Act (CEQA) Guidelines Appendix G provides a checklist of questions that a lead agency should normally address if relevant to a project's environmental impacts. The sections of Appendix G that are relevant to an analysis of Geology and Paleontology are as follows:

- 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 Assessment and Mitigation of Adverse Impacts to Non-Renewable Paleontologic Resources is a set of procedures and standards for assessing and mitigating impacts to vertebrate paleontological resources (Society of Vertebrate Paleontologists 1995). These guidelines were developed by a committee of the Society of Vertebrate Paleontologists (SVP), a national organization.

HAZARDOUS MATERIALS MANAGEMENT

FEDERAL

The Superfund Amendments and Reauthorization Act of 1986 (Pub. L. 99-499, §301,100 Stat. 1614 [1986]), also known as SARA Title III, contains the Emergency Planning and Community Right To Know Act (EPCRA) as codified in 42 U.S.C. §11001 et seq. This Act requires that certain information about any release to the air, soil, or water of an extremely hazardous material must be reported to state and local agencies.

The Clean Air Act (CAA) of 1990 (42 U.S.C. §7401 et seq. as amended) established a nationwide emergency planning and response program and imposed reporting requirements for businesses which store, handle, or produce significant quantities of extremely hazardous materials. The CAA section on Risk Management Plans - codified in 42 U.S.C. §112(r) - requires 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 the CAA are reflected in the California Health and Safety Code, section 25531 et seq.

STATE

The California Accidental Release Prevention Program (Cal-ARP) - Health and Safety Code, section 25531 - 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).

Section 25503.5 of the California Health and Safety Code requires facilities which store or use hazardous materials to prepare and file a Business Plan with the local Certified Unified Program Authority (CUPA), in this case the Alameda County Department of Environmental Health. This Business Plan is required to contain information on the business activity, the owner, a hazardous materials inventory, facility maps, an Emergency Response Contingency Plan, an Employee Training Plan, and other recordkeeping forms.

Title 8, California Code of Regulations, section 5189, requires facility owners to develop and implement effective safety management plans to ensure that large quantities of hazardous materials are handled safely. While such requirements primarily provide for the protection of workers, they also indirectly improve public safety and are coordinated with the 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.

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, that characterize the surrounding land. The pipeline classes are defined as follows (Title 49, Code of Federal Regulations, Part 192):

- Class 1: Pipelines in locations within 220 yards of ten or fewer buildings intended for human occupancy in any 1-mile segment.
- Class 2: Pipelines in locations within 220 yards of more than ten but fewer than 46 buildings intended for human occupancy in any 1-mile segment. This class also includes drainage ditches of public roads and railroad crossings.
- Class 3: Pipelines in locations within 220 yards of more than 46 buildings intended for human occupancy in any 1-mile segment, or where the pipeline is within 100 yards of any building or small well-defined outside area occupied by 20 or more people on at least 5 days a week for 10 weeks in any 12 month period (the days and weeks need not be consecutive).
- Class 4: Pipelines in locations within 220 yards of building s with 4 or more stories above ground in any 1-mile segment.

The natural gas pipeline 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, sections 190, 191, and 192:

- Title 49, Code of Federal Regulations, section 190 outlines the pipeline safety program procedures;
- Title 49, Code of Federal Regulations, section 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, section 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, that

characterize the surrounding land. This section 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 in Articles 79 and 80. The latest revision to Article 80 was adopted in 1997 (Uniform Fire Code, 1997) and includes minimum setback requirements for outdoor storage of ammonia.

The California Building Code contains requirements regarding the storage and handling of hazardous materials. The Chief Building Official must inspect and verify compliance with these requirements prior to issuance of an occupancy permit. A further discussion of these requirements is provided in the **Seismic Issues** portion of this document.

If not for Energy Commission jurisdiction, the Alameda County Environmental Management Department would be the issuing agency for the Consolidated Hazardous Materials Permit. The permit review and mitigation authority covers hazardous materials, hazardous waste, compressed gases and tiered treatment, the Hazardous Materials Business Plan, and the Risk Management Plan for anhydrous ammonia. In regards to seismic safety issues, the site is located in Seismic Risk Zone *3*. Construction and design of buildings and vessels storing hazardous materials must conform to the 1997 Uniform Building Code, the 1998 California Building Code, and the Alameda County Building Code.

LAND USE

FEDERAL

Federal Aviation Administration (FAA) – Determination of Hazard to Air Navigation

The proposed project site is approximately 3 miles southeast of the Byron Airport in Contra Costa County. A portion of the proposed project site is shown to be within the Clear Zone of the Byron Airport (Hodges and Shutt, East Contra Costa County Airport Master Plan Report, Byron, California. May 1986). The FAA has made a Determination of No Hazard to Air Navigation associated with the proposed project. This determination concerns the effect of structures on the safe and efficient use of navigable airspace. Under the provisions of Title 49, United States Code, section 44718 and Title 14 of the Code of Federal Regulations, construction or alteration of a structure in the vicinity of an airport cannot exceed obstruction standards and must comply with proper marking and lighting. Any future construction or alteration associated with project facilities would require a separate notice to the FAA. The FAA's determination does not include temporary construction equipment such as cranes or derricks, which may be used during construction. If the height of the construction equipment exceeds the height of the studied structure, a separate notice must be submitted to the FAA (EAEC 2001n).

STATE

Subdivision Map Act (Pub. Resources Code § 66410-66499.58)

The Subdivision Map Act provides procedures and requirements regulating land divisions (subdivisions) and the determining of parcel legality. Regulation and control of the design and improvement of subdivisions, by this Act, has been vested in the legislative bodies of local agencies. Each local agency by ordinance regulates and controls the initial design and improvement of common interest developments and subdivisions for which the Map Act requires a tentative and final map.

Delta Protection Act of 1992

The California Legislature established the Delta Protection Act in 1992 to declare the Sacramento-San Joaquin Delta a natural resource to be protected, maintained, and where possible enhanced for agriculture, wildlife habitat, and recreational activities. The act created the Delta Protection Commission with a mandate to develop a long-term resource management plan for the Delta Primary Zone (Pub. Resources Code § 29700 et seq.). All local government general plans for areas within the Primary Zone are required to be consistent with the Delta Protection Act regional plan for the area. The "Primary Zone" means the delta land and water area of primary state concern and statewide significance which is situated within the boundaries of the delta, but that is not within either the urban limit line or sphere of influence line of any local government's general plan or currently existing studies, as of January 1, 1992. The Secondary Zone consists of areas within the statutory Delta (as defined in section 12220 of the California Water Code) but not part of the Primary Zone. Local plans for land use in the

Secondary Zone are not required to conform to the regional plan. The proposed project site exists in the Secondary Zone of the statutory Delta (DPC, 1992).

LOCAL

County of Alameda

Alameda County General Plan

Under California State planning law, each incorporated City and County must adopt a comprehensive, long-term General Plan that governs the physical development of all lands under its jurisdiction. The general plan is a broadly scoped planning document and defines large-scale planned development patterns over a relatively long timeframe.

The General Plan consists of a statement of development policies and must include a diagram and text setting forth the objectives, principles, standards and proposals of the document. At a minimum, a General Plan has seven mandatory elements including Land Use; Circulation; Housing; Conservation; Open Space; Noise and Safety.

Alameda County administers the State required general plan as a group of documents organized by geographic areas and subject matter (Government Code, § 65301).

East County Area Plan

The East County Area Plan (ECAP) is a portion of the Alameda County General Plan. The ECAP was adopted by the Alameda County Board of Supervisors on May 5, 1994 and corrected March 1996. The ECAP provides goals, policies and programs for the physical development for the area designated by the Plan as eastern Alameda County. The Plan addresses specific issues that affect both unincorporated and incorporated areas, but have legal regulatory effect only within currently unincorporated areas. The proposed project site is located within the ECAP area. In 2001 the ECAP was revised as a result of a local initiative, Measure D.

Specific ECAP policies applicable to the EAEC project are listed below:

- Policy 1 directs the County to identify and maintain an Urban Growth Boundary that defines areas suitable for urban development. A related item, Policy 17, restricts the County from approving urban development if it is located outside of the Boundary;
- Policy 14A restricts the County from authorizing public facilities or other infrastructure in excess of that needed for development consistent with the agricultural land preservation goals embodied in Measure D. Infrastructure needed to create adequate service for the East County is acceptable;
- Policy 75 directs the County to conserve prime soils (as defined by the USDA Soil Conservation Service Land Capability Classification) and Farmland of Statewide Importance and Unique Farmland (as defined by the California Department of Conservation FMMP [Farmland Mapping and Monitoring Program]);
- Policy 76 directs the County to preserve the Mountain House area for intensive agricultural use (Northeastern Alameda County);

- Policy 84 directs the County to give highest priority in areas designated “Large Parcel Agriculture” to agriculture operations;
- Policy 85 (and Policy 81) restates the concept that areas designated “Large Parcel Agriculture” include agricultural processing facilities and other uses that primarily support the area’s agricultural production;
- Policy 91 requires the County to encourage cities in the East County to adopt policies and programs (such as mitigation fees for the conversion of agricultural lands within city boundaries and on lands to be annexed to a city) to fund the Alameda County Open Space Land Trust for protection of resources and the preservation of a continuous open space system outside the Urban Growth Boundary (County of Alameda, 1996);
- Policy 140A: The County shall recognize the Byron (East Contra Costa County) Airport as a regional resource, and shall work with Contra Costa County to ensure that land uses approved in Alameda County within the Byron Airport’s referral area are compatible with the airport’s operations; and
- Policy 199: The County shall require that, where conflicts between a new use and the airport that could interfere with the airport’s operations are anticipated, the burden of mitigating the conflicts will be the responsibility of the new use.

Alameda County Measure D – Save Agriculture and Open Space Initiative

Alameda County residents approved “Measure D” in November 7, 2000 as a measure to restrict urban development and protect agricultural lands. Measure D modifies the East County Area Plan (ECAP) portion of the Alameda County General Plan. The measure states:

The purpose of this initiative is to preserve and enhance agriculture and agricultural lands, and to protect the natural qualities, the wildlife habitats, the watersheds and the beautiful open spaces of Alameda County from excessive, badly located and harmful development. The measure establishes a County Urban Growth Boundary, which will focus urban-type development in and near existing cities where it will be efficiently served by public facilities, thereby avoiding high costs to taxpayers and users as well as to the environment. The ordinance is designed to remove the County government from urban development outside the Growth Boundary.

The limitations this measure imposes on the amount and location of development aim at preventing excessive growth and curbing the juggernaut of urban sprawl. The Initiative will reduce traffic congestion, air and water pollution, loss of historic and scenic values and the blighting of existing city centers; and will help maintain a high quality of life in Alameda County.”(Measure D, November 2000)

Measure D redefined the “Large Parcel Agriculture” description for the ECAP from that which was originally adopted by the County Board of Supervisors in 1994. It now requires a 100 acre minimum parcel size. The measure also re-designated areas zoned as “Urban Reserve” in the ECAP to “Large Parcel Agriculture.” Measure D also amended portions of the ECAP text.

Alameda County Zoning Ordinance

The Alameda County Zoning Ordinance (Title 17 of the Alameda County General Code) establishes land use (zone) districts in the unincorporated area. In each specific land use district: land uses, dimensions for buildings, and open spaces are regulated for the purpose of implementing the general plan of the county, protecting existing development, encouraging beneficial new development, and preventing overcrowding and congestion.

The proposed project site is within an "A" (Agricultural) District (County of Alameda, 2001). Agricultural districts or A districts are established to promote agricultural and other nonurban uses, to conserve and protect existing agricultural uses, and to provide space for and encourage such uses in places where more intensive development is not desirable or necessary for the general welfare (County Zoning Ordinance, Section 17.06.010). Public utility buildings or uses, excluding such uses as a business office, storage garage, repair shop or corporation yard, would require a conditional use permit (Item J, County Zoning Ordinance Section 17.06.060).

Other Applicable County General Plans and Zoning Ordinances

Contra Costa County General Plan

A portion of the project's water supply pipelines lie within Contra Costa County on lands designated as "Agriculture" and "Public/Semi-Public." The Contra Costa County General Plan (1995 – 2010), adopted in 1996, expresses the broad goals and policies, and specific implementation measures, which guide the County's decisions on future growth, development, and conservation of resources through the year 2010. In addition to the seven mandatory elements prescribed by the State, the Contra Costa County General Plan includes a Growth Management Element and a Public Facilities/Services Element. Applicable goals and policies include:

- Privately owned utility corridors may be created on lands designated as Public/Semi-Public (Section 3.7.a – Public and Semi-Public) and are also allowed within agriculturally designated lands.
- Lands designated as agriculture shall not exclude or limit types of agriculture, open space, or non-urban uses (Section 3.7.b – Agriculture) (County of Contra Costa, 1996).

Contra Costa County Zoning Ordinance

The Contra Costa County zoning ordinance (Title 8 of the Contra Costa County General Code) establishes zoning districts and contains regulations governing the use of land and improvement of real property within zoning districts. The Zoning Ordinance implements the land use policies of the Contra Costa County General Plan (County of Contra Costa, 2000).

San Joaquin County General Plan

The objectives of the San Joaquin County General Plan are intended to protect agricultural lands for the continuation of commercial agricultural enterprises, small-scale

farming operations, and the preservation of open space. The plan also identifies and classifies agricultural lands with small-scale farming operations and dwellings and seeks to minimize impacts to agriculture from urban development. The County implements its agricultural policies through participation in the FMMP and use of this information in the project planning and approval process (County of San Joaquin, 1995a). Approximately 1.5 miles of the recycled water line lie within the county's Agriculture-Urban Reserve designation and within the Mountain House Specific Plan (EAEC, 2002).

San Joaquin County lands within a 6-mile radius of the project site include lands designated as general agriculture, residential, commercial, public, and parks. Within a 1-mile radius of the project site, San Joaquin County lands are comprised of areas designated as residential and commercial.

