

*Staff Assessment*

**PITTSBURG DISTRICT  
ENERGY FACILITY**

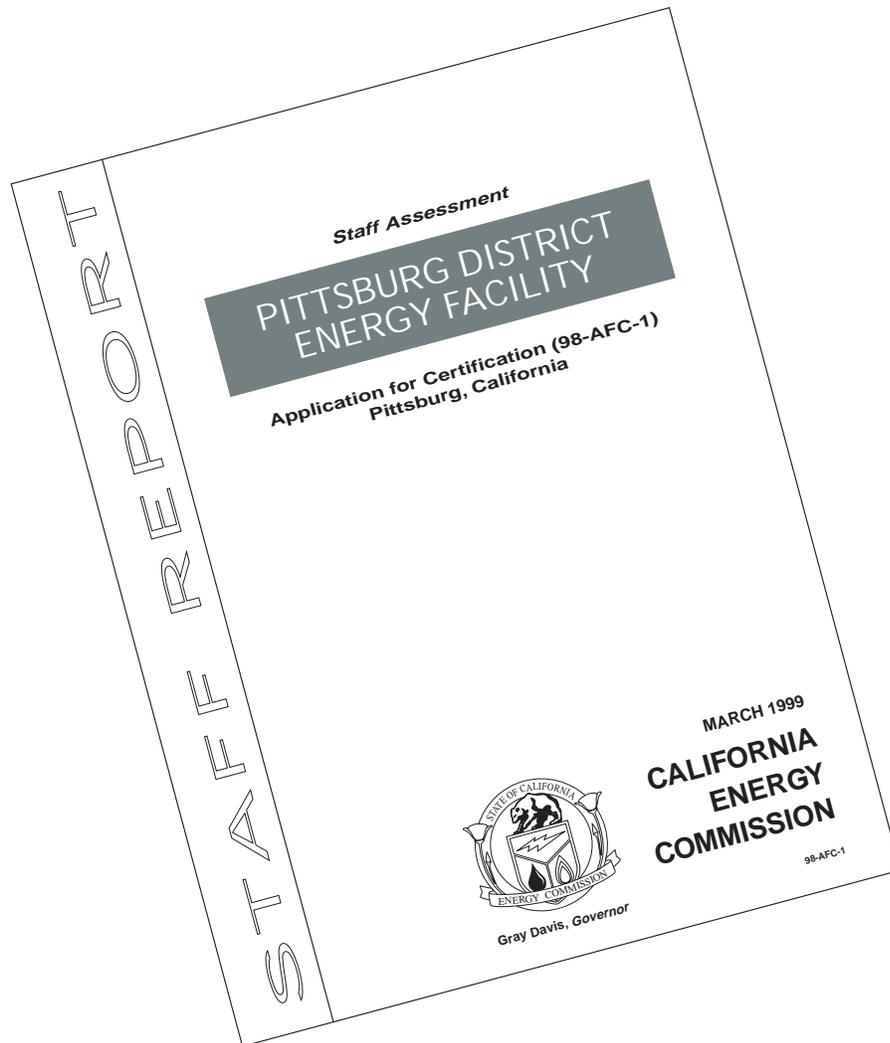
**Application for Certification (98-AFC-1)  
Pittsburg, California**



**Gray Davis, Governor**

**MARCH 1999**

**CALIFORNIA  
ENERGY  
COMMISSION**



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**CALIFORNIA ENERGY COMMISSION**

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**ENERGY FACILITIES SITING &  
ENVIRONMENTAL PROTECTION DIVISION**

# TABLE OF CONTENTS

# PAGE No.

<b>PROJECT DESCRIPTION</b> .....	<b>1</b>
INTRODUCTION .....	1
CORRECTIONS/CHANGES.....	1
<b>PUBLIC HEALTH</b> .....	<b>3</b>
INTRODUCTION .....	3
CUMULATIVE IMPACTS.....	3
USE OF RECYCLED WATER FOR COOLING.....	4
TRUCK BYPASS ROAD.....	5
REFERENCES .....	6
<b>WORKER SAFETY AND FIRE PROTECTION</b> .....	<b>7</b>
INTRODUCTION .....	7
CORRECTIONS/CHANGES.....	7
<b>LAND USE</b> .....	<b>9</b>
INTRODUCTION .....	9
LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS) .....	9
SETTING .....	14
IMPACTS.....	21
FACILITY CLOSURE.....	31
MITIGATION.....	31
CONCLUSIONS AND RECOMMENDATIONS.....	31
CONDITIONS OF CERTIFICATION.....	32
REFERENCES .....	34
<b>TRAFFIC AND TRANSPORTATION</b> .....	<b>37</b>
INTRODUCTION .....	37
LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS) .....	37
SETTING .....	40
IMPACTS.....	40
COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS AND STANDARDS	
.....	53
FACILITY CLOSURE.....	54
MITIGATION.....	55
CONCLUSIONS AND RECOMMENDATIONS.....	56

# TABLE OF CONTENTS

# PAGE No.

CONDITIONS OF CERTIFICATION .....	57
<b>NOISE</b> .....	<b>63</b>
CORRECTIONS/CHANGES .....	63
<b>VISUAL RESOURCES</b> .....	<b>65</b>
INTRODUCTION.....	65
NEW MITIGATION PROPOSED BY THE APPLICANT .....	65
DELTA DIABLO SANITATION DISTRICT CONCERNS .....	65
RELOCATION OF PART OF THE PROPOSED UNDERGROUND TRANSMISSION LINE AND TRANSITION STATION SITE.....	65
ASSESSMENT OF VISUAL IMPACTS OF THE PROJECT CONSIDERING THE NEWLY PROPOSED MITIGATION .....	66
ASSESSMENT OF COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS AND STANDARDS CONSIDERING THE NEWLY PROPOSED MITIGATION	71
MITIGATION .....	71
CONCLUSIONS AND RECOMMENDATIONS .....	72
ADDITIONAL PROPOSED CONDITIONS OF CERTIFICATION.....	73
ADDITIONAL REFERENCES .....	76
<b>CULTURAL RESOURCES</b> .....	<b>81</b>
INTRODUCTION.....	81
LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS) .....	82
SETTING.....	86
IMPACTS .....	94
MITIGATION .....	98
CONCLUSIONS AND RECOMMENDATIONS .....	100
(REVISED) PROPOSED CONDITIONS OF CERTIFICATION .....	100
REFERENCES.....	111
<b>SOCIOECONOMIC RESOURCES</b> .....	<b>115</b>
INTRODUCTION.....	115
CORRECTIONS/CHANGES .....	115
<b>BIOLOGICAL RESOURCES</b> .....	<b>117</b>
INTRODUCTION.....	117
CORRECTIONS/CHANGES .....	117
<b>SOIL &amp; WATER RESOURCES</b> .....	<b>119</b>

# TABLE OF CONTENTS

# PAGE No.

INTRODUCTION .....	119
CUMULATIVE IMPACTS .....	120
CONDITIONS OF CERTIFICATION .....	123
<b>FACILITY DESIGN .....</b>	<b>125</b>
CORRECTIONS/CHANGES .....	125
CONDITIONS OF CERTIFICATION .....	125
<b>TRANSMISSION SYSTEM ENGINEERING .....</b>	<b>145</b>
INTRODUCTION .....	145
CORRECTIONS/CHANGES .....	145



# PROJECT DESCRIPTION

Testimony Errata for Lorraine White

## INTRODUCTION

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Staff's original testimony on Project Description was submitted to the Siting Committee on March 10, 1999. Subsequent to that testimony, staff held three workshops in the City of Pittsburg to discuss the Staff Assessment, receive public and interested party comment, and further resolve issues or address concerns. In addition, staff conducted conference calls with the applicant and other interested parties on the topics of land use issues and the applicant's proposed transmission route 10. As a result of these efforts, the applicant proposed changes to the PDEF project. These errata are in response to applicant-proposed changes and identified public concerns.

## CORRECTIONS/CHANGES

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Page 8, paragraph 4, fourth sentence: Strike "130 ft. steel lattice towers or", and insert "75 feet tall steel"; Strike "500 to 700" and insert "250 to 400".

Page 11 and Page 13, PROJECT DESCRIPTION Figures 5 & 6: Delete all height specifications, replace overall height measurement specification for transmission tubular pole with "75 feet".

Page 12, PROJECT DESCRIPTION Table 1, last column, bottom row: Strike "130, 150", insert "75".

Page 12, paragraph 2, first sentence: Strike "150 ft. steel lattice towers or", and insert "75 feet tall steel"; Strike "500-700" and insert "250 to 400".

Page 12, paragraph 2, second sentence: Strike "8<sup>th</sup> and Beacon Streets", and insert "above the northwest corner of Delta Diablo Sanitation District's Pumping station, north of the 8<sup>th</sup> and Beacon Street intersection (see PROJECT DESCRIPTION Errata Figure 1)."

Add PROJECT DESCRIPTION Errata Figure 1.

**PROJECT DESCRIPTION Supplement Figure 1**  
**Transmission Line Route 10 – Section West of 8<sup>th</sup> Street**

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# PUBLIC HEALTH

## Supplemental Testimony of Michael Ringer

### INTRODUCTION

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This supplemental testimony augments the original testimony regarding cumulative impacts from emissions of non-criteria (air toxics) pollutants, health impacts from the use of disinfected tertiary recycled water for cooling, and health impacts from the proposed truck bypass road.

### CUMULATIVE IMPACTS

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As stated in staff's original testimony (p. 63), the maximum calculated cancer risk for the PDEF facility is 0.5 in one million, which is less than the level of one in one million which staff considers de minimus. The location of the maximum cancer risk is about five miles northeast of the project site, at the southern base of the Montezuma Hills (PDEF 1998k, Fig. 5.16-2). Staff's testimony (p. 64) further stated that preliminary screening estimates of the maximum risk for the Delta Energy Center (DEC) show those impacts to occur in a different location than PDEF maximum impacts. More specifically, the maximum modeled risk for the DEC facility is located approximately 5.5 miles south of the maximum impact location for PDEF, or just southeast of the intersection of Highway 4 and Hillcrest Road (Calpine 1998, Fig. 8.1C-1). As part of the Bay Area Air Quality Management District's Air Toxics "Hot Spots" Program, maximum cancer risk and impact location have been estimated for the Dow Chemical facility. A maximum cancer risk of 14 in one million for Dow has been estimated at a location just north of Sixth Street Park in the northwest section of Antioch, about four miles southwest of the maximum impact location for PDEF (BAAQMD 1998 and Bateman 1999). Thus, modeling for the three facilities show that none of the maximum impact locations coincide. Since the maximum cancer risk for the PDEF facility is less than the de minimus level of one in one million additional lifetime cancer risk, staff would not expect any significant change in individual risk, even if the maximum impact location were to coincide exactly with that from another facility.

As staff's original testimony noted, the BAAQMD has reported that the lifetime cancer risk level for inhalation of ambient air was estimated to be 212 in one million based on 1996 average toxic concentration data. Based on 1997 data, the risk level was reduced to 194 in one million (BAAQMD 1998, p. 3). The PDEF risk increase of 0.5 in one million represents a maximum risk based on conservative assumptions. Since the average increase in risk is less, and does not represent a significant contribution to the ambient risk of 194 in one million, staff does not consider the incremental impact of the additional risk posed by the PDEF project to be cumulatively considerable.

## USE OF RECYCLED WATER FOR COOLING

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The applicant proposes to use recycled water for cooling purposes at the PDEF. As staff testimony discussed, California Department of Health Services (DHS) regulations will require that such water be “disinfected tertiary recycled water” (DTRW) which must meet minimum requirements regarding treatment and residual virus and bacteria levels. Daily monitoring of coliform bacteria is required to assure that residual levels are within acceptable limits.

In developing the proposed requirements for DTRW, DHS assumed that a negligible risk to health would be that the highest conceivable annual probability of intestinal infection with virus would not exceed one in ten thousand (DHS 1992, p. 8). In order to assure that such a risk level is achievable with the proposed treatment standards, DHS considered various factors, including the amount of drift emitted from cooling towers of varying efficiencies; the number of viruses swallowed necessary to cause a one in 10,000 probability of infection; the seasonal concentration of viruses in DTRW that can infect cells; the volume of air throughout which particulate aerosols must be dispersed prior to entry into a breathing zone; and the fraction of the mass of particulate aerosols which will be deposited in the upper respiratory tract and then swallowed.

DHS combined the above factors with various assumptions such as an average adult’s daily air intake and particle size distribution in filtered effluent. This allowed DHS to specify a method of calculating the volume of air (including cooling tower exhaust air) through which cooling tower drift would have to disperse in order to result in the one in ten thousand annual risk level. The final calculation method is ultimately dependent on the cooling tower drift rate, the retention time of the circulating water, the fraction of time a breathing zone is downwind from the tower, and a monthly virus concentration factor.

Using factors specific to the PDEF project such as the rate of drift, percentage of time the wind direction is toward the nearest residences, and assuming the worst case for circulating water retention time (i.e., short retention time), staff determined that no dilution of exhaust air downwind of the tower is necessary to assure a negligible risk of infection. Due to the high efficiency of the drift eliminator for the proposed project (superior by about two orders of magnitude than the ones considered by DHS in constructing the calculation method), staff expects actual risk to be much lower than the one in ten thousand benchmark. The location of maximum deposition of cooling tower drift is about 98 feet northeast of the tower, within the plant fenceline. This compares to the locations of the nearest residences, which are 1300 feet west and 2000 feet south of the plant.

As noted above, the drift eliminator is designed to operate at high efficiency. Actual performance is typically close to design standards, and should remain so over time with little degradation, assuming proper maintenance.

## TRUCK BYPASS ROAD

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The truck bypass road proposed as part of the PDEF project would divert truck and vehicular traffic to a new street to be constructed parallel to Columbia Street and Santa Fe Street. Staff's **Traffic and Transportation** testimony describes the proposal in more detail. Because additional traffic would be routed near the Central Addition, there are public concerns regarding potential health effects from increased vehicle emissions.

In 1991, the City of Pittsburg certified an EIR for the Waterfront Truck Route and Proposed Assessment District project, which included the same truck route as the one proposed as part of the PDEF project. The EIR examined potential local and regional air quality impacts. It determined the impact of greatest interest on the local scale to be carbon monoxide (CO). The EIR did not find any violations of the CO ambient air quality standards, and expected future concentrations were expected to be below then-current levels due to declining CO emission rates. With respect to PM10 as another localized pollutant, the EIR indicated that, in general, the homes close to the proposed route west of Columbia Street "would not be downwind of the new road under prevailing wind conditions, but PM-10 and road dust could affect nearby homes occasionally when the wind blows from certain directions." The EIR concluded that the project's impacts would not be locally or regionally significant (EIR p.84). Please see staff's **Air Quality** testimony for additional information regarding criteria pollutants related to the truck bypass.

In addition to criteria pollutants, the issue of noncriteria or toxic pollutants from vehicles using the bypass road is also of public concern. For the reasons listed below, staff concludes that potential air quality and related public health impacts on nearby residents are not significant, as the certified EIR also concluded.

The number of vehicles expected from the PDEF proposed truck route would be significantly lower than originally assumed in the EIR (3,900 daily traffic trips compared to 11,300 daily traffic trips based on a 20 year scenario). The new estimate does not include additional facilities originally envisioned for the Assessment District (please see the **Revised Testimony on Traffic and Transportation** for further discussion).

On August 27, 1998, the California Air Resources Board (ARB) listed particulate emissions from diesel-fueled engines as a Toxic Air Contaminant (TAC). Although this action was taken significantly after certification of the EIR in 1991, diesel engine exhaust and gasoline engine exhaust had been included in the Proposition 65 list of Chemicals Known to the State to Cause Cancer since October 1, 1990. Thus, serious health effect implications were known at the time of EIR preparation. The ARB is currently in the process of determining whether future regulatory actions are needed to reduce public exposure to TACs from diesel exhaust and if cost-effective control measures are available.

The ARB focussed the TAC listing on particulate emissions because many of the other constituents of diesel exhaust were already addressed by federal and state

programs. The ARB has adopted measures to reduce particulate matter from diesel-fueled engines, including some which became effective after certification of the 1991 EIR. These include diesel fuel formulation standards (1993), emission standards for new vehicles (phased in from 1982 through 1996), and requirements for fleet inspection and maintenance of heavy-duty vehicles (1998). As a result, the projected ambient air concentrations of particulate matter emissions from diesel engines is expected to decrease 43 percent by 2010. This is significant because while diesel powered vehicles account for only four percent of motor vehicles, they are responsible for about sixty percent of directly emitted particles from motor vehicles.

On an annual basis, the direction of the prevailing winds tends to be from west to east. To the extent that traffic is diverted from west of the Central Addition (on Railroad Avenue and Harbor Street) to east of the Addition onto the bypass, exposure of Central Addition residents to vehicle emissions will decrease over the long-term.

## REFERENCES

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BAAQMD (Bay Area Air Quality Management District). 1998. Toxic Air Contaminant Control Program Annual Report 1997. December.

Bateman. 1999. Brian Bateman, Bay Area Air Quality Management District Air Toxics Section. March 26.

Calpine (Calpine Corporation and Bechtel Enterprises, Inc.). 1998. Application for Certification for Delta Energy Center, (98-AFC-3). Submitted to the California Energy Commission, December 18.

DHS (California Department of Health Services) 1992. Review of Health Risks Relating to Ingestion and Inhalation of Constituents of Reclaimed Water.

PDEF (Pittsburg District Energy Facility, LLC/Parquet) 1998k. Supplement to the Application for Certification, Pittsburg District Energy Facility (98-AFC-1). Submitted to the California Energy Commission, December 7, 1998.

# WORKER SAFETY AND FIRE PROTECTION

Testimony Errata of Ellen Townsend-Smith

## INTRODUCTION

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Staff's original testimony on Worker Safety and Fire Protection was filed on March 10, 1999. This errata is to clarify statements made in the original testimony.

## CORRECTIONS/CHANGES

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Page 73, Paragraph 1: After the first sentence "...during construction and operation.", insert "The IPPs will cover the PDEF project including any aspects of the transmission lines and pipelines under the applicant's control. (PDEF 1998a, Section 5.17, page 5.17-1)"

Page 74, Paragraph 2: After the first sentence "...an Operation Safety and Health Program.", insert "Both programs will cover the PDEF project including any aspect of the transmission lines and pipelines under the applicant's control."



# LAND USE

Revised Testimony of Eric A. Knight

## INTRODUCTION

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Staff's original land use analysis of the Pittsburg District Energy Facility was submitted to the Energy Commission Siting Committee on March 10, 1999. As stated in the Staff Assessment, staff released its analysis prior to receiving input from the City of Pittsburg. On March 26 staff received a letter from Pittsburg that responds to questions staff posed in a January 26 data request. In addition, staff received a letter from the City of Antioch on March 5 that states Antioch's concerns with the proposed gas pipeline. In the letter are conditions that Antioch requests to be incorporated into staff's recommended conditions of certification. As stated in staff's original testimony, time did not allow for these concerns to be fully addressed. Therefore, this revised testimony replaces staff's original testimony.

The land use analysis of the Pittsburg District Energy Facility (PDEF) focuses on two main issues: the project's consistency with local land use plans, ordinances and policies; and the project's compatibility with existing and planned land uses. Indirect land use impacts, such as traffic, air quality, visual effects and noise are discussed in the corresponding sections of the Staff Assessment.

## LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS)

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### STATE

#### ***DELTA PROTECTION ACT OF 1992 (PUBLIC RESOURCES CODE § 29700 ET SEQ.)***

This Act created the Delta Protection Commission with a mandate to develop a long-term resource management plan for the Delta Primary Zone. The goals of the plan are to "protect, maintain and, where possible, enhance and restore the overall quality of the delta environment, including, but not limited to, agriculture, wildlife habitat, and recreational activities." All local general plans for areas within the Primary Zone are required to be consistent with the regional plan. 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 general plans for land use within the Secondary Zone are not required to conform to the regional plan.

### LOCAL

The proposed PDEF and its related facilities will be located in portions of Pittsburg, Antioch and Contra Costa County. Staff reviewed the land use planning documents listed below for goals, policies and regulations relevant to the proposed project. Only those goals, policies and regulations pertinent to this land use analysis are included here.

## **PITTSBURG GENERAL PLAN**

The City of Pittsburg (Pittsburg) General Plan, last updated in 1988, consists of the seven mandatory elements (land use, circulation, housing, open space, safety, conservation and noise) and two optional elements (Parks and Recreation and Public Facilities, Institutions, and Utilities). The Pittsburg General Plan has three functions: 1) to enable the Planning Commission and City Council to establish long-range development policies; 2) to provide a basis for judging whether specific private development proposals and public projects are in harmony with the policies; and 3) to guide other public agencies and private developers in designing projects that are consistent with city policies. General Plan policies relevant to the project include:

### Land Use Element, Section 2.8 Industrial Development:

- Guiding Policy 2.8A seeks to “protect the supply of land suitable for industrial purposes and, in cooperation with the County, actively promote the development of appropriate industrial uses.”
- Guiding Policy 2.8B states Pittsburg’s intent to “retain existing industry, and allow existing industrial uses to expand, consistent with other General Plan policies.”
- Guiding Policy 2.8C encourages “new, clean, employment-intensive industry to locate in Pittsburg.”
- Guiding Policy 2.8D seeks to “protect existing and new residential areas from adverse effects of new industry and, wherever feasible, of existing industry.”

Public Facilities, Institutions, and Utilities Element: Guiding Policy 5.3J requires “the undergrounding of all utility lines adjacent to new construction as a condition of development.”

### Traffic and Circulation Element:

- Implementing Policy 6.2U seeks to “construct an east-west arterial and collector system to serve the industrial areas east of Downtown.”
- Guiding Policy 6.3D seeks to “designate truck routes, and discourage unnecessary through traffic in residential areas through circulation system design and planning.”