Resolution Opposing the Proposed Construction of a Major Power Plant on the Border of San Joaquin County/Alameda County Line

Resolution R-01-406, passed and adopted June 26, 2001, by the San Joaquin County Board of Supervisors, states the Board's opposition to the construction and operation of the East Altamont Energy Center until San Joaquin County's concerns have been addressed or impacts to San Joaquin County are mitigated.

San Joaquin County Development Title

The San Joaquin County zoning ordinance (Title 9 of the San Joaquin County General Code) establishes zoning districts and contains regulations governing the use of land and improvement of real property within zoning districts. The Development Title implements the land use policies of the San Joaquin County General Plan (County of San Joaquin, 1995b). Portions of the recycled water pipeline are located in the County's Agriculture-Urban Reserve 20 (AU-20) zone (EAEC, 2002).

Mountain House Master Plan

The Mountain House Master Plan follows state guidelines for Specific Plans, though it is called the Master Plan to distinguish it from Specific Plans for smaller areas within the Mountain House community. The Mountain House Master Plan implements the amendment to the San Joaquin County 2010 General Plan, which added the Mountain House community to the General Plan. The Master Plan presents plans for land use, infrastructure, environmental resources, public service provisions, objectives, policies, and implementation measures. The Mountain House community is located approximately 8 miles to the north of the proposed project site (County of San Joaquin, 2000). Approximately 0.5 miles of the recycled water line runs alongside Mountain House areas zoned for General Industrial and Public Facilities (EAEC, 2002).

NOISE AND VIBRATION

FEDERAL

Under the Occupational Safety and Health Act of 1970 (OSHA) (29 U.S.C. § 651 et seq.), the Department of Labor, Occupational Safety and Health Administration (OSHA) has adopted regulations (29 C.F.R. § 1910.95) designed to protect workers against the effects of occupational noise exposure. These regulations list permissible noise exposure levels as a function of the amount of time to which the worker is exposed (see **Noise: Appendix A, Table A4** immediately following this section). The regulations further specify a hearing conservation program that involves monitoring the noise to which workers are exposed, assuring that workers are made aware of the effects of overexposure to noise, and periodically testing the workers' hearing to detect any degradation.

There are no federal laws governing off-site (community) noise.

The Federal Transit Administration (FTA) has published guidelines for assessing the impacts of ground-borne vibration associated with construction of rail projects, which have been applied by other jurisdictions to other types of projects. The FTA-recommended vibration standards are expressed in terms of the "vibration level," which is calculated from the peak particle velocity measured from ground-borne vibration. The FTA measure of the threshold of perception is 65 VdB, which correlates to a peak particle velocity of about 0.002 inches per second (in/sec). The FTA measure of the threshold of architectural damage for conventional sensitive structures is 100 VdB, which correlates to a peak particle velocity of about 0.2 in/sec.

STATE

California Government Code Section 65302(f) encourages each local governmental entity to perform noise studies and implement a noise element as part of its General Plan. In addition, the California Office of Planning and Research has published guidelines for preparing noise elements, which include recommendations for evaluating the compatibility of various land uses as a function of community noise exposure.

The State of California, Office of Noise Control, prepared a Model Community Noise Control Ordinance, which provides guidance for acceptable noise levels in the absence of local noise standards. The Model also contains a definition of a simple tone, or "pure tone," in terms of one-third octave band sound pressure levels that can be used to determine whether a noise source contains annoying tonal components. The Model Community Noise Control Ordinance further recommends that, when a pure tone is present, the applicable noise standard should be lowered (made more stringent) by 5 dBA.

Other State LORS include the California Environmental Quality Act (CEQA) and the California Occupational Safety and Health Administration (Cal-OSHA) regulations.

Noise: Table 1
Land Use Compatibility for Community Noise Environment

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE - Ldn or CNEL (db)													
	50		55		60		65		70		75		80	
Residential - Low Density Single Family, Duplex, Mobile Home														
Residential - Multi-Family														
Transient Lodging – Motel, Hotel														
Schools, Libraries, Churches, Hospitals, Nursing Homes														
Auditorium, Concert Hall, Amphitheaters														
Sports Arena, Outdoor Spectator Sports														
Playgrounds, Neighborhood Parks														
Golf Courses, Riding Stables, Water Recreation, Cemeteries														
Office Buildings, Business Commercial and Professional														
Industrial, Manufacturing, Utilities, Agriculture														

	Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
	Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design.
	Normally Unacceptable	New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.
	Clearly Unacceptable	New construction or development generally should not be undertaken.

Source: State of California General Plan Guidelines, Office of Planning and Research, June 1990.

California Environmental Quality Act

CEQA requires that significant environmental impacts be identified, and that such impacts be eliminated or mitigated to the extent feasible. Section XI of Appendix G of CEQA Guidelines (Cal. Code Regs., tit. 14, App. G) sets forth some characteristics that may signify a potentially significant impact. Specifically, a significant effect from noise may exist if a project would result in:

a) exposure of persons to, or generation of, noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies;

b) exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;

c) a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or

d) a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

The Energy Commission staff, in applying item c) above to the analysis of this and other projects, has concluded that a potential for a significant noise impact exists where the noise of the project plus the background exceeds the background by 5 dBA L_{90} or more at the nearest sensitive receptor.

Staff considers it reasonable to assume that an increase in background noise levels up to 5 dBA in a rural setting is insignificant; an increase of more than 10 dBA is clearly significant. An increase between 5 and 10 dBA should be considered adverse, but may be either significant or insignificant, depending on the particular circumstances of a case.

Factors to be considered in determining the significance of an adverse impact as defined above include:

1. the resulting noise level[1];
2. the duration and frequency of the noise;
3. the number of people affected;
4. the land use designation of the affected receptor sites;
5. public concern; and
6. prior CEQA determinations by other agencies specific to the project.

Noise due to construction activities is usually considered to be insignificant in terms of CEQA compliance if:

the construction activity is temporary;

use of heavy equipment and noisy activities is limited to daytime hours; and

all industry-standard noise abatement measures are implemented for noise-producing equipment.

[1] For example, a noise level of 40 dBA would be considered quiet in many locations. A noise limit of 40 dBA would be consistent with the recommendations of the California Model Community Noise Control Ordinance for rural environments, and with the data supporting the noise guidelines of the World Health Organization. If the project would create an increase in ambient noise no greater than 10 dBA at nearby sensitive receptors, and the resulting noise level would be 40 dBA or less, the project noise level would likely be insignificant.

Cal-OSHA

Cal-OSHA has promulgated Occupational Noise Exposure Regulations (Cal. Code Regs., tit. 8, §§ 5095-5099) that set employee noise exposure limits. These standards are equivalent to the federal OSHA standards.

LOCAL

Alameda County General Plan Noise Element

The Noise Element of the Alameda County General Plan contains provisions and policies that are intended to minimize noise impacts to the community. The Noise Element refers to an exterior CNEL of 60 dB as being acceptable in residential areas without additional sound insulation.

Alameda County General Ordinance Code

Alameda County has adopted specific noise standards for stationary sources in Title 6, Chapter 6.60 of the General Ordinance Code. The noise levels considered acceptable for any single- or multi-family residential, school, hospital, church, public library or commercial properties are described by **Noise: Table 2**.

Noise: Table 2
Alameda County Noise Standards

Noise Level Descriptor	Daytime Standard, dBA (7 a.m. to 10 p.m.)	Nighttime Standard, dBA (10 p.m. to 7 a.m.)
Median Level (L50)	50	45
Maximum Level	70	65

Each of the above standards is reduced by 5 dBA when applied to simple tone noise, noise consisting primarily of music or speech, or recurring impulsive noise.

Construction noise is exempt from the above noise standards between the hours of 7:00 a.m. to 7:00 p.m. on weekdays, and 8:00 a.m. to 5:00 p.m. on weekends.

Alameda County East County Area Plan Policies

Policies 265, 266 and 267 of the Alameda County East County Area Plan require the County to endeavor to maintain acceptable noise levels throughout the eastern part of the county. A noise level of 60 dBA is considered acceptable. The policies also require an acoustical analysis for a project that may result in noise effects.

Contra Costa County General Plan Noise Element

The Noise Element of the Contra Costa County General Plan contains provisions and policies that are intended to minimize noise impacts to the community. The Noise Element exterior noise standard for residential areas is 60 dB DNL.

San Joaquin County Code

Section 9-1025.9 (b) (1) of the San Joaquin County Code regulates noise from stationary sources. The noise standards that apply to steady-state stationary sources affecting noise sensitive uses are the same as in **Noise: Table 2**, though expressed in terms of the L_{eq}.

Section 9-1025.9 (c) (3) of the San Joaquin County Code exempts construction noise from County noise standards during the hours of 6:00 a.m. to 9:00 p.m. Section 9-1025.9 (c) (7) exempts noise associated with modifications of private and public utilities for maintenance or modifications to their facilities.

PUBLIC HEALTH

FEDERAL

The Clean Air Act of 1970 (42 U.S.C., section 7401 et seq.)

This section of the act required establishment of the previously noted ambient air quality standards necessary to protect the public against effects in humans and the general environment. These standards were established by the United States Environmental Protection Agency (EPA) for the major criteria pollutants: nitrogen oxides (NOx), ozone, sulfur dioxide, carbon monoxide, sulfates, lead, and particulate matter with a diameter of 10 micron or less (PM10).

The Clean Air Act of 1970 (42 U.S.C., section 7412)

This section requires new sources, which emit more than 10 tons per year of air toxics or any combination of air toxics, to apply the Maximum Achievable Control Technology (MACT).

STATE

California Health and Safety Code section 39606

This section of the code requires the California Air Resources Board (ARB) to establish California's ambient air quality standards to reflect the California-specific conditions influencing its air quality. Such standards have been established by the ARB for ozone, carbon monoxide, sulfur dioxide, PM10, lead, hydrogen sulfide, vinyl chloride and nitrogen dioxide. The California standards are listed together with the corresponding federal standards in the **Air Quality** section.

California Health and Safety Code section 41700

This section of the code states that "[n]o person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause or have a natural tendency to cause injury or damage business or property."

California Health and Safety Code section 39650 et seq.

This section of the code mandates that the California Environmental Protection Agency (Cal-EPA) establish safe exposure limits for toxic, non-criteria air pollutants and identify the best available methods for controlling their emission. These laws also require that the new source review rules for each Air District include regulations establishing procedures for controlling the emission of these pollutants. The toxic emissions from natural gas combustion are listed in ARB's Toxic Emissions Factors (CATEF) database for natural gas-fired combustion turbines to allow for uniform assessment as emitted from combustion and non-combustion sources in the state. Cal-EPA has developed specific cancer potency estimates for assessing any cancer risk that these air toxics may pose at specific exposure levels. For toxic air pollutants that do not cause cancer,

Cal-EPA established specific no-effects levels (known as reference exposure levels or RELs) for assessing the likelihood of producing health effects at specific exposure levels. Such health effects would be considered significant only when exposure exceeds these reference levels. Staff uses these Cal-EPA potency estimates and reference exposure values in its health risk analyses.

HEALTH AND SAFETY CODE SECTION 44300 ET SEQ.

This section of the code requires facilities, which emit large quantities of criteria pollutants and any amount of non-criteria pollutants to provide the local air district an inventory of toxic emissions. Operators of such facilities may also be required to prepare a quantitative health risk assessment to address the potential health risks involved. The ARB ensures statewide implementation of these requirements through the state's Air Districts.

LOCAL

Bay Area Air Quality Management District Rule 2-1-316

This rule specifies the procedures necessary to minimize the emission of air toxics from specific sources as required by the Health and Safety Code section 44300.

Bay Area Air Quality Management District Regulation 1, Section 301, "Public Nuisance" (Amended 10/98).

Requirements of this regulation allow for implementation of the emission control measures necessary for compliance with provisions of the Health and Safety Code, section 41700.

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 ordinances apply to power plant efficiency.

POWER PLANT RELIABILITY

Presently, there are no laws, ordinances, regulations or standards (LORS) that establish either power plant reliability criteria or procedures for attaining reliable operation. However, the commission must make findings as to the manner in which the project is to be designed, sited and operated to ensure safe and reliable operation [Cal. Code Regs., tit. 20, § 1752(c)].

SOCIOECONOMICS

FEDERAL

Executive Order 12898

"Federal Actions to address Environmental Justice (EJ) in Minority Populations and Low-Income Populations," provides that each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority and low income populations and Indian tribes. The order requires the U.S. Environmental Protection Agency (USEPA) and all other federal agencies to develop strategies to address this issue. The Council on Environmental Quality (CEQ) has oversight of the Federal government's compliance with Executive Order 12898 and the National Environmental Policy Act (NEPA). Implementation guidance for EJ under NEPA has been developed by the CEQ, dated December 10, 1997. Although this executive order does not directly apply to the Energy Commission, it provides guidance in assessing EJ issues for the state and does apply to the Western Area Power Administration (Western).

Civil Rights Act of 1964, Public Law 88-352, 78 Stat.241

(Codified as amended in scattered sections of 42 U.S.C.) Title VI of the Civil Rights Act prohibits discrimination on the basis of race, color, or national origin in all programs or activities receiving federal financial assistance.

STATE

Title 14 California Code of Regulations, section 15131-CEQA Guidelines

Economic or social effects of a project shall not be treated as significant effects on the environment, however, economic or social factors of a project may be used to determine the significance of physical changes caused by the project. In addition, 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 potentially significant effects on the environment.

California Government Code, Sections 65995-65997

SB 50 and other statutory amendments enacted in 1998 provide that, notwithstanding any other provisions of local or state law (including CEQA), state and local agencies may not require mitigation for the development of real property for effects on school enrollment except as provided by Government Code Section 65996(a). The relevant provisions restrict fees for the development of commercial and industrial space to approximately $0.33 per square foot of "chargeable covered and enclosed space." (Govt. Code §65995(b)(2))

LOCAL

East Alameda County Area Plan- Economic Development and Utilities

Policy 50: The County shall encourage a diversity of job producing industries that reflect the skills of the local labor force to locate in the East County area.