## **DOWNTOWN SPECIFIC PLAN**

A portion of the proposed 115 kilovolt (kV) transmission line (interconnecting the PDEF to an existing substation at the PG&E Pittsburg Power Plant) is within the area covered by the Downtown Specific Plan (1986). General Plan land use designations for areas within the Downtown Specific Plan that are traversed by the transmission line include Low Density Residential and Medium Density Residential.

Chapter 3, Downtown Residential Area – Area II: This portion of the Specific Plan includes residentially zoned and developed lands in the downtown area, generally located north of the Santa Fe Railroad, east and west of the commercial area along Railroad Avenue. Section 3.3B allows “public utility ...structures and uses” on approval of a use permit.

***PITTSBURG ZONING ORDINANCE***

The City of Pittsburg Zoning Ordinance (Title 18 of the Municipal Code) was adopted on March 19, 1990. The purpose of the zoning ordinance is to protect the public health, safety, and general welfare, and to implement the policies of the City General Plan. It contains regulations that establish zoning districts, govern the use of land and the placement of buildings and improvements within districts, and establish performance standards. The following provisions of the Pittsburg Zoning Ordinance are applicable to the project:

Section 18.06.030.B allows public streets and utilities in any zoning district.

Section 18.08.060.W classifies the water and natural gas pipelines as Minor Utilities.

Section 18.08.100 classifies a power plant as a “heavy manufacturing industrial use.”

Section 18.54.010 allows heavy manufacturing industrial uses in a General Industrial District on approval of a use permit.

Section 18.54.015 prescribes the following property development regulations for General Industrial Districts:

Minimum Lot Area (sq. ft.)	20,000
Minimum Lot Width (ft.)	100
Minimum Yards (ft.)	
Front	10
Side	N/A
Corner Side	10
Rear	N/A
Maximum Height of Structures (ft.)	50
Maximum Lot Coverage	75%
Maximum Floor Area Ratio (FAR)	0.75
Minimum Site Landscaping	5%

Section 18.54.020 requires design review of all projects proposed within a General Industrial District. The information required for design review is listed in section 18.36.210.

Section 18.54.100 provides an additional height allowance for structures in a General Industrial District equal to the number of feet the structure exceeds all minimum yard requirements, but only up to a maximum height of 75 feet.

Chapter 18.78 applies regulations and design standards for off-street parking and loading facilities in all zoning districts. Section 18.78.040 requires heavy manufacturing uses to provide 1 off-street parking space per 1,000 sq. ft. of gross building floor area. Heavy manufacturing uses fall within Group Number II of Schedule B (section 18.78.040) and must comply with the following off-street loading space requirement:

<u>Gross Floor Area (sq. ft.)</u>	<u>Number of Spaces Required</u>
15,000 to 30,000	1
30,000 to 100,000	2
100,000 and over	3

Section 18.80.020 allows a chimney or similar tower-like structure covering not more than 10% of the ground area covered by the structure to which it is accessory to exceed the maximum permitted height in an Industrial District by 20 feet.

Section 18.80.030 allows “a public utility distribution and transmission line, tower and pole and underground facility for distribution or transmission of the same, and appurtenances” in all zoning districts, without the need for a use permit (unless it is proposed in a residential district) and not subject to building height limitation.

Section 18.84.010 requires that an accessory structure in a General Industrial District comply with all regulations applicable to the main building on a site.

Section 18.84.205.B allows a maximum of 6 feet for a fence or wall built in a Residential District.

Section 18.84.205.F provides two exceptions to the maximum height allowed for a fence or wall.

## ***ANTIOCH GENERAL PLAN***

The current City of Antioch General Plan (1988 - 2000) consists of the seven mandatory elements and several optional elements such as public infrastructure, growth management, social services, economic development and community image. The open space, conservation and noise elements have been combined within a broader category of Resources Management. The following General Plan policies are relevant to the project:

Community Character Goal – Policy #5: The City should continue to develop and maintain suitable and adequate landscaping, *utility undergrounding* (emphasis added), sign control, site and building design, parking and performance standards to ensure that all existing and future commercial and industrial developments are compatible with surrounding land uses.

Community Design Goal – Policy #6: Where not constrained by security or safety concerns, utility easements should be developed as linkages between sections of the City through the provision of bikeways, pedestrian pathways as well as locations for passive recreation activities near residential areas.

Health and Safety Goal – Policy #3 (Bullet #6): New pipelines and other channels carrying hazardous materials shall avoid residential areas and other immobile populations to the greatest extent possible.

### ***ANTIOCH ZONING ORDINANCE***

The current City of Antioch Zoning Ordinance was adopted on November 8, 1994. The following provisions of the Antioch Zoning Ordinance pertain to the project:

- New pipelines and other channels carrying hazardous materials shall avoid existing and approved residential areas and other immobile populations to the greatest extent possible. (P5.19)
- Pipelines no longer in use shall be abandoned to the satisfaction of the City Engineer and shall comply with all applicable Environmental Protection Agency (EPA) requirements for such abandonments. (P5.22)

### ***CONTRA COSTA COUNTY GENERAL PLAN***

The Contra Costa County General Plan (1995 – 2010) was adopted on July 1996. The following goals and policies are relevant to the project:

#### Transportation and Circulation Element:

Railroad Goal 5-V states that the County will “protect the existing railroad rights-of-way in the county for continued railroad use, utility corridors, roads, transit facilities, trails and other public purposes.”

#### Railroad Policies:

- Policy 5-72 states that “railroad rights-of-way shall generally be designated for Public/Semi-Public uses to reflect their importance to the County’s economy.”
- Policy 5-73 states that “encroachments into railroad rights-of-way by urban uses which would impact current rail operations or preclude future use of the corridors for trails or other public purposes shall be limited.”
- Policy 5-74 states that “trails shall be considered an appropriate interim use of an abandoned railroad right-of-way.”
- Policy 5-75 states that “encroachment of unsuitable land uses adjacent to abandoned railroad right-of-way shall be prevented where such uses would conflict with future uses of the right-of-way identified in the Land Use, and Transportation and Circulation Elements.”

## **CONTRA COSTA COUNTY ZONING ORDINANCE**

Railroad Corridor Combining District (Ordinance No. 87-19): Ordinance No. 87-19 added a "Railroad Corridor Combining District" overlay zone to the existing zoning designations of all railroad rights-of-way owned or occupied by Santa Fe, Southern Pacific, Union Pacific, and Bay Point-Clayton within the unincorporated area of the County. The ordinance states:

"All land uses that were previously allowed under the existing, underlying zoning designations along the railroad right of way are allowed under this 'Railroad Corridor Combining District' Ordinance, provided that no new land uses and/or structures, including residences and pipelines for the transmission of oil, gas, water or other substances shall be established, and no such uses and/or structures presently existing shall be substantially expanded or altered, or demolished, without first having been granted a conditional use permit, through procedures established in the County Ordinance Code."

## **SETTING**

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The PDEF site is located within the Northeast River planning subarea, a major industrial sector of the City of Pittsburg. With the exception of the PG&E Power Plant west of downtown, all of Pittsburg's heavy industrial uses are in Northeast River (Pittsburg 1998). Other industrial uses in the immediate vicinity include a petroleum coke handling facility, power plant and steel mill (see **LAND USE Figure 1**). Historically, manufacturing has been the foundation of Pittsburg's economy. In fact, Pittsburg got its name in honor of the American birthplace of the steel industry after Columbia Geneva Steel Company opened the first steel mill there in 1911. But, industry in Pittsburg is in a state of decline. The percentage of city residents employed in manufacturing has dropped from 21 percent in 1980 to 13 percent in 1990 (Pittsburg, 1998). The 1988 General Plan envisions the future of industry in Pittsburg as one of change—a move away from heavy industrial towards light-industrial and research and development facilities. However, the Plan states that "whatever shape and course Pittsburg's industry takes in the future, the city probably has more than sufficient industrial land to meet its future needs."

Although the PDEF site is in Pittsburg, the project also will affect the City of Antioch and the County of Contra Costa. Portions of the power plant's linear facilities (water and natural gas supply pipelines and electrical transmission line) are located within the city limits of Antioch and the unincorporated area of the County.

## **SITE AND VICINITY DESCRIPTION**

The proposed power plant will occupy 12 acres of an undeveloped 93.95-acre parcel owned by USS-POSCO. The Assessor's Parcel Number (APN) is 073-030-12. The project site borders on East 3<sup>rd</sup> Street, which runs along the northern boundary of the parcel. The site is designated General Industry (IG) on the City of Pittsburg General Plan Land Use Map. The IG land-use classification is defined to include "large areas of major industrial manufacturing uses, including the existing

operations such as USS-POSCO (formerly U.S. Steel) and Dow Chemical.” The site is zoned General Industrial (IG) District (see **LAND USE Figure 2**). The Pittsburg Zoning Ordinance states that the purpose of the IG District is:

To provide sites for the full range of manufacturing, industrial processing, general service, and distribution uses deemed suitable for location in Pittsburg; and to protect Pittsburg’s general industrial areas, to the extent feasible, from disruption and competition for space from unrelated retail and commercial uses that could more appropriately be located elsewhere in the city. Performance standards will minimize potential environmental impacts.

A portion of APN 073-030-12 to the southwest of the PDEF site is zoned Limited Industrial (IL). The IL zoning designation for this portion originates from when it was a separate parcel before being assembled by USS-POSCO (Jerome 1999, pers. comm.). The Pittsburg Zoning Ordinance states that the purpose of the IL District is: “To provide opportunities for smaller or less adverse manufacturing and industrial service uses, as well as related business and commercial services on typically limited size sites adjacent to general industrial uses.” Land uses and zoning in the vicinity of the PDEF site are as follows:

- North / Northwest – Immediately north of the PDEF site and across East 3<sup>rd</sup> Street is the Pittsburg Marine Terminal (PMT) petroleum coke handling facility and GWF Power Plant No.1. Zoning is General Industrial. To the north of these facilities are New York Slough and Browns Island. To the northwest of, but not contiguous with, the PDEF site is Limited Industrial zoning. To the west of these parcels is the Bay Harbor Park residential subdivision. Residences on East 3<sup>rd</sup> Street and Riverway Drive are about 1,800 feet from the northwest corner of the site (PDEF 1998a).

Insert LAND USE FIGURE 1

Insert LAND USE FIGURE 2

- West – To the west of the PDEF site are Service Commercial (CS) uses. The Pittsburg Zoning Ordinance states that the purpose of the CS District is “to provide opportunities for retail and service businesses on transitional sites between commercial and industrial areas, including businesses not allowed in other commercial districts because they have industrial characteristics, require heavy vehicle or truck traffic, or have certain other adverse impacts.” To the west of and adjacent to these land uses is Johns Manville Products Company, zoned IG. To the west of and adjacent to Johns Manville is the Village at New York Landing residential subdivision.
- South / Southwest – South of the PDEF site and across Santa Fe Avenue is the Central Addition residential neighborhood. These residences are about 2,000 feet from the southern boundary of the site (PDEF 1998a). About 1,300 feet from the southwest corner of the PDEF site is the residential area at Harbor and East 8<sup>th</sup> Streets. These houses will be the closest residences to the proposed power plant (PDEF 1998a).
- East – Immediately east of the PDEF parcel is the USS-POSCO steel mill. East of USS-POSCO is Dow Chemicals. Zoning is General Industrial.

## TRANSMISSION FACILITIES

Alternate 115 kV Transmission Line (Route 1) – This alternate overhead transmission line for connection to the electrical grid is located entirely on USS-POSCO property. Sections of this new line will parallel existing transmission lines. Zoning is IG.

Alternate 115 kV Transmission Line to USS-POSCO (Route 2) – This alternative route for delivering electricity to USS-POSCO would travel south along Columbia Street before turning east at the Sacramento Northern, Atchison Topeka and Santa Fe railroad right-of-way. Sections of this new line will parallel existing transmission lines. Route 2 is located entirely on USS-POSCO property on land zoned IG.

Proposed 115 kV Transmission Line (Route 10) – The proposed 115 kV transmission line for connection to the electrical grid exits the PDEF switchyard as an overhead line, running southwest to the east side of Harbor Street at 8<sup>th</sup> Street. A transition station (needed for transitioning an overhead line to an underground line or vice versa) is proposed at this location. This aboveground segment of Route 10 traverses undeveloped land zoned IG and IL. From here the line will travel west underneath the eastbound lane of 8<sup>th</sup> Street (see **TRANSMISSION SYSTEM ENGINEERING Errata Figure 1**). The area traversed by this segment of Route 10 is within the Downtown Specific Plan. Zoning designations are Duplex Residential (R-2), Multiple Family Residential (R-3), Residential Semi-Commercial (R-4), and Central Commercial (C-2). Since publication of the Staff Assessment, the location of the western transition structure has moved. During the March 24 Staff Assessment Workshop, officials from the Delta Diablo Sanitation District raised concerns that the proposed location, between the western-most PG&E fuel storage

tank and the pumping station (as shown in Patch 1998c), may conflict with several large diameter underground water lines. In a conference call on March 30<sup>th</sup> between the City of Pittsburg, Delta Diablo, the Energy Commission and the applicant, a new location agreeable to all was identified. The goal was to identify a site that would not conflict with existing and planned land uses, including the water pipelines and a potential redevelopment project between the pump station site and Montezuma Street. As currently proposed, the underground transmission line would turn north from 8<sup>th</sup> Street to travel along the alignment of the eastern-most fence line of the pump station site. The line would then turn west at the edge of the pump station property along the fence line and resurface at a transition structure beyond the northwest corner of the pumping station site. It would then travel north as an overhead line along the original Route 10 to the PG&E Pittsburg Power Plant Substation (Patch 1999). The overhead portion of the transmission line is within the unincorporated area of Contra Costa County on land zoned Heavy Industrial (H-I).

Alternate Segment to the Proposed 115 kV Transmission Line (Route 10A) – After emerging as an overhead line, Route 10A would continue the transmission line further west along the abandoned Sacramento Northern railroad right-of-way. This route would take the line onto land within the unincorporated area of Contra Costa County. The railroad right-of-way is designated Public/Semi-Public (PS) on the County General Plan Land Use Map. The County General Plan states that the PS designation includes “privately owned transportation and utility corridors such as railroads, PG&E lines, and pipelines.” The area is zoned H-I and subject to a special Railroad Corridor Combining District. It would travel within the railroad ROW for nearly 0.5 miles before turning northeast to follow a major transmission line corridor into the PG&E power plant.

Proposed 115 kV Transmission Line to USS-POSCO (Route 11) – The proposed route for delivering electricity to USS-POSCO will take the transmission line south from the PDEF, just west of the construction laydown area. Route 11 will then turn east (south of the laydown area) and run toward Columbia Street. From here it follows the same path as Route 2. Route 11 is located entirely on USS-POSCO property on land zoned IG.

## **WATER SUPPLY PIPELINES**

Reclaimed Water Supply and Wastewater Return Pipelines (Route 4) – These underground pipelines connect the PDEF to the Delta Diablo Wastewater Treatment Facility (DDWTF) in the City of Antioch. The first 2.5 miles of Route 4 are located in Pittsburg on land zoned IG. The final 1,500 feet of Route 4 is located in Antioch on land zoned Planned Industrial District (M-1). These pipelines travel south from the PDEF following the alignment of an existing 60 kV transmission line and turn east at the Pittsburg-Antioch Highway. They travel along the north side of the highway (in the road right-of-way) to the DDWTF.

Alternate Reclaimed Water Supply and Wastewater Return Pipelines (Route 5) – Route 5 is a 2.9-mile long alternative route for connection to the DDWTF. Route 5 is located almost entirely within the City of Pittsburg. Zoning for lands the pipeline

would occupy in Pittsburg is IG. The final 1,500 feet of Route 5 is located in Antioch on land zoned Planned Industrial District (M-1). Route 5 follows the same path as Route 4 as it leaves the PDEF before turning east to parallel the Sacramento Northern, Atchison Topeka and Santa Fe railroad for over 1 mile. Route 5 then turns south, travelling along a PG&E right-of-way for an existing 115 kV transmission line until it reaches the Pittsburg-Antioch Highway. From here Route 5 follows the highway to the DDWTF.

Proposed Sanitary Sewer and Potable Water Lines (Route 7) – About 0.02 miles long, Route 7 will connect the PDEF to an existing sanitary sewer line and an existing water main located adjacent to the northwest corner of the proposed PDEF site on East 3<sup>rd</sup> Street. Route 7 is located primarily on USS-POSCO property. The Pittsburg zoning designation for this area is IG.

Alternate Pipeline Corridor (Routes 11 and 12) – These are alternate pipeline corridors for the portions of Routes 4, 5, and 6 that run down Columbia Street. Both are located on USS-POSCO property south of the PDEF site.

## **NATURAL GAS SUPPLY PIPELINE**

Proposed Fuel Gas Pipeline (Route 6) – This is a 3.8-mile long underground natural gas pipeline linking the PDEF with an existing PG&E 30-in. fuel gas line located in Buchanan Road in Antioch. Route 6 follows the same path as Route 5 until reaching the Pittsburg-Antioch Highway. From the highway the proposed gas pipeline continues south for about 0.75 miles along a PG&E 115 kV transmission line right-of-way, before turning east to follow an existing PG&E 26-in. gas pipeline in the East Bay Municipal Utility District (EBMUD) easement. For another 0.75 miles Route 6 follows the EBMUD easement, which is being utilized as the East Bay Regional Park District Delta DeAnza Trail (a paved path for bicycling and walking), before turning southeast to connect with the PG&E gas line in Buchanan Road. Pittsburg zoning designations along the gas pipeline route include IG, IP (Industrial Park), CC (Community Commercial), CS, and GQ (Governmental and Quasipublic). The gas pipeline crosses into the City of Antioch as it travels south passed Delta Fair Boulevard. In Antioch, the gas pipeline is adjacent to residential and commercial zoned properties.

## **OTHER LINEAR FACILITIES**

Proposed Steam Pipeline (Route 3) – This is a 0.6-mile long aboveground pipeline extending from the PDEF to USS-POSCO's boiler plant. Route 3 is located entirely on USS-POSCO property on land zoned IG.

Proposed Storm Drain Discharge (Route 8) – Storm water from the PDEF site will be discharged through an existing 24-in. storm drain pipe which exits the site at the northeastern side, crosses East 3<sup>rd</sup> Street and discharges to New York Slough.

## **TRUCK BYPASS ROAD**

To facilitate access to the PDEF site, a new two-lane road will be built connecting the Pittsburg-Antioch Highway with Harbor Street. Starting about 300 feet east of the intersection of the highway and Columbia Street, the truck bypass road will

parallel an existing PG&E easement that runs behind the homes on the east side of Columbia Street. Pittsburg zoning designations for land this segment of the new roadway will occupy are IG and Governmental and Quasipublic (GQ). Construction of this section will require relocation of the Central Park baseball field about 190 feet east of the new road. Near the intersection of Columbia Street and East Santa Fe Avenue, the truck bypass road will curve west and run parallel to East Santa Fe Avenue on vacant land zoned Single-Family Residential (RS) that lies between the street and the railroad tracks. The truck bypass road will join Harbor Street at a new signalized intersection. A 12-foot sound wall will be constructed between the truck bypass road and homes in the Central Addition neighborhood. PDEF will install landscaping between the sound wall and East Santa Fe Avenue and the residences along Columbia Street.

## **IMPACTS**

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Appendix G of the Guidelines to the California Environmental Quality Act (CEQA) provides that criterion for evaluating whether a project will have a significant effect on land use is whether it will conflict with any applicable land use plans, policies or regulations. The laws ordinances, regulations, standards (LORS) and policies cited earlier in this staff assessment have been analyzed below to determine the project's compliance with these provisions. This is often referred to as a "consistency" analysis because its intent is to determine the extent to which the project is consistent or at variance with each requirement or standard.

## **COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS AND STANDARDS**

### ***THE DELTA PROTECTION ACT OF 1992***

The entire project is located in the Delta Secondary Zone and, thus, no part of the proposed project will encroach upon land within the Delta Primary Zone. The Delta regional plan does not supersede the authority of local governments over areas within the Secondary Zone. Therefore, the Act does not apply to the project.

### ***PITTSBURG GENERAL PLAN***

#### Land Use Element

The project is consistent with Policy 2.8A because it would be located in the Northeast River industrial area and use of the site for power generation is consistent with its General Industry land use designation. It is consistent with Policy 2.8B because the project will supply an existing industrial facility, USS-POSCO, with its need for electricity and steam. Although not "employment-intensive" as encouraged by Policy 2.8C, the City of Pittsburg will receive 60 percent of any project profits as part of a development agreement between the developer and the City.

### Public Facilities, Institutions, and Utilities Element

The proposed transmission line (Route 10) will be consistent with Policy 5.3J because it will be underground in the median of 8<sup>th</sup> Street.

### Traffic and Circulation Element

The Pittsburg General Plan shows a Planned Arterial Street within the industrial land use area (USS-POSCO property) between Harbor Street and Loveridge Road. The PDEF truck bypass road is a project that furthers that goal and therefore would be consistent with Implementing Policy 6.2U to “construct an east-west arterial and collector system to serve the industrial areas east of Downtown” (Pittsburg 1999). The truck bypass also is consistent with 6.3D because it serves the intent of this policy to divert truck traffic from residential areas.

## **PITTSBURG ZONING ORDINANCE**

Section 18.06.030.B: The truck bypass road will occupy lands zoned GQ, IG and RS. The new road is consistent with the zoning ordinance because this section allows public streets in any zoning district.

Section 18.08.060.W: As Minor Utilities, the water and natural gas pipelines are a permitted use in all zoning districts and require no further land use regulation (Pittsburg 1999).