Policy 262: The County shall facilitate the provision of adequate gas and electric service and facilities to serve existing and future needs while minimizing noise, electromagnetic, and visual impacts on existing and future residents.

SOIL AND WATER RESOURCES

FEDERAL

Clean Water Act (CWA)

The Clean Water Act (33 U.S.C. Section 1251 et seq.) was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES). In California, NPDES permitting authority is delegated to, and administered by, the nine Regional Water Quality Control Boards (RWQCB).

Section 401 of the Clean Water Act requires that any activity that may result in a discharge into a water body must be certified by the RWQCB. This would apply to stream crossings during pipeline construction. This certification ensures that the proposed activity will not violate state and federal water quality standards.

Section 404 of the Clean Water Act authorizes the U.S. Army Corps of Engineers (ACOE) to regulate the discharge of dredged or fill material within the waters of the U.S. and adjacent wetlands. The ACOE issues individual site-specific or general (nationwide) permits for such discharges.

Encroachment Permit from USBR and the San Luis Delta-Mendota Water Authority

In order to accommodate directional drilling for routing the fresh water supply pipeline under the Delta-Mendota Canal, the Applicant will need to obtain an Encroachment Permit from the United States Bureau of Reclamation (USBR) and Delta-Mendota Water Authority. The USBR manages the Delta-Mendota Canal as a component of the Central Valley Project (CVP), and is responsible to review and approve plans that could potentially impact the integrity of the canal.

STATE

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1967, Water Code Section 13000 et seq., requires the State Water Resources Control Board (SWRCB) and the nine RWQCBs to adopt water quality criteria to protect state waters. Those criteria include the identification of beneficial uses, narrative and numerical water quality standards and implementation procedures. Water quality criteria for the project area are contained in the Water Quality Control Plan for the Central Valley Region. This plan sets numerical and/or narrative water quality standards controlling the discharge of wastes to the state's waters and land. Those standards are applied to the proposed project through the Waste Discharge Requirements (WDRs) permit issued by the RWQCB.

Water Supply Permit

Under Title 22 of the California Code of Regulations, the California Department of Health Services reviews and approves any surface water treatment systems that serve the domestic water needs of more than 25 people daily, 60 days out of the year. This program is administered through the Drinking Water Program.

LOCAL

County of Alameda

The EAEC and portions of the proposed water and recycled water lines are located in Alameda County. The Energy Commission will require a Grading and Excavation Permit consistent with the requirements of Alameda County Public Works Agency.

County of Contra Costa

Proposed fresh water lines on the northern portion of Bruns Road and Byron Bethany Road are located in Contra Costa County. The Energy Commission will require a Grading and Excavation Permit consistent with the requirements of Contra Costa County Public Works Department.

County of San Joaquin

Proposed recycled water lines on the east end of Kelso Road are located in San Joaquin County. The Energy Commission will require a Grading and Excavation Permit consistent with the requirements of San Joaquin County Community Development Department.

TRAFFIC AND TRANSPORTATION

Federal, state, and local regulations that are applicable to the proposed project are listed below. Included are regulations related to the transportation of hazardous materials, which are designed to control and mitigate for potential impacts.

FEDERAL

- Title 49, Code of Federal Regulations, Sections 171-177, governs the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of the transportation vehicles.
- Title 49, Code of Federal Regulations, Sections 350-399, and Appendices A-G, Federal Motor Carrier Safety Regulations, address safety considerations for the transport of goods, materials, and substances over public highways.

STATE

California Vehicle Code

- Section 353 defines hazardous materials. Sections 31303-31309 regulate the highway transportation of hazardous materials, the routes used, and restrictions thereon.
- Sections 31600-31620 regulate the transportation of explosive materials.
- Sections 32000-32053 regulate the licensing of carriers of hazardous materials and include noticing requirements.
- Sections 32100-32109 establish special requirements for the transportation of substances presenting inhalation hazards and poisonous gases.
- Sections 34000-34121 establish special requirements for the transportation of flammable and combustible liquids over public roads and highways.
- Sections 34500, 34501, 34501.2, 34501.3, 34501.4, 34501.10, 34505.5-7, 34506, 34507.5 and 34510-11 regulate the safe operation of vehicles, including those that are used for the transportation of hazardous materials.
- Section 25160 et seq. addresses the safe transport of hazardous materials.
- Sections 2500-2505 authorize the issuance of licenses by the Commissioner of the California Highway Patrol for the transportation of hazardous materials including explosives.
- Sections 13369, 15275, and 15278 address the licensing of drivers and the classifications of licenses required for the operation of particular types of vehicles. In addition, the possession of certificates permitting the operation of vehicles transporting hazardous materials is required.

- California Streets and Highways Code, Sections 117 and 660-72, and California Vehicle Code, Section 35780 et seq., require permits for the transportation of oversized loads on county roads.
- California Street and Highways Code, Sections 660, 670, 1450, 1460 et seq., 1470, and 1480, regulate right-of-way encroachment and the granting of permits for encroachments on state and county roads.
- All construction within the public right-of-way will need to comply with the “Manual of Traffic Controls for Construction and Maintenance of Work Zones” (Caltrans, 1996).

Local

ALAMEDA COUNTY

The East County Area Plan, a portion of the Alameda County General Plan, Volume 1, sets forth goals, policies, and implementation programs related to traffic issues in the County. These goals include minimum level of service (LOS) standards for local intersections. The County requires all new development projects to analyze their contribution to increased traffic and to implement improvements necessary to address the increase. According to the County's East Area Plan, the minimum desirable level of service is LOS D during peak commute times. However, LOS E may be acceptable when Deficiency Plans for affected roadways are prepared in conjunction with the Alameda County Congestion Management Agency.

SAN JOAQUIN COUNTY

The San Joaquin County General Plan is the County’s official position on development and resource management. The General Plan contains goals, objectives, policies, diagrams, and actions. The Plan's introductory section states that " it is a commitment to a course of action that will lead, through the years, toward a desirable physical, social, and economic environment for existing and future generations." All development must be consistent with the General Plan.

The Development Title implements the General Plan. It contains specific information on zoning and development application requirements, as well as standards and regulations relating to such issues as infrastructure, natural resources, signs, setbacks, lot and yard requirements, and use types. The following transportation policies are applicable to this project:

Development Title Policy:

- Policy 1. The County shall plan for a road system of adequate capacity and design to provide reasonable and safe access by vehicles with minimum delay.

Transportation Coordination with Land Use Policies:

- Policy 1. The transportation system shall support the attainment of desired land use patterns.
- Policy 2. Transportation improvements shall be scheduled to coordinate with land use development and transportation demand.

- Policy 3. Transportation needs and access shall be considered when locating land uses.

CITY OF TRACY

The City of Tracy General Plan Urban Management Plan presents goals and policies that coordinate the transportation and circulation system with planned land uses, and promote the efficient movement of people, goods, and services within the Urban Management Planning area. The following transportation policies are applicable to this project:

- Policy Actions CI 1.2.3 Coordinate transportation planning efforts with those of adjoining jurisdictions, including San Joaquin County, the cities of Lathrop and Manteca, and Alameda and Stanislaus Counties.
- Policy Actions CI 2.2.2 Encourage City and County cooperation to establish a plan line program to preserve rights-of-way to accommodate the 2010 Land Use Plan and in anticipation of expanded urban development.

TRANSMISSION LINE SAFETY AND NUISANCE

Discussed below by subject area are design-related LORS applicable to the physical impacts of the overhead transmission lines as proposed for EAEC. The potential for these impacts is assessed in terms of compliance with specific federal or state regulations or established industry standards and practices. There presently are no local laws or regulations specifically aimed at the physical structure or dimensions of electric power lines to limit the impacts noted above. However, many local jurisdictions require distribution lines to be located underground because of the potential for visual impacts on the landscape.

AVIATION SAFETY

Any potential hazard to area aircraft would relate to the potential for collision in the navigable air space. The applicable federal LORS as discussed below are intended to ensure the distance and visibility necessary to prevent such collisions.

Federal

- Title 14, Part 77 of the Code of Federal Regulations (CFR), "Objects Affecting the Navigation Space." Provisions of these regulations specify the criteria used by the Federal Aviation Administration (FAA) for determining whether a "Notice of Proposed Construction or Alteration" is required for potential obstruction hazards. The need for such a notice depends on factors related to the height of the structure, the slope of an imaginary surface from the end of nearby runways to the top of the structure, and the length of the runway involved. Such notification allows the FAA to ensure that the structure is located to avoid the aviation hazards of concern.
- FAA Advisory Circular (AC) No. 70/460-2H, "Proposed Construction and or Alteration of Objects that May Affect the Navigation Space." This circular informs each proponent of a project that could pose an aviation hazard of the need to file the "Notice of Proposed Construction or Alteration" (Form 7640) with the FAA.
- FAA AC No. 70/460-1G, "Obstruction Marking and Lighting." This circular describes the FAA standards for marking and lighting objects that may pose a navigation hazard as established using the criteria in Title 14, Part 77 of the CFR.

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. Since electric fields are unable to penetrate most materials, including the soil, such interference and other electric field effects are not associated with underground lines. The level of any such interference usually depends on the magnitude of the electric fields involved. Because of this, the potential for such impacts could be assessed from field strength estimates obtained for 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 itself as perceivable interference with radio or television signal reception or interference with other forms of radio communication. Since the level of interference depends on factors such as line voltage, distance from the line to the receiving device, orientation of the antenna, signal level, line configuration and weather conditions, maximum interference levels are not specified as design criteria for modern transmission lines. The FCC requires each line operator to mitigate all complaints about interference on a case-specific basis.

State

- General Order 52 (GO-52), California Public Utilities Commission (CPUC). Provisions of this order govern the construction and operation of power and communications lines and specifically deal with measures to prevent or mitigate inductive interference. Such interference is produced by the electric field induced by the line in the antenna of a radio signal receiver.

Several design and maintenance options are available for minimizing these electric field-related impacts. When incorporated into the line design and operation, such measures also serve to reduce the line-related audible noise discussed below.

AUDIBLE NOISE

Industry Standards

There are no design-specific federal regulations to limit the audible noise from transmission lines. As with radio noise, such noise is limited instead through design, construction or maintenance practices established from industry research and experience as effective without significant impacts on line safety, efficiency maintainability and reliability. All modern overhead high-voltage lines are designed to assure compliance. As with radio-frequency noise, such audible noise usually results from the action of the electric field at the surface of the line conductor and could be perceived as a characteristic crackling, frying or hissing sound or hum, especially in wet weather. Since the noise level depends on the strength of the line electric field, the potential for perception can be assessed from estimates of the field strengths expected during operation. Such noise is usually generated during rainfall, but mainly from overhead lines of 345 kV or higher. It is, therefore, not generally expected at significant levels from those of less than 345 kV such as the ones proposed for EAEC. Research by the Electric Power Research Institute (EPRI 1982) has validated this by showing the

fair-weather audible noise from modern transmission lines to be generally indistinguishable from background noise at the edge of a 100-ft right-of-way.

NUISANCE SHOCKS

Industry Standards

There are no design-specific federal regulations to limit nuisance shocks in the transmission line environment. For modern overhead high-voltage lines, such shocks are effectively minimized through grounding procedures specified in the National Electrical Safety Code (NESC) and the joint guidelines of the American National Standards Institute (ANSI) and the Institute of Electrical and Electronics Engineers (IEEE). Nuisance shocks are caused by current flow at levels generally incapable of causing significant physiological harm. They result mostly from direct contact with metal objects electrically charged by fields from the energized line. Such electric charges are induced in different ways by the line electric and magnetic fields. As with the proposed overhead lines, the applicant in consultation with Western will be responsible in all cases for ensuring compliance with these grounding-related practices within the right-of-way.

FIRE HAZARDS

The fire hazards addressed through the following regulations are those that could be caused by sparks from conductors of overhead lines, or that could result from direct contact between the line and nearby trees and other combustible objects.

State

- General Order 95 (GO-95), CPUC, “Rules for Overhead Electric Line Construction” specifies tree-trimming criteria to minimize the potential for power line-related fires.

- Title 14 Section 1250 of the California Code of Regulations: “Fire Prevention Standards for Electric Utilities” specifies utility-related measures for fire prevention.

HAZARDOUS SHOCKS

The hazardous shocks addressed by the following regulations and standards are those that could result from direct or indirect contact between an individual and the energized line whether overhead or underground. Such shocks are capable of serious physiological harm or death and remain a driving force in the design and operation of transmission and other high-voltage lines.

State

- GO-95, CPUC. “Rules for Overhead Line Construction”. These rules specify uniform statewide requirements for overhead line construction regarding ground clearance, grounding, maintenance and inspection. Implementing these requirements ensures the safety of the general public and line workers.
- Title 8, California Code of Regulations, section 2700 et seq., Sections 2700 through 2974. “High Voltage Electric Safety Orders”. These safety orders

establish essential requirements and minimum standards for safely installing, operating, working around, and maintaining electrical installations and equipment

Local

There are no shock hazard-related requirements on the physical dimensions of power lines at the local level.

Industrial Standards

No design-specific federal regulations have been established to prevent hazardous shocks from overhead power lines. Safety is assured within the industry from compliance with the requirements in the National Electrical Safety Code, Part 2: Safety Rules for Overhead Lines. These provisions specify the minimum national safe operating clearances applicable in areas where the line might be accessible to the public. They are intended to minimize the potential for direct or indirect contact with the energized line.

ELECTRIC AND MAGNETIC FIELD (EMF) EXPOSURE

The possibility of deleterious health effects from electric and magnetic field exposure has increased public concern in recent years about living near high-voltage lines. Both fields occur together whenever electricity flows, hence the general practice of describing exposure to them together as EMF exposure. The available evidence as evaluated by CPUC, other regulatory agencies, and staff, has not established that such fields pose a significant health hazard to exposed humans. However, 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.