Section 18.54.010: Power plants are normally a conditional use in General Industrial Districts. Since the issuance of a certificate by the Energy Commission is in lieu of any local permit (Pub. Resources Code, § 25500), a conditional use permit will not be required. However, conditions that Pittsburg would have required absent the Energy Commission’s jurisdiction, as stated in their March 26<sup>th</sup> letter, have been incorporated into staff’s conditions of certification.

Section 18.54.015: The PDEF’s heat recovery steam generator (HRSG) stacks (150 feet) and the auxiliary boiler stack (100 feet) exceed the maximum height allowed (50 feet) within the IG District. The zoning ordinance allows two exceptions to the 50-foot height limitation. Section 18.54.100 allows one foot of additional height for each foot the structure is set back from the minimum yard requirements, but only up to a total height of 75 feet. Section 18.80.020 provides for an additional 20 feet over the maximum height permitted in an Industrial District for a chimney or similar tower-like structure covering not more than 10% of the ground area occupied by the structure to which it is accessory. Staff was originally informed that the base height and exceptions are only cumulative up to a maximum of 75 feet (Gangapuram 1999, pers. comm.) However, the 95-foot maximum height for a tower structure in an IG zone has been the accepted interpretation in two previous variance applications in the vicinity of the PDEF site: the PMT coke storage domes (VA-95-02) and the Air Liquide gas manufacturing facility (VA-97-04) (Pittsburg 1999). Even with the additional height allowances provided by Section 18.54.100 and Section 18.80.020 the HRSG stacks would surpass the 95-foot height

maximum by 55 feet. Therefore, the project is not consistent with this zoning requirement.

At a data request workshop staff held in Pittsburg on February 9, 1999, the City of Pittsburg stated that a variance (pursuant to Section 18.28.010.B) would be required to bring the project into compliance with the zoning ordinance. At the Staff Assessment Workshop on March 24, 1999, the applicant stated that PDEF would submit the variance application to Pittsburg within the next 10 days. Due to the public interest in this case, the findings for the variance must be made by the City of Pittsburg Planning Commission. Section 18.16.050 of the zoning ordinance requires Pittsburg to make all of the following findings before granting the variance request:

1. Because of special circumstances concerning the subject property including size, shape, topography, location or surroundings, the strict application of the zoning regulations deprives the property of privileges enjoyed by other properties in the vicinity and in the same land use district (IG).
2. The variance will not constitute a grant of special privilege which is not generally available to other property in the vicinity and in the same land use district (IG).
3. The variance substantially complies with the intent and purpose of the land use district to which the property is classified (IG).

The above findings have previously been made for the two aforementioned industrial projects in this area (Pittsburg 1999). The City of Pittsburg tentatively plans to use the Committee's Presiding Member's Proposed Decision, scheduled for release on June 14, 1999, as its environmental document for processing the variance request (CEC 1999, pers. comm.). During a March 29<sup>th</sup> conference call with the City of Pittsburg, staff was informed that the Pittsburg Planning Commission will decide on the variance request at a June 22<sup>nd</sup> hearing. The decision will then be followed by a 10-day appeal period. Therefore, the outcome of the variance request will be known prior to the Energy Commission adopting its final decision on July 28, 1999. Until Pittsburg makes its final decision, staff cannot recommend a finding of conformity pursuant to Public Resources Code section 25525. In regards to the other property development regulations, staff has proposed a condition of certification (**LAND-1**) to ensure compliance with Section 18.54.015.

Section 18.54.020: The applicant has not supplied a site plan with sufficient detail (pursuant to section 18.36.200) to determine compliance with the design review requirement. Compliance with section 18.54.020 would be ensured by proposed condition **LAND-2**.

Chapter 18.78: The applicant has not supplied a site plan with sufficient detail (pursuant to section 18.36.200) to determine compliance with off-street parking and loading space requirements. Compliance with applicable requirements in Chapter 18.78 would be ensured by proposed condition **LAND-2**.

Section 18.80.030: The City of Pittsburg interprets this section to apply to the PDEF even though it is arguably not a “public utility” (Gangapuram 1999, pers. comm.). Therefore, the transmission line and transition structures are an allowed use in all zoning districts in which they are proposed to be sited and not subject to a height restriction. But, since the proposed transmission line traverses a residential district, it would ordinarily require a conditional use permit. The Energy Commission’s authority over all project-related linear facilities supersedes this requirement. However, conditions that Pittsburg would have required absent the Energy Commission’s jurisdiction, as stated in their March 26 letter, have been incorporated into staff’s conditions of certification. As aboveground structures, the transition facilities would require design review approval pursuant to Section 18.54.020. Compliance with this requirement would be ensured by proposed condition **LAND-2**.

Section 18.84.205.B: The truck bypass and sound wall are both located within an RS zoning district. The sound wall exceeds the maximum height allowed for a fence or wall built in a Residential District by 6 feet. Subsection F allows for two exceptions to the height regulations.

Section 18.84.205.F: The first exception states that the height of a wall may be established by the planning commission upon acceptance of mitigation measures of an Environmental Impact Report (EIR) to mitigate adverse noise impacts. The truck bypass as defined by the PDEF differs somewhat from the project described in the EIR for the Waterfront Truck Route. Certified by the City of Pittsburg in April 1992 (Resolution 92-7794), the EIR includes a combination 10- and 12-foot sound wall as mitigation for adverse noise impacts. As proposed by the applicant, the project-related sound wall will be 12 feet in height along its entire length to ensure mitigation for adverse noise impacts. Please refer to the **NOISE** section of the Staff Assessment for more information. Subsection F.2 allows the maximum height standard to be exceeded in conjunction with the issuance of a use permit, or in this case, a license from the Energy Commission (Pittsburg 1999). Thus, staff concludes that the sound wall is consistent with Section 18.84.205.

## ***ANTIOCH GENERAL PLAN***

The project’s water supply and gas supply pipelines are consistent with Policy 5 of the Community Character Goal because they will be underground. The gas pipeline is consistent with Policy 6 of the Community Design Goal because the Delta DeAnza trail, which a portion of the pipeline follows, will be continued as a pedestrian and bike trail. Policy 3 of the Health and Safety Goal requires new pipelines carrying hazardous materials to avoid residential areas “to the greatest extent possible.” Although the gas pipeline follows existing utility corridors, including the Delta DeAnza trail that contains an existing 26-in. gas pipeline and a water pipeline, it would pass through a residential area in Antioch. Please refer to the **FACILITY DESIGN** section of the Staff Assessment for a discussion of potential impacts associated with the gas pipeline and proposed condition **MECH-5** to ensure that the pipeline is installed and operated safely.

## **ANTIOCH ZONING ORDINANCE**

The City of Antioch ordinarily would require a conditional use permit for a natural gas pipeline (Carniglia 1999, pers. comm.). The Energy Commission's authority over all project-related linear facilities supersedes this requirement. However, staff typically contact local planning agencies to inquire about conditions that they would require of an applicant if they had licensing authority over a project. The Antioch Zoning Ordinance requires that "new pipelines and other channels carrying hazardous materials shall avoid residential areas and other immobile populations to the greatest extent possible." A portion of the pipeline is proposed to be located in the Delta DeAnza Trail (an established utility corridor) which is adjacent to a residential area. Antioch would normally implement this zoning requirement through its conditional use permit process (Carniglia 1999, pers. comm.). Staff contacted Antioch on February 9, 1999 to inquire about specific conditions that they would impose on the gas pipeline absent the Energy Commission's licensing authority. On March 4, 1999 staff received a letter from Antioch listing conditions that they would like to see incorporated into the Staff Assessment. Only those proposed conditions related to land use are addressed here. For the others, please refer to the **TRAFFIC AND TRANSPORTATION, FACILITY DESIGN, CULTURAL RESOURCES,** and **SOCIOECONOMICS** sections of the Staff Assessment.

In the letter, Antioch has identified that the existing wood fencing along the PG&E easement north of the Delta DeAnza Trail is in poor condition and needs replacement. On condition of locating its gas pipeline in the easement, Antioch requests that PDEF replace these fences with a 6-foot tall decorative masonry wall treated with a graffiti-resistant coating. Additionally, Antioch has identified that some properties may be encroaching on the PG&E easement and that because the alignment of the fencing is questionable, the existing gas pipelines in the easement may be close to or run inside of the residential fences. Antioch requests that PDEF conduct surveys to determine what illegal encroachments exist and to determine the alignment of existing gas pipelines.

Staff has visited the area and agrees with Antioch that the alignment of the residential fencing may be questionable. But staff has not identified a zoning regulation that requires a masonry wall to be constructed on condition of installing a gas pipeline. In a conference call on March 29, Mr. Ron Bendorf with Antioch Community Development Department identified Section 9-5.1601.F of the Zoning Ordinance as the City's basis for requiring the wall. Section 9-5.1601.F reads: "Walls between residential and non-residential uses shall be of masonry construction." Staff has interpreted this section to mean that if a wall were to be constructed between residential and nonresidential uses that the wall must be of masonry construction. It does not appear to require walls to be installed, but only prescribes the type of material of which they must be constructed.

The PG&E easement currently contains both an electrical distribution line and transmission line and several gas pipelines. Staff is uncertain where the proposed natural gas pipeline would be located in relation to the existing linear facilities. If it is necessary to relocate residential fences that are illegally encroaching on the easement in order to construct the gas pipeline, current zoning requirements

pursuant to Section 9-5.1601.F would require that the replacement fencing be a wall of masonry construction. In a meeting with Antioch on April 7th, the City amended the requirement in the March 4<sup>th</sup> letter that a masonry wall be constructed. Antioch now requests that PDEF replace any fencing removed or displaced as a result of construction of the pipeline, and that the design and material used be to the City's specifications. Thus, if it is necessary for PDEF to relocate residential fences (to the location of the legal boundary of the easement) in order to construct the pipeline, staff has proposed a condition of certification (**LAND-3**) to ensure that the replacement fencing meets Antioch's specifications. On the other hand, if there is sufficient space in the easement to install the pipeline without disturbing the existing wood fencing, there is no apparent regulation that would require PDEF to build the masonry wall. To ensure safety during construction and operation of the gas pipeline, staff has proposed a condition of certification (**MECH-5**) in the **FACILITY DESIGN** section of the Staff Assessment.

### ***CONTRA COSTA GENERAL PLAN***

As originally proposed in the December Supplement to the AFC, staff was concerned that the western transition structure had the potential to conflict with policies in the Transportation and Circulation Element concerning railroad rights-of-way. While the General Plan acknowledges the use of railroad rights-of-way as utility corridors, it also seeks to restrict uses that would preclude future use of abandoned railroad corridors (such as the Sacramento Northern) "for trails or other public purposes." Due to the size of its footprint (50 feet by 90 feet), staff and the County were concerned that the transition structure had the potential to preclude future use of the corridor for public purposes. The location currently being proposed by the PDEF beyond the northwest corner of the Delta Diablo pumping station site, clearly will not conflict with the abandoned railroad right-of-way.