While there is considerable uncertainty about the EMF/health effects issue, the following facts have been established from the available information and have been used to establish existing policies:

- Any exposure-related health risk to the exposed individual will likely be small.
- The most biologically significant types of exposures have not been established.
- Most health concerns are about the magnetic field.
- The measures employed for such field reduction can affect line safety, reliability, efficiency and maintainability, depending on the type and extent of such measures.

State

In California, the CPUC (which regulates the installation and operation of high-voltage lines in California) has determined that only no-cost or low-cost measures are presently justified in any effort to reduce power line fields beyond levels existing before the present health concern arose. The CPUC has further determined that such reduction should be made only in connection with new or modified lines. It required each utility within its jurisdiction to establish EMF-reducing measures and incorporate such measures into the designs 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 1993.

In keeping with this CPUC policy, the CEC requires evidence that each proposed overhead 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. Therefore, it is up to each applicant to ensure that such measures are applied to avoid significant impacts on line operation and safety. The extent of such applications would be reflected by the ground-level field strengths as measured during operation. When estimated or measured for lines of similar voltage and current-carrying capacity, such field strength values can be used by staff and other regulatory agencies to assess each lines for effectiveness at field strength reduction. These field strengths can be estimated for any given design using established procedures. Estimates are specified for a height of one meter above the ground, in units of kilovolts per meter (kV/m), for the electric field, and milligauss (mG) for the companion magnetic field. Their magnitude depends on line voltage (in the case of electric fields), the geometry of the 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, its fields are required under existing CPUC policies to be similar to fields from similar lines in that service area. As a Federal entity, Western transmission lines do not come under CPUC jurisdiction, however, Western lines are designed in accordance with EMF reducing guidelines.

Industrial Standards

There are no health-based federal regulations or industry codes specifying environmental limits on the strengths of fields from power lines. However, the federal government continues to conduct and encourage research necessary for an appropriate policy on the EMF health issue.

In the face of the present uncertainty, several states have opted for design-driven regulations ensuring that fields from new lines are generally similar to those from existing lines. Some states (Florida, Minnesota, New Jersey, New York, Montana) have set specific environmental limits on one or both fields in this regard. These limits are, however, not based on any specific health effects. Most regulatory agencies believe that health-based limits are inappropriate at this time and that the present knowledge of the issue does not justify any retrofit of existing lines.

Before the present health-based concern developed, measures to reduce field effects from power line operations were mostly aimed at the electric field component whose effects can manifest themselves as the previously noted radio noise, audible noise and nuisance shocks. The present focus is on the magnetic field because only it can penetrate the soil, building and other materials to potentially produce the types of health impacts at the root of the present concern. As one focuses on the strong magnetic

fields from the more visible overhead transmission and other high-voltage power lines, the CEC 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. Such exposure differences only to show that high-level magnetic field exposures regularly occur in areas other than around high-voltage power lines.

TRANSMISSION SYSTEM ENGINEERING

- California Public Utilities Commission (CPUC) General Order 95 (GO-95), "Rules for Overhead Electric Line Construction," formulates uniform requirements for construction of overhead and underground lines. Compliance with these orders ensures adequate service and safety to persons engaged in the construction, maintenance and operation or use of overhead electric lines and to the public in general.
- California Public Utilities Commission (CPUC) General Order 128(GO-128), "Rules for Construction of Underground Electric Supply and Communications Systems," formulates uniform requirements and minimum standards to be used for underground supply systems to ensure adequate service and safety to persons engaged in the construction, maintenance and operation or use of underground electric lines and to the public in general.
- Western "General Requirements for Interconnection," September 1999, provides Western's general minimum requirements including technical, environmental and contractual requirements for interconnection, additions and modifications to Western's transmission facilities.
- The National Electric Safety Code, 1999 provides electrical, mechanical, civil and structural requirements for overhead electric line construction and operation.
- The North American Electric Reliability Council (NERC) and Western Systems Coordinating Council (WSCC) Planning Standards were merged. The combined Planning Standards are now referred to as the NERC/WSCC Planning Standards and provide the system performance standards used in assessing the reliability of the interconnected system. Certain aspects of the NERC/WSCC standards are either more stringent or more specific than the NERC standards. These standards provide guidance for planning electric systems so as to withstand the more probable forced and maintenance outage system contingencies at projected customer demand and anticipated electricity transfer levels, while continuing to operate reliably within equipment and electric system thermal, voltage and stability limits. These standards include the reliability criteria for system adequacy and security, system modeling data requirements, system protection and control, and system restoration. Analysis of the WSCC system is based to a large degree on Section I.A of the standards, "NERC and WSCC Planning Standards with Table I and WSCC Disturbance-Performance Table" and on Section I.D, "NERC and WSCC Standards for Voltage support and Reactive Power." These standards require that the results of power flow and stability simulations meet defined performance levels. Performance levels are defined by specifying the allowable variations in thermal loading, voltage and frequency, and loss of load that may occur on systems during various disturbances. Performance levels range from no significant adverse effects inside and outside a system area during a minor disturbance (loss of load or a single transmission element out of service) to levels designed to prevent system cascading and the subsequent blackout of islanded areas during a major disturbance (such as loss of multiple 500 kV lines in a right of way and/or multiple generators). While controlled loss of generation or load or

system separation is permitted in certain circumstances, their uncontrolled loss is not permitted (WSCC 2001).

- NERC Planning Standards provide national policies, standards, principles and guidelines to assure the adequacy and security of the electric transmission system. The NERC planning standards provide for system performance levels under normal and contingency conditions. With regard to power flow and stability simulations, while these Planning Standards are similar to WSCC Standards, certain aspects of the WSCC standards are either more stringent or more specific than the NERC standards for Transmission System Contingency Performance. The NERC planning standards apply not only to interconnected system operation but also to individual service areas (NERC 1998).
- Cal-ISO Grid Planning Standards also provide standards, and guidelines to assure the adequacy, security and reliability in the planning of the Cal-ISO transmission grid facilities. The Cal-ISO Grid Planning Standards incorporate the WSCC and NERC Planning Standards. With regard to power flow and stability simulations, these Planning Standards are similar to WSCC and the NERC Planning Standards for Transmission System Contingency Performance. However, the Cal-ISO Standards also provide some additional requirements that are not found in the WSCC or NERC Planning Standards. The Cal-ISO Standards apply to all participating transmission owners interconnecting to the Cal-ISO controlled grid. It also applies when there are any impacts to the Cal-ISO grid due to facilities interconnecting to adjacent controlled grids not operated by the Cal-ISO (Cal-ISO 2002a).

VISUAL RESOURCES

FEDERAL

The proposed project is located on private land. Therefore, the project is not subject to federal regulations pertaining to visual resources.

STATE

In the project vicinity, Interstate 580 (I-580) has been designated eligible for State Scenic Highway status (Caltrans 2002). When a highway has been designated "scenic," the local jurisdiction is required to enact a scenic corridor protection program that protects and enhances scenic resources. A properly enforced program can mitigate the effects of uses that might otherwise detract from the scenic values of the corridor landscape. A corridor protection program would typically stipulate specific siting, landscaping, and screening requirements; as well as require appropriate structural characteristics and surface treatments to make new development more compatible with the existing environment.

LOCAL

The proposed generating facility site, two alternative transmission line alignments, and the gas line alternatives are located in unincorporated areas of Alameda County. The waterline alternatives are partially located in Alameda County and Contra Costa County while the recycled water alternatives are partially located in Alameda County, San Joaquin County, and Contra Costa County. Therefore, the proposed project would be subject to any local laws, ordinances, regulations, and standards (LORS) pertaining to the protection and maintenance of visual resources in Alameda, Contra Costa, and San Joaquin Counties. Each county's LORS apply to those portions of the project located in that particular county.

Sixteen applicable LORS from Alameda County are found in the Alameda County East County Area Plan, the Alameda County Scenic Route Element of the General Plan, and the Alameda County Zoning Ordinance. The Scenic Route Element of the Alameda County General Plan designates both Byron Bethany Road and Mountain House Road as scenic rural roads in the project area. Five sections of the San Joaquin County General Plan contain a total of seven visual resource related policies that are applicable to the proposed project. Four applicable policies from Contra Costa County are found in the Scenic Route section of the General Plan Transportation & Circulation Element. The relevant local LORS and an assessment of the project's LORS consistency are presented in a later section of this analysis.

LOCAL

VISUAL RESOURCES Table 4 provides a listing of the applicable LORS for the Counties of Alameda, San Joaquin, and Contra Costa. Twenty-seven LORS were found to pertain to the enhancement and/or maintenance of visual quality and the protection of views. Based on staff's analysis, it appears that the proposed project

would be consistent with nineteen of the local policies referenced in **Table 4**, partially consistent with one local LORS, and inconsistent with seven local LORS. In five cases of inconsistency or partial consistency, either the inconsistencies would not initially produce a significant visual impact, or full and effective implementation of staff's conditions of certification would ensure that the project complies with these LORS. In two cases of project inconsistency, the inconsistency constitutes a significant visual impact that cannot be mitigated.

VISUAL RESOURCES Table 4 Proposed Project's Consistency with Local LORS Applicable to Visual Resources			
Source	**Description of Principles, Objectives, and Policies**	**Determination of Consistency Before Mitigation/ Conditions**	**Basis for Determination**
Alameda County			
Alameda County East County Area Plan	Policy 111 requires that development maximize views of a number of specified "prominent visual features."	NO	The only features listed that are visible from the project area are Mount Diablo and Brushy Peak. For each of these features, there will be a short segment along Byron Bethany Road where the project and these distant landmarks would be in direct alignment. In views toward the west from these segments, the project would be seen in front of the landmark feature, blocking views to the feature. If the project were located farther south on the parcel, those views would not be blocked. Therefore, the project does not maximize views of those features. However, the view blockage would be relatively brief as motorists pass these points at high rates of speed. Therefore, the project's inconsistency with this policy would constitute an adverse but not significant visual impact.
Alameda County East County Area Plan	See above	Position of Alameda County Planning Department: YES	"The proposed project is consistent with Policy III. This policy is directed to shaping urban development to capitalize on views of scenic features which is not pertinent to EAEC. However, EAEC can be evaluated using a broader interpretation of Policy 111 based on the underlying goal the policy addresses – "To preserve unique visual resources and protect sensitive viewsheds." The far-distant views of Brushy Peak and Mount Diablo by passing northbound motorists on the Byron-Bethany may be briefly and partially obstructed by the proposed project, but these views by passing motorists are not within a "sensitive viewshed". Therefore, the proposed project is not inconsistent with the goal."
Alameda County East County Area Plan	Policy 113 requires the use of landscaping in both rural and urban areas to enhance the scenic quality of the area and to screen undesirable views. Choice of plants should be based on compatibility with surrounding vegetation, drought-tolerance, and suitability to site conditions; and in rural areas, habitat value and fire retardance.	YES	The project would be consistent with this policy in that the project would include landscaping around the periphery of the site (as originally proposed) to screen views of the project facilities. In developing its final landscape plan, the applicant would work with the County to ensure that the plant selections and planting designs meet the County's goals for habitat enhancement, drought tolerance, compatibility with surrounding vegetation, and fire retardance (EAEC 2001a, p. 8.11-25).

VISUAL RESOURCES Table 4 Proposed Project's Consistency with Local LORS Applicable to Visual Resources			
Source	**Description of Principles, Objectives, and Policies**	**Determination of Consistency Before Mitigation/ Conditions**	**Basis for Determination**
Alameda County East County Area Plan	Policy 117 requires that utility lines be placed underground whenever feasible. When located above ground, utility lines and supporting structures shall be sited to minimize their visual impact.	PARTIALLY	The 230 kV transmission interconnection would be built overhead rather than underground which is typical for the higher voltage transmission facilities such as that associated with the proposed project. However, in general, it is feasible to construct a 230 kV transmission line underground. Therefore, absent a feasibility study for the project site that demonstrates undergrounding the transmission line would not be feasible, the proposed project would be inconsistent with this aspect of Policy 117. Since, the proposed aboveground interconnection would be of short length (0.5 mile) and would be located in an area where transmission infrastructure is a prominent feature in the landscape, the location of the line would minimize the resulting visual impact, which would be adverse but not significant. The proposed project would be consistent with this aspect of Policy 117. Overall, the project impacts causing this partial inconsistency would not be significant.
Alameda County East County Area Plan	See above	Position of Alameda County Planning Department: YES	"The proposed project is consistent with Policy 117. The proposed 230 kV line is short (0.5 mile) and located In an area where transmission structure is already a prominent feature of the landscape. As explained in the Calpine application, the 'costs of undergrounding high voltage transmission lines… are very high.' Because of the requirements for expensive transition stations at each end of an underground line and for provisions for insulating and cooling the underground conductors, building high voltage lines underground generally costs about 7 times the cost of building them overhead. Given the very marginal aesthetic benefit that undergrounding the project transmission line would produce, it was determined that it would not be economically feasible or prudent to build the line underground." We believe this determination is reasonable in the geographic contest of many high-voltage transmission lines (PG&E, Western, MID, TID)."

VISUAL RESOURCES Table 4 Proposed Project's Consistency with Local LORS Applicable to Visual Resources			
Source	**Description of Principles, Objectives, and Policies**	**Determination of Consistency Before Mitigation/ Conditions**	**Basis for Determination**
Alameda County East County Area Plan	Policy 197 requires that the County manage development and conservation of land in East County scenic highway corridors to maintain and enhance scenic values.	NO	There will be two brief segments along Byron Bethany Road where the project would appear to pass in front of Mount Diablo and Bushy Peak as viewed by westbound motorists. Both of these features are notable regional landmarks that are visible from this county-designated scenic highway. However, this view blockage would be relatively brief as motorists pass these points at high rates of speed. Therefore, the project structures' inconsistency with this policy would constitute an adverse but not significant visual impact.
Alameda County East County Area Plan	See above	Position of Alameda County Planning Department: YES	"The proposed project is consistent with Policy 197. This policy is directed to the overall development and conservation of land to preserve and enhance views within scenic corridors, and is not intended as a prohibition of specific projects. Please refer to our comments regarding Policy 111, above. The brief, partial "blockage" of views by passing northbound motorists of distant geographic features does not diminish the goal to "preserve and enhance views within scenic corridors." (ECAP, p. 57) Similarly, occasional vapor plumes do not interfere with views or scenic values."

VISUAL RESOURCES Table 4 Proposed Project's Consistency with Local LORS Applicable to Visual Resources			
Source	**Description of Principles, Objectives, and Policies**	**Determination of Consistency Before Mitigation/ Conditions**	**Basis for Determination**
Alameda County East County Area Plan	Policy 264 states that new developments are to locate utility lines underground, whenever feasible.	NO	The 230 kV transmission interconnection is proposed to be built overhead rather than underground, which is typical for the higher voltage transmission facilities such as that associated with the proposed project. However, in general, it is feasible to construct a 230 kV transmission line underground, particularly for relatively short distances (such as the proposed 0.5-mile interconnection). Therefore, absent a feasibility study for the project site that demonstrates undergrounding the transmission line would not be feasible, the proposed project would be inconsistent with this aspect of Policy 264. Since the proposed aboveground interconnection would be of short length and would be located in an area where transmission infrastructure is a prominent feature in the landscape, the location of the line would minimize the resulting visual impact, which would be adverse but not significant. Therefore, the project's inconsistency with Policy 264 would not constitute a significant visual impact.
Alameda County East County Area Plan	See above	Position of Alameda County Planning Department: YES	"The proposed project is consistent with Policy 264. This policy is intended to apply to undergrounding of distribution lines by new residential and commercial developments. The policy is inapplicable to this project. Please also see our comments on Policy 117, above."
Alameda County General Plan Scenic Route Element Principles	Principle: Provide a continuous, convenient system of scenic routes. Principle: Establish efficient and attractive connecting links. Principle: Provide for unimpeded pleasure driving. Principle: Coordinate scenic routes and recreation areas. Principle: Guide and control preservation and development of scenic routes through legislative standards.	YES	The proposed project does not specifically impede the implementation of any of the referenced principles

VISUAL RESOURCES Table 4 Proposed Project's Consistency with Local LORS Applicable to Visual Resources			
Source	**Description of Principles, Objectives, and Policies**	**Determination of Consistency Before Mitigation/ Conditions**	**Basis for Determination**
Alameda County General Plan Scenic Route Element Principles	Principle: Provide for normal uses of land and protect against unsightly features.	NO	The proposed project site has historically been used for agriculture. The proposed project would discontinue the historical use and introduce prominent structures of substantial mass and industrial character. These project aspects would result in adverse and significant visual impacts, which would be inconsistent with this policy. Since the visual impacts resulting from project structures cannot be mitigated to levels that are not significant, the project's inconsistency with this policy would constitute a significant visual impact.
Alameda County General Plan Scenic Route Element Principles	See above	Position of Alameda County Planning Department: YES	"The proposed project is consistent with this policy. This policy is intended to allow "normally permitted uses"; it does not refer to "historical" uses, nor is it intended to limit uses to historical uses. The proposed project is a "normally permitted use". It is also incorrect to characterize the project or the vapor plumes as "unsightly features" merely because they are industrial features. "Unsightly features" as used in the plan, refers to "obtrusive signs, automobile wrecking and junk yards, and similar unsightly development or use of land."
Alameda County General Plan Scenic Route Element Principles	Principle: Locate transmission towers and lines outside of scenic route corridors	NO	The proposed project (including the transmission interconnection) would be located within the 1,000-foot wide Mountain House scenic corridor so it would not be consistent with this policy. However there is considerable existing utility and energy infrastructure within the adjacent scenic corridors, which establishes a technological and industrial character within the landscape. The visual impact resulting from the presence of the proposed transmission line interconnection would not be significant.
Alameda County General Plan Scenic Route Element Principles	See above	Position of Alameda County Planning Department: YES	"The proposed project is consistent with this policy. This policy states "New overhead transmission towers and lines should not be located within scenic corridors **when it is feasible to locate them elsewhere.**" In this instance, because of the location of the powerplant, and its relatively to the adjacent substation, it is not feasible to locate the transmission towers elsewhere."

VISUAL RESOURCES Table 4 Proposed Project's Consistency with Local LORS Applicable to Visual Resources			
Source	**Description of Principles, Objectives, and Policies**	**Determination of Consistency Before Mitigation/ Conditions**	**Basis for Determination**
Alameda County General Plan Scenic Route Element Principles	Principle: Establish architectural and site design review.	YES	The applicant has committed to working with the County of Alameda to ensure that various project design elements (landscaping, project heights, colors, and towers) meet County Goals (EAEC 2001a, p. 8.11-25).
Alameda County General Plan Scenic Route Element Principles	Principle: Use landscaping to increase scenic qualities of scenic route corridors.	NO	The proposed landscaping would not increase scenic quality compared to existing conditions and the residual visual impact would be adverse and significant. The proposed project's inconsistency with this policy would constitute a significant visual impact
Alameda County General Plan Scenic Route Element Principles	See above	Position of Alameda County Planning Department: YES	"The proposed project is consistent with this policy, because the landscaping will be "designed and maintained in scenic route corridors to provide added visual interest" and to screen views of the plant. The policy does not require landscaping to increase scenic quality compared to existing conditions."
Alameda County General Plan Scenic Route Element Principles	Principle: Landscape all properties and streets.	YES	The proposed project includes landscaping and vegetative screening.
Alameda County General Plan Scenic Route Element Principles	Principle: Encourage owners of large holdings to protect and enhance areas of scenic value.	NO	The proposed project site does not contain features of scenic value though as a large open parcel, it enables unobstructed views from adjacent roadways to the Coast Range hills to the west and south. There would be two brief segments along Byron Bethany Road where the project would appear to pass in front of Mount Diablo and Brushy Peak as viewed by westbound motorists. Both of these features are notable regional landmarks of scenic value that are visible from this county-designated scenic highway. However, this view blockage would be relatively brief because motorists pass these points at high rates of speed. Therefore, the project's inconsistency with this policy would constitute an adverse but not significant visual impact.
Alameda County General Plan Scenic Route Element Principles	See above	Position of Alameda County Planning Department: YES	"The proposed project site does not contain features of scenic value."
San Joaquin County			

VISUAL RESOURCES Table 4 Proposed Project's Consistency with Local LORS Applicable to Visual Resources			
Source	**Description of Principles, Objectives, and Policies**	**Determination of Consistency Before Mitigation/ Conditions**	**Basis for Determination**
San Joaquin County General Plan: Community Organization and Development Pattern	Objective: *To create a visually attractive county.* • Policy 11: Development should complement and blend in with its setting. • Policy 12: Aesthetics should be considered when reviewing development proposals.	YES YES	*Policy 11:* The proposed reclaimed water line would be underground and would not affect the existing landscape. The pump station associated with the reclaimed water line would be located adjacent to the future Mountain House Community Services District wastewater treatment plant and would appear consistent with that facility. *Policy 12:* The proposed project's potential impact on local and regional visual resources was considered in both the project proponent's application presented to the Commission and in staff's evaluation of the proposed project.
San Joaquin County General Plan: Public Facilities	Objective: *To protect diverse resources upon which recreation is based, such as waterways, marshlands, wildlife habitats, unique land and* ***scenic features****, and historical cultural sites.* • Policy 23: Scenic corridors along recreation travelways and scenic routes shall be protected from unsightly development	YES	The proposed reclaimed water line would be underground and would not adversely affect views from adjacent roads. The pump station associated with the reclaimed water line would be located adjacent to the future Mountain House Community Services District wastewater treatment plant and would appear consistent with that facility. Also, visual impacts resulting from project construction would be temporary and not significant.

VISUAL RESOURCES Table 4 Proposed Project's Consistency with Local LORS Applicable to Visual Resources			
Source	**Description of Principles, Objectives, and Policies**	**Determination of Consistency Before Mitigation/ Conditions**	**Basis for Determination**
San Joaquin County General Plan: Open Space	Objective: *To preserve open space land for the continuation of commercial agricultural and productive uses, the enjoyment of* ***scenic beauty*** *and recreation, the protection and use of natural resources, and for protection from natural hazards.* • Policy 11: Outstanding scenic vistas shall be preserved and public access provided to them whenever possible. • Policy 13: Development proposals along scenic routes shall not detract from the visual and recreational experience.	YES YES	*Policy 11:* Due to the underground nature of the proposed reclaimed water pipeline, there would be no adverse impact on any outstanding scenic vista. Also, the pump station associated with the reclaimed water line would be located adjacent to the future Mountain House Community Services District wastewater treatment plant and would not affect scenic vistas or access to scenic vistas. *Policy 13:* The temporary visual impact during construction of the underground pipeline would not significantly detract from the visual experience along adjacent roads and travelways. Longer-term, the pump station would be located at the future Mountain House Community Services District wastewater treatment plant and would not detract from visual and recreational experiences. The buried pipeline would not have a substantial aboveground presence and would not detract from the visual experience along adjacent roads.
San Joaquin County General Plan: Air Quality	Objective: *To protect public health, agricultural crops,* ***scenic resources****, and the built and natural environments from air pollution.* • Policy 1: San Joaquin County shall meet and maintain all State and national standards for air quality.	YES	The pump station and underground pipeline would not adversely affect existing State and national air quality standards and thus, would not adversely affect county scenic resources.

VISUAL RESOURCES Table 4 Proposed Project's Consistency with Local LORS Applicable to Visual Resources			
Source	**Description of Principles, Objectives, and Policies**	**Determination of Consistency Before Mitigation/ Conditions**	**Basis for Determination**
General Plan: Water Resources and Quality	Objective: *To recognize the surface waters of San Joaquin County as resources of State and national significance for which environmental and* ***scenic values*** *must be protected.* • No specific policy statements	YES	The pump station to be located at the future wastewater treatment plant and underground pipeline would not impact the scenic values of any surface waters.
Contra Costa County			
Contra Costa County General Plan, Transportation & Circulation Element, Scenic Routes	Policy 5-34: Scenic corridors shall be maintained with the intent of protecting attractive natural qualities adjacent to various roads throughout the county.	YES	The proposed project would include the construction of a reclaimed water pipeline and a water supply pipeline. The reclaimed water line would include a segment adjacent to Byron Highway in Contra Costa County, which is a county-designated scenic route. Water Supply Alternative 3A would be located adjacent to Byron Highway. Both pipelines would be underground facilities and would have no long-term visual impacts on the scenic route or scenic views from the highway. As a best management practice (BMP), the project would also include filter/silt barriers in close proximity to the highway. However, these facilities would not adversely affect scenic views from the highway.
	Policy 5-36: Scenic views observable from scenic routes shall be conserved, enhanced, and protected to the extent possible.	YES	See Policy 5-34 above.
Contra Costa County General Plan, Transportation & Circulation Element, Scenic Routes	Policy 5-42: Provide special protection for natural topographic features, aesthetic views, vistas, hills and prominent ridgelines at "gateway" sections of scenic routes.	YES	See Policy 5-34 above.
	Policy 5-43: Aesthetic design flexibility of development projects within a scenic corridor shall be encouraged.	YES	See Policy 5-34 above.

WASTE MANAGEMENT

FEDERAL

Resource Conservation and Recovery Act, RCRA, (42 U.S.C. § 6922)

RCRA establishes requirements for the management of hazardous wastes from the time of generation to the point of ultimate treatment or disposal. Section 6922 requires the generators of hazardous wastes to comply with rules regarding the following:

- Record keeping practices which identify the quantities and disposal of hazardous wastes generated;
- Labeling practices and use of appropriate containers;
- Use of a recording or manifest system for transportation; and
- Submission of periodic reports to the EPA or an authorized state agency.

Title 40, Code of Federal Regulations, section 260

These sections specify the regulations promulgated by the Environmental Protection Agency, or EPA, to implement the requirements of RCRA as described above. To facilitate such implementation, the defining characteristics of each hazardous waste are specified in terms of toxicity, ignitability, corrosivity, and reactivity.

STATE

California Health and Safety Code §25100 et seq. (Hazardous Waste Control Act of 1972, as amended).

This act creates the framework under which hazardous wastes must be managed in California. It mandates the State Department of Health Services (now the Department of Toxic Substances Control, or DTSC, under the California Environmental Protection Agency, or Cal EPA) to develop and publish a list of hazardous and extremely hazardous wastes, and to develop and adopt specific criteria and guidelines for classifying such wastes. The act also requires all hazardous waste generators to file specific 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 specify the minimum standards applicable to the handling and disposal of solid wastes. They also specify the guidelines necessary to ensure that all solid waste management facilities comply with the solid waste management plans of the administering county agency.

Title 22, California Code of Regulations, §66262.10 et seq. (Generator Standards)

These sections establish specific requirements for generators of hazardous wastes with respect to handling and disposal. Under these requirements, all waste generators are required to determine whether or not their wastes are hazardous according to state-specified criteria. As with the federal program, every hazardous waste generator is required to obtain an EPA identification number, prepare all relevant manifests before transporting the waste off-site, and use only permitted treatment, storage, and disposal facilities. Additionally, all hazardous wastes are required to be handled only by registered hazardous waste transporters. Requirements for record keeping, reporting, packaging, and labeling are also established for each generator.

LOCAL

There are no local LORS that would apply to the proposed project.

WORKER SAFETY AND FIRE PROTECTION

FEDERAL

In December 1970 Congress enacted Public Law 91-596, the Federal Occupational Safety and Health Act of 1970 (OSH Act). This Act mandates safety requirements in the workplace and is found in Title 29 of the United States Code, sections 651 through 678. Implementing regulations are codified at Title 29 of the Code of Federal Regulations, under General Industry Standards sections 1910.1 through 1910.1500 and clearly define the procedures for promulgating regulations and conducting inspections to implement and enforce safety and health procedures to protect workers, particularly in the industrial sector. Most of the general industry safety and health standards now in force under this OSH Act represent a compilation of materials from existing federal standards and national consensus standards. These include standards from the voluntary membership organizations of the American National Standards Institute (ANSI) and the National Fire Protection Association (NFPA) which publishes the National Fire Codes.