### ***CONTRA COSTA ZONING ORDINANCE***

The portion of the abandoned railroad right-of-way within the County's jurisdiction is subject to the Railroad Corridor Combining District overlay zone. The overlay zoning prohibits the establishment of any new land uses or structures within the railroad right-of-way without first obtaining a conditional use permit. The Energy Commission's authority over all project-related linear facilities supersedes this requirement. In a letter to staff (Contra Costa County 1999), the County requested that the Energy Commission's analysis of the PDEF "consider the opportunity costs of committing the right-of-way to electrical transmission uses and foregoing other possible future corridor uses such as transit line." The letter also states that "if the opportunity costs cannot be altogether avoided, perhaps they can be minimized by appropriate site planning." Since publication of the Staff Assessment the location of the western transition station has moved to the northwest corner of the Delta Diablo pumping station site. In its new location, the transition structure clearly will not conflict with future use of the abandoned railroad right-of-way.

### **COMPATIBILITY WITH EXISTING AND PLANNED LAND USES**

In assessing potential land use impacts, staff makes a determination of the proposal's compatibility with existing and planned land uses. Compatibility refers to how well a project "fits" into an established community. A project may be

incompatible with surrounding land uses if: 1) it introduces a use that is out of character with existing uses; 2) it may stimulate or change existing land ownership and development pattern; or 3) it may affect an area so negatively that existing uses are likely to abandon the area. In determining compatibility, staff also looks to Appendix G of the CEQA Guidelines for guidance. According to Appendix G, a criterion for evaluating whether a project will have a significant effect on land use is whether it will physically divide an established community.

## ***PROPOSED GENERAL PLAN UPDATE***

Pittsburg's current General Plan identifies the Northeast River area, the location of the proposed power plant, as a "special management area" for which a specific plan should be prepared. The General Plan states that "this designation recognizes that there are coexisting residential and industrial uses with special needs which require evaluation for future development." A specific plan for Northeast River has not been prepared (Gangapuram 1999, pers. comm.).

In September 1997, the City began the process to update its General Plan. In June 1998, it published the *Pittsburg General Plan Update: Existing Conditions and Planning Issues*. As its title suggests, the document describes preliminary planning issues for the General Plan update. Energy Commission staff recognizes that this report will be used as a basis for preparing alternative land use and transportation plans, policy-making for the General Plan, and the environmental setting portion of the Environmental Impact Report on the General Plan. It should be stressed that this report does not contain any adopted policies or specific plan and physical development proposals, but only serves to begin the discussion on key planning issues which will continue to be discussed and debated throughout the update process<sup>1</sup>. Of relevance to the PDEF, the report states that there is "inadequate" buffering between industrial facilities and residential neighborhoods and "in particular, the industrial Northeast River area transitions abruptly to downtown neighborhoods at Harbor Street" (Pittsburg 1998). It recommends that the General Plan update investigate what types of buffers would provide the needed transition between residential and industrial areas. Thus, resolution of this issue is beyond the scope of staff's PDEF analysis. Absent any adopted policies or ordinances for a buffer in this area, staff's analysis will rely on current General Plan policies and zoning requirements.

## ***POWER PLANT***

Other heavy industrial land uses, as well as service commercial uses are in the immediate vicinity of the power plant site. Thus, the proposed facility is compatible with the industrial character of the immediate surrounding land uses. The power plant would occupy 12 acres of an approximately 94-acre parcel (APN 073-030-12). The currently undeveloped parcel is mostly designated General Industrial on both the Pittsburg General Plan Land Use and Zoning maps. A portion of the parcel is designated Limited Industrial, but no part of the PDEF site is within this zoning

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<sup>1</sup> Pittsburg expects to complete the process of updating its General Plan within a year from now (Jerome 1999).

district. The project is consistent with the purpose of these designations and would not constitute a change in the current development pattern of the area (as established by the General Plan). Staff agrees with the applicant's assertion that the project represents "further development of an area committed to industrial use rather than the introduction of industry to a non-industrial area" (PDEF 1998a).

No residential uses adjoin the power plant site. The nearest residences (Harbor and East 8<sup>th</sup> Street) are about 1,300 feet from the site and separated from the power plant by the undeveloped portion of APN 073-030-12 designated for limited industrial use. Residential uses to the northwest (Bay Harbor Park) and west (Village at New York Landing) are separated from the proposed power plant by existing service commercial and industrial uses. A 12-foot sound wall, being constructed as part of the truck bypass road will provide buffering for residences to the south (Central Addition) of the site. Residential uses could be further buffered from the power plant if Pittsburg develops policies in the General Plan update that attempt to resolve—through landscaping, parks and/or transitional land uses—what Pittsburg has identified as "inadequate" buffering between industrial facilities and residential neighborhoods.

### ***TRANSMISSION LINES***

Transmission line routes 1, 2 and 11 are compatible with existing and planned land uses. Although these are aboveground lines, they will not physically divide any established community. These transmission lines are located entirely on USS-POSCO property and will follow, for the most part, existing utility corridors.

The proposed 115 kV transmission line (Route 10) will be compatible with existing and planned land use in Pittsburg. The transmission line will be placed underneath the eastbound land of 8<sup>th</sup> Street between Harbor and Montezuma Streets and will not conflict with existing or planned residential uses. A 120-lot single-family residential subdivision, called Marina Walk, is being considered for a large vacant area bounded by Marina Boulevard, West 8<sup>th</sup> Street, Herb White Way, and buildings along Railroad Avenue. Staff was informed in a March 29<sup>th</sup> conference call with the City of Pittsburg that the vacant property south of Marina Park is being considered for the site of a low- and moderate-income housing development or a school. Nor will the underground transmission line conflict with the proposed conversion of the 8<sup>th</sup> Street median into a linear park (Pittsburg 1998). PDEF has agreed to construct the linear park in the abandoned Sacramento Northern railroad right-of-way along 8<sup>th</sup> Street from Harbor to Beacon Streets. Staff has proposed a condition of certification to ensure that the park is built and that it meets Pittsburg's specifications (see **LAND-4**). Staff does not expect the transition structures to cause a significant land use impact. As currently proposed, the underground line and western transition structure will not conflict with Delta Diablo operations and underground water lines. In addition, since the transition structure has been relocated it no longer has the potential to encroach on the portion of the abandoned Sacramento Northern railroad right-of-way under the County's jurisdiction. Please refer to the **VISUAL RESOURCES** section for a discussion of potential adverse visual impacts of the transition structures and the mitigation measures proposed to avoid these.

Route 10A, an alternate segment to Route 10, may potentially be incompatible with future use of the abandoned railroad right-of-way. If sited within the railroad right-of-way, the transition station (with a footprint of 50 feet by 90 feet) has the potential to preclude use of the right-of-way for “trails and other public purposes” (as identified in the Contra Costa County General Plan). A letter received from Contra Costa County states that the Energy Commission’s review of the project should “consider the opportunity costs of committing the right-of-way to electrical transmission uses and foregoing other possible future corridor uses such as transit line,” although the letter is not aware of any transportation plans for this corridor (Contra Costa County 1999). In addition, staff’s **TRAFFIC AND TRANSPORTATION** analysis did not identify the abandoned Sacramento Northern railroad right-of-way as a corridor for future Bay Area Rapid Transit expansion.

### ***WATER SUPPLY LINES***

Staff does not expect these linear facilities (Routes 4, 5 and 7) to cause a significant land use impact because they will not physically divide any established community. These water lines are proposed to be underground and will follow existing utility corridors and road or railroad rights-of-way.

### ***NATURAL GAS SUPPLY PIPELINE***

The gas pipeline will not physically divide any established community because it is proposed to be underground for its entire length and will follow existing utility corridors and a railroad right-of-way. The City of Antioch has identified, and staff agrees that some residential properties along the PG&E and East Bay Municipal Utility District (Delta DeAnza Trail) easements may be illegally encroaching on the utility rights-of-way. If PDEF must relocate fences in order to construct the gas pipeline within the PG&E right-of-way, the replacement wall shall be constructed pursuant to Antioch zoning requirements. If it is necessary to relocate fences, staff has proposed a condition of certification to ensure that the replacement wall is built to the specifications of the City of Antioch (see **LAND-3**). Please refer to the **FACILITY DESIGN** section of the Staff Assessment for a discussion of potential impacts associated with the gas pipeline and proposed condition **MECH-5** to ensure that the pipeline is installed and operated safely.

### ***TRUCK BYPASS ROAD***

Staff does not expect the truck bypass road to cause a significant land use impact. The purpose of this new road is to divert truck traffic from residential and commercial areas. The truck bypass road will not physically divide the Central Addition residential neighborhood because it is proposed to be located along its eastern and northern boundaries. As defined by the applicant, construction of the roadway will not displace any houses, but will necessitate the relocation of the baseball diamond. It will be relocated east of the new road to an unused portion of the same parcel. An elevated crossing structure will facilitate pedestrian access to the baseball field. A 12-foot sound wall will provide a buffer between the new roadway and residences on Columbia Street and East Santa Fe Avenue. The truck bypass also will be compatible with planned land use. The General Plan land use map shows a public park to be located on the parcels on the north side of East

Santa Fe Avenue between Harbor and Columbia Streets. The 1992 EIR for the Waterfront Truck Route concluded that the project is consistent with the Land Use Element provided that the design accommodate the use of lands between East Santa Fe Avenue and the truck route for future park use (Pittsburg 1992). The linear park proposed by PDEF between the sound wall and East Santa Fe Avenue and homes on Columbia Street would be consistent with the General Plan land use map and mitigation measures contained in the 1992 EIR for the Waterfront Truck Route.

## CUMULATIVE IMPACTS

Cumulative impacts may be caused if a project would have effects that are individually limited but cumulatively considerable when viewed together with the effects of related projects. On December 18, 1998 the Energy Commission received an Application for Certification (AFC) for a second power plant proposed in Pittsburg (98-AFC-3). The Delta Energy Center (DEC) would be an 880-megawatt cogeneration power plant located adjacent to the Delta Diablo Sanitation District facility on Arcy Lane, north of State Route 4. The DEC's 230 kV transmission line also would travel underground within the 8<sup>th</sup> Street corridor to connect to the electrical grid at the PG&E Pittsburg Power Plant. As stated in its Prehearing Conference Statement, DEC initiated a Detailed Facilities Study with PG&E on September 10, 1998 that included an underground transmission route through the 8<sup>th</sup> Street corridor interconnecting the DEC to the Pittsburg Power Plant substation. In addition, according to the prehearing statement the DEC described its intent to underground its transmission line through 8<sup>th</sup> Street in meetings in October and November 1998 with the Energy Commission and the City of Pittsburg. The prehearing statement points out that it was not until December 11<sup>th</sup> when PDEF filed a supplement to its AFC that the PDEF indicated its preference for an underground line through the 8<sup>th</sup> Street corridor rather than the overhead line to the west to interconnect with the PG&E #32 Columbia Steel Tap. The current size of the easement that runs through the median of 8<sup>th</sup> Street is 50 feet in width. The underground duct bank housing the PDEF transmission line will be 23 feet wide and the DEC duct bank will be 33 feet wide. Engineering practice requires approximately 15 feet between duct banks. Thus, the easement allows room for only one transmission facility. The City of Pittsburg has acknowledged that with the two projects there would be encroachment underneath the streets that parallel the existing easement. To accommodate the PDEF transmission line, the City of Pittsburg plans to condemn a subsurface easement underneath the eastbound lane of 8<sup>th</sup> Street. During a March 29<sup>th</sup> conference call with the City of Pittsburg, staff was informed that Pittsburg will require PDEF to obtain a franchise agreement for the long-term right to use the 8<sup>th</sup> Street easement. In its March 26<sup>th</sup> letter, Pittsburg requests that PDEF and DEC coordinate construction of the underground transmission lines along 8<sup>th</sup> Street to allow simultaneous installation and minimize disturbance to the area, including the proposed linear park (Pittsburg 1999). Staff has proposed a condition of certification (**LAND-5**) to ensure that PDEF will coordinate with DEC the construction of the linear facilities within the 8<sup>th</sup> Street corridor.