The purpose of the Occupational Safety and Health Act is to "assure so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources," (29 U.S.C. § 651). The Federal Department of Labor promulgates and enforces safety and health standards that are applicable to all businesses affecting interstate commerce. The Department of Labor established the Occupational Safety and Health Administration (OSHA) in 1971 to discharge the responsibilities assigned by the OSH Act.

Applicable Federal requirements include:

- Occupational Safety and Health Act of 1970 (29 U.S.C. § 651 et seq.);
- Occupational Safety and Health Administration Safety and Health Regulations (29 C.F.R. §§1910.1 - 1910.1500); and
- 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 Title 29 of the Code of Federal Regulations, sections 1910.1 – 1910.1500 and sections 1952.170 – 1952.175.

STATE

California passed the Occupational Safety and Health Act of 1973 ("Cal/OSHA") as codified in the California Labor Code, section 6300 et seq. Regulations promulgated as a result of the Act are codified at Title 8 of the California Code of Regulations, beginning with sections 337 through 560 and continuing with sections1514 through 8568. The California Labor Code requires that the Cal/OSHA Standards Board adopt standards at least as effective as the federal standards (Labor Code § 142.3(a)). Thus all Cal/OSHA health and safety standards meet or exceed the Federal requirements. California

obtained federal approval of its State health and safety regulations, in lieu of the federal requirements which are codified at Title 29 of the California Code of Regulations, sections 1910.1 through 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.

Employers are responsible for informing their employees about workplace hazards, potential exposure and the work environment (Labor Code § 6408). Cal/OSHA's principal tool in ensuring that workers and the public are informed is the Hazard Communication standard first adopted in 1981 and contained in Title 8 of the California Code of Regulations, section 5194. This regulation was promulgated in response to California's Hazardous Substances Information and Training Act of 1980. It was later revised to mirror the Federal Hazard Communication Standard (29 C.F.R. § 1910.1200) which established on the federal level an employee's "right to know" about chemical hazards in the workplace, but added the provision of applicability to public sector employers. A major component of this regulation is the required provision of Material Safety Data Sheets (MSDSs) to workers. MSDSs provide information on the identity, toxicity, and precautions to take when using or handling hazardous materials in the workplace.

Finally, California Code of Regulations, title 8, section 3203 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.

Applicable State requirements include:

- Cal. Code Regs., tit. 8, § 339 - List of hazardous chemicals relating to the Hazardous Substance Information and Training Act;
- Cal. Code Regs., tit. 8, § 337, et seq. - Cal/OSHA regulations;
- Cal. Code Regs., tit. 24, § 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 §§ 25500 - 25541 - Hazardous Material Business Plan detailing emergency response plans for hazardous materials emergency at the facility.

LOCAL

The California Building Standards Code published at Title 24 of the California Code of Regulations, section 3 et seq, is comprised of eleven parts containing the building design and construction requirements relating to fire and life safety and structural safety. The Building Standards Code includes the electrical, mechanical, energy, and

fire codes applicable to the project. Local planning/building & safety departments enforce the California Uniform Building Code.

National Fire Protection Association (NFPA) standards are published in the California Fire Code. The fire code contains general provisions for fire safety, including but not restricted to: 1) required road and building access; 2) water supplies; 3) installation of fire protection and life safety systems; 4) fire-resistive construction; 5) general fire safety precautions; 6) storage of combustible materials; 7) exits and emergency escapes; and 8) fire alarm systems. The California Fire Code reflects the body of regulations published at Title 24 of the California Code of Regulations (Health and Safety Code § 18901 et seq.).

Similarly, the Uniform Fire Code (UFC) Standards, a companion publication to the California Fire Code, contains standards of the American Society for Testing and Materials and the NFPA. It is the United State's premier model fire code. It is updated annually as a supplement and published every third year by the International Fire Code Institute to include all approved code changes in a new edition. The latest revision of the Uniform Fire Code adopted into the Alameda County Fire Code is the 1997 version (Chapter 6.04 of Title 6 of the Alameda County General Ordinance Code). The Alameda County Fire Department administers the UFC.

Applicable local (or locally enforced) requirements include:

- 1998 Edition of California Fire Code and all applicable NFPA standards (Title 24, California Code of Regulations, sections 901-907);
- California Building Code Title 24, California Code of Regulations, section 3 et seq.; and
- Uniform Fire Code, 1997.

Appendix B

Proof of Service List

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

APPLICATION FOR CERTIFICATION FOR THE EAST ALTAMONT ENERGY CENTER (EAST ALTAMONT)	**DOCKET NO. 01-AFC-4** **PROOF OF SERVICE**

I, _____, declare that on _____, I deposited copies of the attached _____, in the United States mail at Sacramento, CA with first class postage thereon fully prepaid and addressed to the following:

DOCKET UNIT

Send the original signed document plus the required 12 copies to the address below:

CALIFORNIA ENERGY COMMISSION
DOCKET UNIT, MS-4
***Attn: Docket No. 01-AFC-4**
1516 Ninth Street
Sacramento, CA 95814-5512
docket@energy.state.ca.us

* * * *

In addition to the documents sent to the Commission Docket Unit, also send individual copies of any documents to:

APPLICANT

Richard L. Thomas
Senior Vice President
4160 Dublin Blvd
Dublin, California 94568

Ms. Alicia Torre, Project Manager
East Altamont Energy Center, LLC
4160 Dublin Blvd
Dublin, California 94568

Calpine
Steve DeYoung
4160 Dublin Blvd
Dublin, California 94568

Calpine
Susan Strachan
P.O. Box 1049
Davis, CA 95617-1049

COUNSEL FOR APPLICANT

Ellison, Schneider & Harris L.L.P
Gregory L. Wheatland, Esq.
2015 H Street
Sacramento, CA 95814

INTERVENORS

SJVUAPCD
C/O Seyed Sadredin
Director of Permit Services
1990 East Gettysburg Avenue
Fresno, California 93726-0244

CURE
C/O Marc D. Joseph, Esq.
Adams Broadwell Joseph & Cardozo
651 Gateway Blvd., Suite 900
South San Francisco, CA 94080

Michael E. Boyd
CARE
5439 Soquel Drive
Soquel, CA 95073-2659

Robert Sarvey
501 W. Grantline Road
Tracy, CA 95376

INTERESTED AGENCIES

California Regional Water Quality Control Board
Central Valley Region
3443 Routier Road, Suite A
Sacramento, CA 95827

California Department of Water Resources
Project Power Planning Branch
State Water Project Analysis Office
Michael Werner, Acting Chief
1416 9th Street
Sacramento, CA 95814

US Department of Commerce
National Marine Fisheries Service
Rebecca Lent, Ph.D.
501 West Ocean Boulevard, Suite 4200
Long Beach, CA 90802-4213

Bruce Thomas
Western Area Power Admin.
114 Parkshore Drive
Folsom, CA 95630-4710

Al Ghaffari
Stationary Source Division
California Air Resources Board
1001 I Street, 6th Floor
Sacramento, CA 95812

Lois M. Sahyoun
Clerk of the Board
San Joaquin County Board of Supervisors
222 East Weber Avenue, Room 701
Stockton, CA 95202

Dave Swanson
Western Area Power Admin., A7400
12155 West Alameda Parkway
Lakewood, CO 80228

I declare 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

APPLICATION FOR CERTIFICATION FOR THE EAST ALTAMONT ENERGY CENTER (EAST ALTAMONT)	**DOCKET NO. 01-AFC-4** (AFC ACCEPTED 06/27/01)

EXHIBIT LIST[1]

STAFF'S EXHIBITS

Exhibit 1: Joint California Energy Commission Final Staff Assessment (FSA)/Western Area Power Administration (WAPA) Final Environmental Assessment (FEA) of the East Altamont Energy Center Project (EAEC) filed on September 19, 2002. Sponsored by Staff and WAPA; admitted into evidence on October 15, 16, 21 and 22, 2002.

Exhibit 1A: Staff Errata filed on October 1, 2002. Sponsored by Staff and admitted into evidence on October 15, 2002.

Exhibit 1B: Testimony of Duane Grimsman, Trimark Communities and Eric Teed-Bose, Mountain House, dated October 2, 2002. Sponsored by Staff and admitted into evidence on October 16, 2002.

Exhibit 1C: Staff Status Report on Workshops and Errata to the Final Staff Assessment/Environmental Assessment (Noise section is revised by Staff Exhibit 1F below) docketed October 9, 2002. Sponsored by Staff and admitted into evidence on October 15, 2002.

Exhibit 1D: Letter from Mr. Adolph Martinelli, Agency Director of the Alameda County Community Development Agency to CEC Environmental Office Manager Bob Haussler dated April 26, 2002. Sponsored by Staff and admitted into evidence on October 21, 2002.

Exhibit 1E: Electronic mail dated July 19, 2002, from Kris Helm to CEC's Paul Richins re EAEC-Recycled Water. Sponsored by Staff and admitted into evidence on October 16, 2002.

[1] Whether or not shown on this Exhibit List, all testimony is inclusive of the witness' prefiled qualifications in the form of employment biographies, curriculum vitae, resumes and any other statements listing qualifications and work experience. Generally, such statements were filed with prehearing conference statements on October 1, 2002.

Exhibit 1F: Staff Additional Errata to the FSA/FEA regarding Noise dated October 15, 2002. Sponsored by Staff and admitted into evidence on October 15, 2002.

Exhibit 1G: Telephone Conversation Record from Effie Fourakis to Tracy Fire Department Battalion Chief Larry Fragoso dated December 19, 2001. Sponsored by Staff and admitted into evidence on October 15, 2002.

Exhibit 1H Water Service Agreement between BBID and the Mountain House Community Services District, dated September 7, 1993, and docketed on October 24, 2002. Sponsored by Staff and admitted into evidence on October 16, 2002.

Exhibit 1I City of Tracy (Public Works Department) letter from Steven G. Bayley to Cheri Davis dated December 20, 2001 and docketed on March 12, 2002. Sponsored by Staff and admitted into evidence on October 16, 2002.

Exhibit 1J: Testimony of Mr. Adolph Martinelli on Visual Resources (inclusive of Visual Resources Table 4). Sponsored by Staff and admitted into evidence on October 21, 2002.

Exhibit 1K Alameda County's East County Area Plan, a portion of the Alameda County General Plan, Volume 1, Goals Policies and Programs, as adopted by the Board of Supervisors on May 5, 1994. Sponsored by Staff and admitted into evidence on October 21, 2002.

Exhibit 1L (for Identification): Revised proposed Condition PLUME-1 and 2. Sponsored by Staff on October 22, 2002.

Exhibit 1M: Revised proposed changes to Condition SOILS & WATER–5, 6 & 7. Sponsored by Staff and admitted into evidence on October 22, 2002.

Exhibit 1N: Errata to FSA Visual Resources section. Sponsored by Staff and admitted into evidence on October 22, 2002.

Exhibit 1O Errata to proposed Revised Condition PLUME-1 and 2. Sponsored by Staff and admitted into evidence on October 22, 2002.

Exhibit 1P: Witness qualifications of Paul Richins, Jr. Sponsored by Staff and admitted into evidence on October 22, 2002.

APPLICANT'S EXHIBITS

Exhibit 2: Application for Certification for the EAEC, Filed March 20, 2001

Exhibit 2A: Supplement A to the AFC, Filed on May 3, 2001

Exhibit 2B: Supplement B to the AFC, Filed on October 9, 2001

Exhibit 2C: Supplement C to the AFC, Filed on February 6, 2002

Exhibit 2D: Data Adequacy Requests and Responses:

1. Data Adequacy Response Set 1, Filed May 1, 2001
2. Data Adequacy Response Set 2, Filed May 3, 2002
3. Data Adequacy Response Set 3, Filed May 7, 2001
4. Data Adequacy Response Set 4, Filed May 15, 2002
5. Data Adequacy Response Set 5, Filed June 13, 2002
6. Data Requests and Responses, Set 1, Filed July 9, 2001
7. Data Requests and Responses, Set 1A, Filed October 5, 2001
8. Data Requests and Responses, Set 2A, Filed August 17, 2001
9. Data Requests and Responses, Set 2B, Filed September 10, 2001
10. Data Requests and Responses, Set 2C, Filed September 14, 2001
11. Data Response and Informal Data Response Set 2C, Filed September 28, 2001
12. Data Requests and Responses, Set F, Filed October 9, 2001
13. Data Requests and Responses, Set 3, Filed October 9, 2001
14. Data Requests and Responses, Set F, Filed October 11, 2001
15. Data Requests and Responses, Set G, Filed October 12, 2001
16. Informal Data Requests and Responses, Set 2, Filed October 12, 2001
17. Data Requests and Responses, Set H, Filed October 31, 2001
18. Data Requests and Responses, Set I, Filed November 9, 2001
19. Informal Data Requests and Responses, Set 3, Filed November 21, 2001
20. Informal Data Requests and Responses, Set 3, Filed November 30, 2001
21. Data Request Response from September 6th Workshop, filed October 5, 2001

22. Informal Data Requests and Responses, Set 5, Filed December 21, 2001
23. Data Requests and Responses, Set 4, Filed January 16, 2002
24. Informal Data Requests and Responses, Set 6, Filed January 18, 2002
25. Data Requests and Responses, Set J, Filed February 11, 2002
26. Data Requests and Responses, Set 5A, Filed February 22, 2002
27. Data Requests and Responses, Set 5B, Filed April 3, 2002
28. Data Requests and Responses, Set 6, Filed April 22, 2002
29. Data Requests and Responses, Set 7, Filed April 26, 2002

Exhibit 2E: Revised Slope Stability Analysis for the ROWD, Filed June 9, 2001

Exhibit 2F: Applicants Comments on the Preliminary Staff Assessment, Set 1, Filed January 14, 2002

Exhibit 2G Applicants Comments on the Preliminary Staff Assessment, Set 2, Filed May 1, 2002

Exhibit 2H: Letter dated March 29, 2001 from Ellison, Schneider & Harris to CEC (Steve Larson) transmitting request for confidential treatment of emission reduction credit information (Docket # 19411)

Exhibit 2I: Letter dated March 30, 2001 from Sierra Research to CEC Dockets Office transmitting compact disks containing air quality modeling files and topographic maps. (Docket # 19726)

Exhibit 2J: Letter dated April 3, 2001 from Calpine (B. McBride) to Bay Area Air Quality Management District (BAAQMD; B. deBoisblanc) transmitting the Application for Determination of Compliance and Authority to Construct to the BAAQMD. (Docket # 19439)

Exhibit 2K: Letter dated May 16, 2001 from Sierra Research (N. Matthews) to BAAQMD (D. Jang) responding to a request for additional information.