## FACILITY CLOSURE

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At some point in the future, the project will cease operation and close down. At that time, it will be necessary to ensure that closure occurs in such a way that public health and safety and the environment are protected from adverse impacts.

The information provided in the AFC did not specifically address the effects of project closure on land use issues and concerns. The proposed PDEF is expected to be in operation in excess of thirty years. The applicant will prepare a Facility Closure Plan for submittal to the Energy Commission for review and approval, at least twelve months prior to the proposed closure. At the time of closure, all then-applicable LORS will be identified and the closure plan will address how these LORS will be complied with.

There are at least two other circumstances under which a facility closure can occur, unexpected temporary closure and unexpected permanent closure. In the event of temporary facility closure, staff has not identified any LORS from a land use perspective with which the applicant would have to comply. In the event of unexpected permanent closure and dismantling of the facility, the applicant would need to comply with the Antioch zoning requirement concerning pipelines no longer in use as stated in the LORS section of the land use analysis.

## MITIGATION

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The project will not comply with all applicable laws, ordinances, regulations and standards because the project will exceed Pittsburg's 95-foot height restriction on structures in a General Industrial zoning district. The applicant seeks to resolve the nonconformity by applying for a variance from the City of Pittsburg. Until such variance is granted, staff cannot recommend a consistency finding pursuant to Public Resources Code Section 25525. If the variance is ultimately granted, staff does not expect any significant adverse impacts to land use in Pittsburg. If installation of the gas pipeline in Antioch will necessitate relocation of existing residential fencing, staff has proposed mitigation for the adjacent property owners (see proposed condition **LAND-3**).

## CONCLUSIONS AND RECOMMENDATIONS

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### CONCLUSION

If the applicant is granted a variance from the City of Pittsburg to exceed the 95-foot height restriction on structures in a General Industrial zoning district, as well as complies with proposed condition **LAND-1**, **LAND-2** and **LAND-6**, the project will be in conformance with applicable laws, ordinances, regulations and standards. The proposed power plant will be compatible with existing and planned land uses because: 1) it is consistent with the current general plan and zoning designations of property; 2) it is compatible with the heavy industrial character of the immediate land uses; 3) the site does not abut any residential areas; and 4) distance and/or

other structures will provide buffering for residential uses in the vicinity<sup>2</sup> The project's linear facilities also will be compatible with existing and planned land uses because they will, for the most part, follow existing utility corridors or rights-of-way. In addition, the gas and water pipelines, as well as the portion of the proposed transmission line travelling through a residential area will be underground. Proposed condition **LAND-3** will ensure that any residential fencing requiring relocation in order to construct the gas pipeline will be replaced according to the Antioch Zoning Ordinance. Also, the transition structures will be compatible with existing and planned land uses. Therefore, if the Commission adopts the following proposed conditions of certification, staff does not anticipate any significant land use impacts.

## RECOMMENDATION

If the Energy Commission certifies the PDEF, staff recommends that the Commission adopt the following proposed conditions of certification.

## CONDITIONS OF CERTIFICATION

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**LAND-1** The project owner shall comply with Pittsburg Zoning Ordinance Section 18.54.015, Property Development Regulations for an IG (General Industrial) District.

Verification: At least 30 days prior to the start of construction, the project owner shall submit evidence to the California Energy Commission Compliance Project Manager (CPM) that the project complies with Section 18.54.015. The required site landscaping and irrigation plan shall be submitted to the CPM for review and approval. The plan must show evidence of review by the Pittsburg Community Development Director and Public Services Director.

**LAND-2** The project owner shall comply with Pittsburg Zoning Ordinance section 18.36.210 (Design Review) and applicable requirements in Chapter 18.78 (Off-street Parking and Loading). The site plan (as required by section 18.36.210) shall include the power plant and electrical transition structures.

Verification: At least 30 days prior to the start of construction, the project owner shall submit a site plan to the CPM for review and approval that provides the information required for Design Review (including a statement that the project conforms to the applicable off-street parking and loading requirements). The project owner shall also submit the site plan to the City of Pittsburg for review, and provide a copy of the City's comments with the submittal to the CPM.

**LAND-3** If construction of the natural gas pipeline within the PG&E easement will require relocation of existing wood fencing, the

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<sup>2</sup> Residential uses could be further buffered from the power plant if the updated Pittsburg General Plan contains policies that provide for buffers, such as landscaping, parks and/or transitional land uses, between industrial facilities in Northeast River and residential neighborhoods.

project owner shall replace the fencing with a wall of masonry construction (pursuant to Antioch Zoning Ordinance Section 9-5.1601.F) or other material as specified by the City of Antioch. The new wall or fence, if necessary, shall be located on the legal boundary of the easement.

Verification: At least 30 days prior to construction of the gas pipeline, the project owner shall submit a site plan to the CPM for review and approval that shows the precise location of the new pipeline in relation to the existing fence lines and easement boundaries. The plan shall include a statement whether or not installation will require displacement of existing fences. If construction will require relocation of existing wood fencing to the legal boundary of the easement, the submittal to the CPM shall provide proof that the new fencing material meets the specifications of the City of Antioch.

**LAND-4** After construction of the transmission lines is completed in the 8<sup>th</sup> Street corridor, the project owner shall construct a linear green belt within the 8<sup>th</sup> Street median between Harbor Street and Beacon Street.

Verification: At least 30 days prior to the start of construction of the green belt, the project owner shall submit a landscaping and irrigation plan to the CPM for review and approval. The submittal shall include evidence of review by the Pittsburg Community Development Director and Public Services Director.

**LAND-5** The project owner shall coordinate, with the Calpine/Bechtel Delta Energy Center, construction of the underground transmission line along the 8<sup>th</sup> Street corridor and through Delta Diablo pumping station property to allow simultaneous installation and to minimize disturbance in the area.

Verification: At least 30 days prior to start of construction of the underground transmission line, the project owner shall submit a construction plan to the CPM for review and approval. The plan shall describe how the project owner will coordinate construction activities with Calpine/Bechtel to minimize disturbance to adjacent land uses. The submittal to the CPM must show evidence of review by the City of Pittsburg.

**LAND-6** All site developments shall comply with Title 12 (Streets, Sidewalks and Utilities), Title 13 (Water and Sewer) and Chapter 15.88 (Grading, Erosion and Sediment Control) of the Pittsburg Municipal Code.

Verification: At least 30 days prior to the start of construction, the project owner shall submit evidence to the CPM that it will comply with Title 12, Title 13 and Chapter 15.88 of the Pittsburg Municipal Code.

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# TRAFFIC AND TRANSPORTATION

Revised Testimony of David Flores

## INTRODUCTION

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Staff's original Traffic and Transportation assessment was submitted to the Energy Commission Pittsburgh District Energy Facilities Siting Committee on March 10, 1999. Since that time, input from the local agencies and the general public required clarification in various sections of the report.

This revised testimony replaces that original testimony.

The Traffic and Transportation section of the Final Staff Assessment (FSA) addresses the extent to which the project may impact the transportation system within the vicinity of its proposed location. This section summarizes the separate analyses by both the applicant for Pittsburgh District Energy Facility (PDEF) and the Energy Commission staff of the potential traffic and transportation impacts associated with construction and operation of the project. These analyses included the identification of: 1) the roads and routings which are proposed to be used; 2) potential traffic related problems associated with those routes; 3) the anticipated number of trips to deliver oversize/overweight equipment; 4) the anticipated encroachment upon public right-of-ways during the construction of the proposed project and associated appurtenant facilities; 5) the frequency of trips and probable routes associated with the delivery of hazardous materials; 6) the availability of alternative transportation methods such as rail; and 7) the construction of the Bypass Road to alleviate truck traffic from residential areas

Staff used this information to determine the potential for the project to have significant traffic and transportation impacts, as well as to assess the availability of mitigation measures which could reduce or eliminate the significance of those impacts. Conditions of certification are included to implement the appropriate mitigation measures and to ensure that the project complies with the applicable laws, ordinances, regulations and standards.

## LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS)

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### FEDERAL

The federal government addresses transportation of goods and materials in Title 49, Code of Federal Regulations:

- Title 49, Code of Federal Regulations, Section 171-177, governs the transportation of hazardous materials, the type of materials defined as hazardous, and the marking of the transportation vehicles.

- Title 49, Code of Federal Regulations, Section 350-399, and Appendices A-G, Federal Motor Carrier Regulations, addresses safety considerations for the transport of goods, materials, and substances over public highways.

## STATE

The California Vehicle Code and Streets and Highways Code contain requirements applicable to the licensing of drivers and vehicles, the transportation of hazardous materials and right-of-way. In addition, the California Health and Safety Code addresses the transportation of hazardous materials. Specifically, these codes include:

- California Vehicle Code, section 353, defines hazardous materials. California Vehicle Code, sections 31303-31309, regulates the highway transportation of hazardous materials, the routes used, and restrictions thereon.
- California Vehicle Code, section 31030, requires that permit applications shall identify the commercial shipping routes they propose to utilize for particular waste streams.
- California Vehicle Code, sections 31600-31620, regulates the transportation of explosive materials.
- California Vehicle Code, sections 32000-32053, regulates the licensing of carriers of hazardous materials and includes noticing requirements.
- California Vehicle Code, sections 32100-32109, establishes special requirements for the transportation of inhalation hazards and poisonous gases.
- California Vehicle Code, sections 34000-34121, establishes special requirements for the transportation of flammable and combustible liquids over public roads and highways.
- California Vehicle Code, sections 34500, 34501, 34501.2, 34501.4, 34501.10, 34505.5-7, 34507.5 and 34510-11, regulates the safe operation of vehicles, including those which are used for the transportation of hazardous materials.
- California Vehicle Code, sections 2500-2505, authorizes the issuance of licenses by the Commissioner of the California Highway Patrol for the transportation of hazardous materials including explosives.
- California Vehicle Code, sections 13369, 15275 and 15278, addresses the licensing of drivers and the classifications of licenses required for the operation of particular types of vehicles. In addition, these sections require the possession of certificates permitting the operation of vehicles transporting hazardous materials.