Exhibit 2L: Letter dated June 4, 2001 from Sierra Research (N. Matthews) to BAAQMD (D. Jang) requesting data needed to perform a cumulative air quality impacts analysis.

Exhibit 2M: Letter dated June 4, 2001 from Sierra Research (N. Matthews) to SJVUAPCD (J. Swaney) requesting data needed to perform a cumulative air quality impacts analysis.

Exhibit 2N: Letter dated July 13, 2001 from Sierra Research (N. Matthews) to BAAQMD (R. Walker) requesting data needed to perform a cumulative air quality impacts analysis.

Exhibit 2O: Letter dated August 28, 2001 from Sierra Research (N. Matthews) to CEC Dockets Office providing responses to informal comments from the Air Resources Board staff regarding the screening health risk assessment. (Docket # 22074)

Exhibit 2P: Letter dated August 28, 2001 from Sierra Research (N. Matthews) to BAAQMD (B. deBoisblanc) requesting data needed to perform an air quality increments analysis.

Exhibit 2Q: Letter dated August 28, 2001 from Sierra Research (N. Matthews) to SJVUAPCD (J. Swaney) requesting data needed to perform an air quality increments analysis.

Exhibit 2P: Letter dated November 9, 2001 from Sierra Research (G. Rubenstein) to CEC Staff (T. Ngo) transmitting information regarding ammonia slip levels.

Exhibit 2Q: Letter dated November 13, 2001 from Sierra Research (G. Rubenstein) to CEC Dockets Office transmitting information related to visible water vapor plume modeling. (Docket # 23040)

Exhibit 2R: Letter dated November 29, 2001 from Sierra Research (G. Rubenstein) to CEC Staff (T. Ngo) transmitting information regarding turbine startup and shutdown emission rates.

Exhibit 2S: Letter dated November 29, 2001 from Sierra Research (N. Matthews) to BAAQMD (B. deBoisblanc) transmitting revised air quality impact analysis. (Docket # 23274)

Exhibit 2T: Letter dated December 6, 2001 from Sierra Research (G. Rubenstein) to CEC Staff (T. Ngo) transmitting corrected information regarding turbine startup and shutdown emission rates.

Exhibit 2U: Letter dated December 20, 2001 from Sierra Research (G. Rubenstein) to CEC Staff (T. Ngo) transmitting miscellaneous equipment brochures.

Exhibit 2V: Letter dated December 21, 2001 from Sierra Research (N. Matthews) to BAAQMD (D. Jang) transmitting emission reduction credit summary.

Exhibit 2W: Letter dated December 21, 2001 from Sierra Research (G. Rubenstein) to CEC Staff (T. Ngo) transmitting fuel sulfur data.

Exhibit 2X: Letter dated April 3, 2002 from CH2M Hill (J. Salamy) to CEC Staff (C. Davis) transmitting revised visible water vapor plume analysis. (Docket # 25132)

Exhibit 2Y: Preliminary Determination of Compliance, Filed April 17, 2002

Exhibit 2Y1: Final Determination of Compliance, Filed July 24, 2002

Exhibit 2Z: Letter dated May 17, 2002 from Sierra Research (G. Rubenstein) to BAAQMD (D. Jang) transmitting comments on the Preliminary Determination of Compliance.

Exhibit 2AA: Letter dated July 8, 2002 from Sierra Research (G. Rubenstein) to SJVUAPCD (S. Sadredin) regarding mitigation fee agreement with the SJVUAPCD.

Exhibit 2BB: Letter dated July 12, 2002 from Sierra Research (G. Rubenstein) to CEC Staff (C. Davis) providing comments on the CEC staff's air quality mitigation proposal. (Docket # 26190)

Exhibit 2CC Letter dated July 19, 2002 from Sierra Research (G. Rubenstein) to CEC Staff (C. Davis) transmitting draft consensus air quality mitigation plan. (Docket # 26234)

Exhibit 2DD: Letter dated July 24, 2002 from CH2M Hill (J. Salamy) to CEC Staff (C. Davis) transmitting the Final Determination of Compliance issued by the BAAQMD. (Docket # 26296)

Exhibit 2EE: Letter dated August 29, 2002 from Sierra Research (G. Rubenstein) to CEC Staff (C. Davis) transmitting revised construction air quality impact analysis.

Exhibit 2FF: Letter dated April 23, 2001 from Bay Area Air Quality Management District (D. Jang) to CEC (S. Larson), concluding that the AFC contains sufficient information for the BAAQMD to undertake its Determination of Compliance review.

Exhibit 2GG: Letter dated June 22, 2001 from SJVUAPCD (J. Swaney) to Sierra Research (N. Matthews) indicating that there are no sources within

that District for inclusion in the cumulative air quality impact analysis.

Exhibit 2HH: Letter dated October 17, 2001 from BAAQMD (D. Jang) to Sierra Research (N. Matthews) regarding the status of the PDOC review. (Docket # 22793)

Exhibit 2II: Letter dated October 23, 2001 from BAAQMD (G. Willner) to Sierra Research (N. Matthews) providing information related to the air quality increments analysis.

Exhibit 2JJ: Letter dated March 4, 2002 from URS (D. Stein) to the CEC Dockets Office (Docket # 01-AFC-16) transmitting a cumulative air quality impacts analysis for the Tracy Peaker project. (Docket # 24808)

Exhibit KK: Letter dated April 12, 2002 from BAAQMD (E. Garvey) to EAEC (A. Torre) transmitting the Preliminary Determination of Compliance. (Docket 25375)

Exhibit 2LL: Letter dated April 16, 2002 from BAAQMD (D. Jang) to CEC Staff (T. Ngo) correcting an error in the Preliminary Determination of Compliance.

Exhibit 2MM: Biological Assessment, Filed March 7, 2002

Exhibit 2NN: Response from the National Marine Fisheries Service (NMFS), Filed April 3, 2002

Exhibit 2OO: Responses to Issues Raised at the January 23, 2002 Workshop on the Conceptual Landscape Plan, Filed April 3, 2002

Exhibit 2PP: June 5, 2002 Letter from the National Marine Fisheries Service, Filed June 12, 2002

Exhibit 2QQ: Biological Mitigation Proposal, Filed July 1, 2002

Exhibit 2RR: USFWS Biological Opinion, Filed September 19, 2002

Exhibit 2SS: Historic Resources Information Filed on June 11, 2002

Exhibit 2TT: Informal Hazardous Materials Handling Data Request Response, Filed July 3, 2002

Exhibit 2UU: May 22, 2002 Workshop Data Requests and Responses, Filed June 18, 2002

Exhibit 2VV: Letter from Adolph Martinelli, Alameda County Community Development Director, to Cheri Davis of December 17, 2001

Exhibit 2WW: Letter from Adolph Martinelli, Alameda County Community Development Agency, to Ms. Cheri Davis, CEC, dated August 15, 2001, Responses of Alameda County Community Development Agency (ACCDA) to Data Request Set No. 2

Exhibit 2XX: Data Requests and Responses, Set 2, Supplemental Data Response to Noise Data Request 78, Filed August 30, 2002

Exhibit 2YY: Revision to Figure 8.5-2R (Sensitive Noise Receptor Locations) and Transmittal of Letters to Three Homeowners Regarding Offer for Residential Soundproofing, Filed July 30, 2002

Exhibit 2AAA: Staff Response to Applicant's First Set of Data Requests, Filed September 25, 2002

Exhibit 2BBB: Informal Visual and Plume Data Response, Filed March 29, 2002

Exhibit 2CCC: Staff Response to Applicant's First Set of Data Requests, Filed September 25, 2002

Exhibit 2DDD: Revised Visible Water Vapor Plume Analysis, Response to CEC Preliminary Staff Analysis, and an Assessment of the Visual Impacts of the Plumes and Determination of Whether They Are Significant under CEQA, Filed April 3, 2002

Exhibit 2EEE: Approved Recycled Water Feasibility Study, filed 6/1/2001

Exhibit 2FFF: Letter to address report of conversation with Maureen Sargent, filed October 30, 2001

Exhibit 2GGG: Letter to express purpose of registering a protest regarding the manner in which CEC staff is conducting its investigation of the EAEC, filed October 30, 2001

Exhibit 2HHH: EAEC Status Report # 3, filed November 13, 2001

Exhibit 2III: EAEC Status Report # 4, filed January 3, 2002

Exhibit 2JJJ: Report of Conversation D. Flory and N. Quan of the Department of Water Resources (DWR), J. Stuart of NMFS and SWP Analysis Office re Discussion of Potential EAEC Water Supply, filed 4/23/2002

Exhibit 2KKK: EAEC Status Report # 5, filed April 24, 2002

Exhibit 2LLL: Supplement to Applicant's Status Report #5, filed May 7, 2002

Exhibit 2MMM: Approved Recycled Water Feasibility Study, filed June 1, 2002

Exhibit 2NNN: Letter from US Dept. of Commerce regarding Phone conversation with C. Davis re: decision to concur with the Western Area Power Administration, filed June 12, 2002

Exhibit 2OOO: Letter re: Clarify the Department's Position on Issues, filed June 19, 2002

Exhibit 2PPP: Memorandum of Understanding between Applicant and BBID, filed July 16, 2002

Exhibit 2QQQ: Opposition to Construction from Mow to Chairman Keese, filed July 18, 2002

Exhibit 2RRR: Opposition to Construction from San Joaquin County Board of Supervisors to Chairman Keese, filed July 18, 2002

Exhibit 2SSS: Report of Conversation between R. Gilmore and BBID re: Mountain House Community Service District (MHCSD) Letter, filed July 28, 2002

Exhibit 2TTT: EAEC Status Report # 6, filed August 5, 2002

Exhibit 2UUU: Agreement between the Dept. of Water Resources, State of California and the BBID filed on August 8, 2002

Exhibit 2VVV: Report of Conversation with R. Gilmore, BBID re: Mountain House Community dated June 20, 2002, filed August 28, 2002

Exhibit 2WWW: Mountain House Community Services District (MHCSD)/ Paul Sensibaugh 2002b. Response to CEC Staff inquiries regarding recycled water from MHCSD. Dated June 20, 2002 and docketed June 25, 2002

Exhibit 2XXX: Letter from William J. McCammon to Cheri Davis, Dated January 30, 2002

Exhibit 2YYY: Informal Data Response Regarding Emergency Response History for Calpine’s Western Region Power Plants, Filed July 3, 2002

Exhibit 2ZZZ: Geotechnical Services Report, Filed on October 30, 2001

Exhibit 3: Applicant's Uncontested Topic Area Testimony as follows:

Exhibit 3A: Project Description testimony. Sponsored by Applicant and admitted into evidence on October 15, 2002.

Exhibit 3B: Alternatives Testimony. Sponsored by Applicant and admitted into evidence on October 16, 2002. **(Intervenor CARE contested this topic)**

Exhibit 3C: Compliance Monitoring and Closure. Sponsored by Applicant and admitted into evidence on October 15, 2002.

Exhibit 3D: Facility Design, Power Plant Reliability and Power Plant Efficiency. Sponsored by Applicant and admitted into evidence on October 15, 2002.

Exhibit 3E: Transmission System Engineering Testimony. Sponsored by Applicant; admitted into evidence on October 15, 2002.

Exhibit 3F: Transmission Line Safety & Nuisance. Sponsored by Applicant and admitted into evidence on October 15, 2002.

Exhibit 3G: Cultural Resources. Sponsored by Applicant and admitted into evidence on October 15, 2002.

Exhibit 3H Geology. Sponsored by Applicant and admitted into evidence on October 15, 2002.

Exhibit 3I Paleontology. Sponsored by Applicant and admitted into evidence on October 15, 2002.

Exhibit 3J: Soil Resources Testimony. Sponsored by Applicant and admitted into evidence on October 15, 2002.

Exhibit 3K: Waste Management. Sponsored by Applicant and admitted into evidence on October 15, 2002.

Exhibit 3L: Traffic & Transportation. Sponsored by Applicant and admitted into evidence on October 15, 2002.

Exhibit 3M: Socioeconomics. Sponsored by Applicant and admitted into evidence on October 15, 2002.

Exhibit 4: **Applicant's Contested Topic Area Testimony as follows:**

Exhibit 4A: Worker Safety & Fire Protection Testimony. Sponsored by Applicant and admitted into evidence on October 15, 2002.

Exhibit 4B: Land Use. Sponsored by Applicant and admitted into evidence on October 15, 2002.

Exhibit 4B1: Amended and Restated EAEC Farmland Agreement dated September 17, 2002. Sponsored by Applicant and admitted into evidence on October 21, 2002.

Exhibit 4B2: Sierra Club Resolution, Loma Prieta Chapter, in support of the Metcalf Energy Center. Sponsored by Applicant and admitted into evidence on October 21, 2002.

Exhibit 4C1: EAEC Application for Certification (AFC) section on Noise. Sponsored by Applicant and admitted into evidence on October 15, 2002.

Exhibit 4C2: EAEC offer of residential sound attenuation program from Mr. and Mrs. Costa to CEC's Cheri Davis dated September 25, 2002. Sponsored by Applicant and admitted into evidence on October 15, 2002.

Exhibit 4C3: County of Alameda Comments on EAEC Preliminary Staff Assessment Noise section and discussion of Alameda County Noise Ordinance dated December 17, 2001 and signed by Adolph Martinelli and Mee Ling Tung dated December 13, 2001 and admitted into evidence on October 15, 2002.

Exhibit 4C4: Letter from Gary and Delores Kuhn to Applicant (Alicia Torre) dated October 11, 2002. Sponsored by Applicant and admitted into evidence on October 21, 2002.

Exhibit 4D: Water Resources Testimony. Sponsored by Applicant and admitted into evidence on October 16, 2002.

Exhibit 4D1: Applicant's Proposed Condition SOILS & WATER-5. Sponsored by Applicant and admitted into evidence on October 16, 2002.

Exhibit 4D2: Contra Costa Water District Comments on the joint FSA/FEA docketed on November 1, 2002. Sponsored by Applicant and admitted into evidence on October 16, 2002.

Exhibit 4E: Biological Resources Testimony. Sponsored by Applicant and admitted into evidence on October 16, 2002.

Exhibit 4F: Hazardous Materials Management Testimony. Sponsored by Applicant and admitted into evidence on October 16, 2002.

Exhibit 4G: Air Quality Testimony. Sponsored by Applicant and admitted into evidence on October 21, 2002.

Exhibit 4G1: Air Quality Errata. Sponsored by Applicant and admitted into evidence on October 21, 2002.

Exhibit 4G2: SJVUAPCD letter to CEC Staff dated October 10, 2002. Sponsored by Applicant and admitted into evidence on October 21, 2002.

Exhibit 4G3: SJVUAPCD Air Quality Mitigation Settlement Agreement with Applicant. Sponsored by Applicant and admitted into evidence on October 22, 2002.

Exhibit 4H: Public Health Testimony. Sponsored by Applicant and admitted into evidence on October 21, 2002.

Exhibit 4I: Visual Resources Plume Analysis Testimony. Sponsored by Applicant and admitted into evidence on October 22, 2002.

Exhibit 4I1: Visual Resources Errata (Figure showing EAEC's proposed landscape in context to the surrounding environment. Sponsored by Applicant and admitted into evidence on October 22, 2002.

Exhibit 4I2: Proposed Condition PLUME-1 & 2. Sponsored by Applicant and admitted into evidence on October 22, 2002.

Exhibit 4J: Visual Resources Testimony. Sponsored by Applicant and admitted into evidence on October 22, 2002.

Exhibit 4J1: Visual Resources Methodology materials contained in a facsimile from CEC's Dale Edwards to Applicant's Environmental Consultant Susan Strachan dated February 15, 2002. Sponsored by Applicant and admitted into evidence on October 22, 2002.

Exhibit 5: JOINT Exhibits

Exhibit 5A: Geology and Paleontology proposed changes to Condition **PAL-1**. Sponsored by Applicant and Staff and admitted into evidence on October 22, 2002.

Exhibit 5B Compliance and Closure proposed changes to Condition **COM-9**. Sponsored by Applicant and Staff and admitted into evidence on October 22, 2002.

Exhibit 5C: Visible Plume Impact Analysis Errata and changes to proposed conditions of certification.

Exhibit 5D (for Identification): SJVUAPCD's mitigation calculations.

Exhibit 6: Intervenor Sarvey

Exhibit 6A1: City of Tracy Fire Department letter from Fire Chief Terrell S. Estes to Alameda Fire Chief William J. McCammon dated June 10, 2002. Sponsored by Intervenor Sarvey and admitted into evidence on October 15, 2002.

Exhibit 6A2: City of Tracy Fire Department letter from Fire Chief Terrell S. Estes to the California Energy Commission dated September 30, 2002, regarding EAEC and Tesla Power projects. Sponsored by Intervenor Sarvey and admitted into evidence on October 15, 2002.

Exhibit 6B (for Identification): Testimony of Intervenor Sarvey on Fire Protection Issues. Withdrawn by Mr. Sarvey

Exhibit 6C: Sierra Club Resolution opposing the EAEC. Sponsored by Intervenor Sarvey and admitted into evidence on October 21, 2002.

Exhibit 6D: Direct Testimony of Mr. Eric Parfrey on Water Resources. Sponsored by Intervenor Sarvey and admitted into evidence on October 16, 2002.

Exhibit 6E: Contra Costa Water District Comments on the joint PSA/PEA docketed on January 22, 2002. Sponsored by Intervenor Sarvey and admitted into evidence on October 16, 2002.

Exhibit 6F E-mail message from Hearing Officer Major Williams, Jr. to all parties (1 page) dated October 10, 2002 re Contra Costa Water District. Sponsored by Intervenor Sarvey and admitted into evidence on October 16, 2002.

Exhibit 6G Master Power Purchase and Sale Agreement/Amended and Restated Confirmation Letter (18 pages) between Applicant and the California Department of Water Resources (DWR). Sponsored by Intervenor Sarvey and admitted into evidence on October 16, 2002.

Exhibit 6H: DWR News Release (1 page) dated September 20, 2002. Sponsored by Intervenor Sarvey and admitted into evidence on October 16, 2002.

Exhibit 6I: Excerpts of newspaper articles taken from the Internet, as follows. Sponsored by Intervenor Sarvey and admitted into evidence on October 16, 2002.

Exhibit 6I (1): August 20, 2002 “Report: Man Threatens FPL Plant, White House” (1 page)

Exhibit 6I (2): May 19, 2002 “Feds indict Pakistani teen in plot to blow up Port Everglad” (South Florida Sun-Sentinel; 1 page).

Exhibit 6I (3): April 1, 2002 “Pakistani Plotted to Bomb Florida Power Plants, Officials Say” (The New York Times; 1 page).

Exhibit 6I (4): March 28, 2002 “Terror suspect to be deported” (The Miami Herald; 1 page).

Exhibit 6J: Ozone Summary (Preliminary Data, (1 page); sponsored by Intervenor Sarvey and admitted into evidence on October 21, 2002.

Exhibit 6K: San Joaquin Valley Air Basin PM_{10} Emission Trends and Forecasts (1 page). Sponsored by Intervenor Sarvey and admitted into evidence on October 21, 2002.

Exhibit 6L: Community Programs and Benefits Agreement between the City of Tracy and GWF Energy, LLC, dated May 10, 2002. Sponsored by Intervenor Sarvey and admitted into evidence on October 21, 2002.

Exhibit 6M: GWF Tracy Suggested Conditions: Local Air Quality Enhancement Package (3 pages). Sponsored by Intervenor Sarvey and admitted into evidence on October 21, 2002.

Exhibit 6N: SJVAPCD letter to the City of Tracy (Department of Development and Engineering Services, dated June 5, 2002, regarding draft EIR (DEIR) for the Tracy Gateway Project. Sponsored by Intervenor Sarvey and admitted into evidence on October 21, 2002.

Exhibit 6O: SJVAPCD letter to the City of Tracy (Department of Development and Engineering Services, dated March 24, 1997, regarding the Tracy Hills Specific Plan draft EIR. Sponsored by Intervenor Sarvey and admitted into evidence on October 21, 2002.

Exhibit 6P: USEPA letter dated September 19, 2002, regarding the PDOC for the Tesla Power Project. Sponsored by Intervenor Sarvey and admitted into evidence on October 21, 2002.

Exhibit 6Q: Memorandum dated August 26, 1994, from John s. Seitz to David Howekamp. Sponsored by Intervenor Sarvey and admitted into evidence on October 21, 2002.

Exhibit 6R: Air Resources Board memorandum to Air Pollution Control Officers dated June 6, 2000, and docketed on June 16, 2000, regarding increasing use of course particulate matter emission reductions to

offset combustion-generated fine particulate matter. Sponsored by Intervenor Sarvey and admitted into evidence on October 21, 2002.

Exhibit 6S: SJVAPCD letter to the City of Tracy (Department of Development and Engineering Services, dated May 14, 1997, regarding the South Schulte Specific Plan draft EIR. Sponsored by Intervenor Sarvey and admitted into evidence on October 21, 2002.

Exhibit 6T: Tesla Mitigation Agreement. Sponsored by Intervenor Sarvey and admitted into evidence on October 21, 2002.

Exhibit 6U: Direct Testimony of Dick Schneider on Land Use Issues. Sponsored by Intervenor Sarvey and admitted into evidence on October 21, 2002.

Exhibit 6V: Direct Testimony of Mr. Eric Parfrey on Land Use. Sponsored by Intervenor Sarvey and admitted into evidence on October 21, 2002.

Exhibit 7: Intervenor CARE

Exhibit 7A Testimony of Dr. K. Shawn Smallwood on Biological Resource issues. Sponsored by CARE and admitted into evidence on October 16, 2002.

Exhibit 7B (for Identification): White paper on NOx Abatement Technology for Stationary Gas Turbines (15 pages). Sponsored by Intervenor CARE

Exhibit 8: Byron-Bethany Irrigation District (BBID)

Exhibit 8: Testimony of BBID General Manager Rick Gilmore. Sponsored by BBID and admitted into evidence on October 16, 2002.

Exhibit 8A: Resume of BBID General Manager Rick Gilmore. Sponsored by BBID and admitted into evidence on October 16, 2002.

Exhibit 8B: Map showing BBID's geographical boundaries. Sponsored by BBID and admitted into evidence on October 16, 2002.

Exhibit 8C: 1964 Agreement between the Department of Water Resources (DWR) and BBID. Sponsored by BBID and admitted into evidence on October 16, 2002.

Exhibit 8D: Letter to BBID General Manager Rick Gilmore dated August 8, 2002 from DWR Director Thomas Hannigan. Sponsored by BBID and admitted into evidence on October 16, 2002.

Exhibit 8E: BBID Resolution 2002-14 authorizing its General Manager Rick Gilmore to execute an agreement with DWR. Sponsored by BBID and admitted into evidence on October 16, 2002.

Exhibit 8F: "Will Serve" letter to Alicia Torre from Rick Gilmore dated February 6, 2001. Sponsored by BBID and admitted into evidence on October 16, 2002.

Exhibit 8G Letter dated October 30, 2001, to Cheri Davis from Rick Gilmore. Sponsored by BBID and admitted into evidence on October 16, 2002.

Exhibit 8H: Letter to Bruce Thomas, WAPA's Acting Environmental Manager, from Rodney R. McInnis, Acting Regional Administrator, National Marine Fisheries Service. Sponsored by BBID and admitted into evidence on October 16, 2002.

Exhibit 8I: Recycled Water Feasibility Study. Sponsored by BBID and admitted into evidence on October 16, 2002.

Exhibit 8J: Letter dated October 8, 2001 to Cheri Davis from Rick Gilmore. Sponsored by BBID and admitted into evidence on October 16, 2002.

Exhibit 8K: Resolution 2001-20. Sponsored by BBID and admitted into evidence on October 16, 2002.

Exhibit 8L: Memorandum of Understanding ("MOU") with EAEC, LLC regarding the use of recycled water. Sponsored by BBID and admitted into evidence on October 16, 2002.

Exhibit 8M: Minute Summary of the Board of Supervisors San Joaquin County, Tuesday, July 9, 2002. Sponsored by BBID and admitted into evidence on October 16, 2002.

Exhibit 8N: Letter dated June 20,2002 from Paul M. Sensibaugh, General Manager to Cheri Davis, CEC. Sponsored by BBID and admitted into evidence on October 16, 2002.

Exhibit 8O: Power Point Slide Presentation. Sponsored by BBID and admitted into evidence on October 16, 2002.

Exhibit 9: Written testimony of Gary Nuss. Sponsored by BBID and admitted into evidence on October 16, 2002.

Exhibit 9A: Statement of Qualifications of Gary Nuss. Sponsored by BBID and admitted into evidence on October 16, 2002.

Exhibit 9B: Water Supply and Demand Summary. Sponsored by BBID and admitted into evidence on October 16, 2002.

Exhibit 9C: Nolte Memorandum to Rick Gilmore dated September 24, 2002. Sponsored by BBID and admitted into evidence on October 16, 2002.

Exhibit 9D: Soils & Water Table 10, BBID's Projected Average Annual Water Demands, 2000-2040 (afy). Sponsored by BBID and admitted into evidence on October 16, 2002.

Exhibit 9E: Soils & Water Table 11, BBID's Projected Average Annual Water Demands, 2000-2040 (afy). Sponsored by BBID and admitted into evidence on October 16, 2002.

Exhibit 9F: Soils & Water Table 13, BBID's Projected Average Annual Water Demands, 2000-2040 (afy). Sponsored by BBID and admitted into evidence on October 16, 2002.

Exhibit 10: Rick Gilmore letter to the City of Tracy, Public Works Department, (Steven G. Bayley) dated October 3, 2001. Sponsored by BBID and admitted into evidence on October 16, 2002.

Exhibit 11: City of Tracy (Public Works Department) letter from Steven G. Bayley to BBID's Rick Gilmolre dated October 30, 2001. Sponsored by BBID and admitted into evidence on October 16, 2002.

Matters of Which the Committee Has Taken Office Notice

1. Air Mitigation Agreement between Applicant and SJVAPCD. Docket # 26597.

2. Applicant's Draft Air Mitigation Plan authored by Mr. Rubenstein. Docket # 26234.

3. Intervenor Sarvey's comments on PDOC. Docket # 25753.

4. Intervenor SJVAPCD's comments on PDOC. Docket #25648.

5. Committee's Ruling on Scope of Cumulative Air Quality Analysis. Docket # 24141.

6. Staff's brief on Cumulative Air Quality Analysis. Docket # 23554.

7. Mountain House Fire Service Mitigation Request. Docket # 23533.

8. Mountain House EIR.

9. Staff's Proposed Air Quality Mitigation Plan fort the EAEC.

10. Tesla Power Plant PDOC.

11. Letter from CEC Chairman William Keese to the Honorable Barbara S. Mathews, California Assemblywoman, District 17.

12. CEC's 2002-2012 Electricity Report.

13. DWR's report on August Electricity Prices.

14. Tracy Gateway EIR.

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