- California Streets and Highways Code, sections 117 and 660-72, and California Vehicle Code 35780 et seq., require permits for the transportation of oversized loads on county roads.
- California Streets and Highways Code, sections 660, 670, 1450, 1460. et seq., 1470, and 1480, regulates right-of-way encroachment and the granting of permits for encroachment on state and county roads.
- California Health and Safety Code, sections 25160 et seq., addresses the safe transport of hazardous materials

## **LOCAL**

### ***CITY OF PITTSBURG***

The Traffic and Circulation Element of the City of Pittsburg General Plan sets up standards for traffic service and roadway improvements. It introduces planning tools essential for achieving the local transportation goals and policies (City of Pittsburg, 1988). Specific policies from the Traffic and Circulation Element that directly relate to this project include:

- Construct an east-west arterial collector system to serve the industrial areas east of downtown.
- Discourage through traffic on local roadways.
- Designate truck routes, and discourage unnecessary through-traffic in residential areas through construction system design and planning.
- Maximize the carrying capacity of arterial roadways by controlling the number of intersections and driveways and minimize residential access.

### ***CITY OF ANTIOCH***

The Streets and Highway Goals of the City of Antioch General Plan set standards to provide adequate capacity to, from and within the City to achieve acceptable operations on all roadways and all intersections.

Although the majority of the proposed project and linear facilities are located in Pittsburg, some linear facilities (reclaimed water line [s] and fuel gas pipelines) cross into the jurisdiction of the City of Antioch in two locations: 1) north of the Pittsburg- Antioch Highway at the entrance to the Delta Diablo Sanitation District Waste Water Treatment Plant and, 2) east of Los Medano Drive.

### ***RAILROADS***

The Union Pacific Railroad Company requires a Right of Entry Form for any work or testing on their property. Additional permitting would be required for a permanent right-of-way for any applicable utility crossings.

## SETTING

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### REGIONAL DESCRIPTION

#### *HIGHWAYS AND ROADWAYS*

The proposed project is located in the northeast part of the City of Pittsburg, near the intersection of East 3rd and Columbia Streets. The City presently has two designated truck routes serving the industrial areas on 3<sup>rd</sup> Street. Both existing routes use Highway 4 and the Loveridge Road interchange. The first route uses California Avenue west to Harbor Street north to connect to 3<sup>rd</sup> Street. The second route uses Loveridge Road north to the Pittsburg-Antioch Highway, west to East 14<sup>th</sup> Street, west to Solari Street, north to East 10<sup>th</sup> Street, east to Harbor Street, and then north to connect to 3<sup>rd</sup> Street.

The Atchison, Topeka, Santa Fe and Union Pacific Railroads operate active main line and spur tracks within 0.5 mile of the project site. Inactive rail lines are within several hundred feet of the proposed site (See **TRAFFIC AND TRANSPORTATION Figure 1**).

### IMPACTS

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#### STANDARDS

##### *SERVICE LEVEL STANDARDS*

When evaluating a project's potential impact on the local transportation system, staff uses levels of service measurements as the foundation on which to base its analysis. Essentially levels of service (LOS) measurements represent the flow of traffic. In general, LOS ranges from A, free flowing traffic, to F, which is heavily congested with stoppage of the flow.

The General Plan (City of Pittsburg, 1988) adopted the following LOS policies on city streets:

**TRAFFIC AND TRANSPORTATION Figure 1**  
**Pittsburg District Energy Facility – Truck Route 1 & 2**

1. Strive to maintain traffic LOS C or better as the standard at all intersections, with LOS D during no more than 3 hours of the day (a.m., p.m., and noon peaks).
2. Accept LOS D during 2-hour peak periods, with the possibility of intersections at or closely approximating the limits of LOS D, only on arterial routes bordered by nonresidential development where improvements to meet the City's standard would be prohibitively costly or disruptive (City of Pittsburg, 1988).

The *Pittsburg Traffic Mitigation Fee Study* (Fehr & Peers Associates, 1997) utilized a mid LOS D (volume to capacity ratio = 0.85) as the peak hour signalized intersection standard for identifying significant impacts. This standard is consistent with the standards established in the *Technical Procedures (for Analysis of Growth)*, Contra Costa Transportation Authority, 1998 Update.

### **EXISTING LEVEL OF SERVICE**

Evaluation of existing LOS's consist of P.M. peak hour analysis at the nine key intersections along the primary project access route. Consistent with the assumption that the Truck Bypass Road will be in place within 2 months after construction begins. Several new intersections or revisions to intersection control are assumed and were evaluated specifically:

- traffic signal at USS-POSCO entrance and Pittsburg-Antioch Highway intersection;
- new signalized intersection at East 14<sup>th</sup> Street and Truck Bypass Road;
- traffic signal at Harbor Street and Santa Fe Avenue intersection; and
- traffic signal at Harbor and East 3<sup>rd</sup> Street intersection.

All of the existing and new intersections as part of the Truck Bypass Road and associated improvements will operate at LOS B or better, except at the intersection of Loveridge/Pittsburg-Antioch Highway, which operates at LOS D. This intersection, with a volume to capacity ratio of 0.82, borders on exceeding the City's service level standard (0.85).

The existing and new unsignalized intersections along the Truck Bypass Road will operate at LOS B during the p.m. peak hour, well under the adopted standard of LOS E for any approach of an unsignalized intersection.

## ***PUBLIC TRANSPORTATION***

Bay Area Rapid Transit (BART) provides service to the recently opened Bay Point Station located west of the City of Pittsburg. Future planned transit expansions include the extension of BART to Antioch along the Highway 4 corridor (Kathy Mayo/BART transit planner). Tri-Delta Transit provides fixed route bus service from the Bay Point BART station and the entire east county, which serves the project area. Tri-Delta routes No. 380 and 392 serve Harbor Street near the East 10th Street, within walking distance of the project area.

## ***ACCIDENT ANALYSIS***

Traffic accident records for the past three years (1995-1997) were reviewed and compared with statewide average accident rates to determine if any of the primary access roads experience unusually high numbers of accidents. The data provided by PDEF=s consultant reflect the primary access routes to the power plant site have accident rates well below the statewide average for similar types of roadways. None of the recorded accidents occurred at railroad crossings. This level of accident history does not indicate any unusual hazard or improperly designed facilities along these roads. (PDEF 1998, AFC page 5.11-19)

## ***CONSTRUCTION PHASE***

### **COMMUTE TRAFFIC**

On December 7, 1998, the applicant amended its application to reflect a minor relocation of the reclaimed water supply and wastewater return lines into the Pittsburg-Antioch Highway. This will occur between Columbia Street and Loveridge Road. In addition a new 115 kV transmission line has been included in the amendment. This route will be constructed in an underground duct bank along the median of 8<sup>th</sup> Street (currently an abandoned railroad right of way), traversing several cross streets along the way. The impacts associated with this amended construction activity are reflected in this report.

The power plant is to be constructed on a 12-acre site within the existing property currently owned and controlled by USS-POSCO Industries. An additional 20 acres adjacent to and south of the plant site will be utilized as a temporary construction laydown area and for contractor employee parking. The construction schedule requires about 20 months to complete the project with onsite construction manpower, plus staff, having a 9 month peak of an estimated 299 workers starting in the 14th month after the notice to proceed. The construction layout area, adjacent to the site, will provide sufficient parking space for these workers. Additional offsite linear facility construction workers will range between 10 and 17 per day for 8 of the 9 major months. The labor force trip generation is 100 percent directional with 90 persons arriving at the site in the morning and departing the site in the afternoon. Consistent with the analysis of the peak construction labor force period, 70 percent of the initial construction labor force is assumed to arrive or depart in the 30 minute period prior to the area=s commute peak hour, with the remaining 30 percent arriving or departing within the commute peak hour. The existing commute peak hours in this area are 7:00 to 8:00 a.m. and 4:30 to 5:30

p.m. **TRAFFIC AND TRANSPORTATION Figure 2** shows the estimated power plant site morning and afternoon peak hour trip generations for labor forces and trucks.

#### TRUCK TRAFFIC

Construction truck deliveries of equipment and materials peak during month 4 through 6 of the construction schedule, as the site is prepared. At the same time, construction truck traffic is estimated to be 935 truck deliveries per month in the two-month initial construction period (prior to the completion of the truck bypass road). This is equivalent to about 44 trucks entering and exiting the site per day. The construction labor at the end of these 2 months reaches 85 persons, about 32 percent of the full construction force. Therefore, for the purposes of evaluating worst-case traffic impacts, these elements analyze the combined truck and labor force peak in months 11 through 15 of the construction schedule. During this peak, the project will generate about 150 truck deliveries per month. This coincides with the peak month of the labor force and is the equivalent of 7 truck deliveries per day or 14 inbound plus\_outbound truck trips per day. Truck trips carrying construction material are assumed to be evenly distributed throughout the day.

#### RAIL LINE

As shown on the attached **TRAFFIC AND TRANSPORTATION Figure 1**, an existing Union Pacific railroad spur is within close proximity of the project site. PDEF has indicated that they currently have no specific plans to use the rail spur to deliver equipment. If economically feasible over trucking, the railroad spur could be utilized to deliver large equipment such as the combustion turbines. Staff for purposes of analysis, assume truck deliveries of equipment and materials.

**Traffic and Transportation - Figure 2  
Onsite Vehicle and Truck Trip Table**

## **LINEAR FACILITIES**

Construction of the 115 kV transmission line along 8<sup>th</sup> Street can cause some disruption of traffic due to the transport of construction materials and transmission equipment and the actual construction near roadways.

Construction of this aboveground/below ground transmission line will involve less than 9 worker vehicles and trucks. It is currently planned that underground construction along the 8<sup>th</sup> Street median will be done by boring under major streets, Railroad Avenue and Harbor Street, therefore not impacting their traffic. North-south residential streets crossing 8<sup>th</sup> Street are expected to be closed in groups of 3 for up to three days at a time as duct bank construction progresses down 8<sup>th</sup> Street. Sufficient parking for construction vehicles is available in this area. The maximum traffic impact will be associated with short-term detours of residential vehicles several blocks at a time for three days. Each of these construction activities will have short-term and minimal impacts on the function of area roadways. Use of typical signals, or warnings will also notify motorist of construction activity.

Construction of the reclaimed water supply and wastewater discharge lines along the Pittsburg-Antioch Highway may be limited by several utilities that are already buried in both shoulders. These existing utilities are not well documented as to their precise location. As a result, between the southern end of the new Truck Bypass Road and Loveridge Road, installation of some sections of these pipelines may encroach within the highway. Traffic in the morning and afternoon peak periods is near capacity on this section of the highway (e.g., 948 vehicles per hour westbound between 7 and 8 AM; opposing direction traffic in the 5 to 6 PM peak is 63 percent of the peak direction). Flagmen directing traffic during these hours could back traffic up into the Loveridge Road intersection in the AM or into town in the PM peak.

However, traffic on the Pittsburg-Antioch Highway between 9 AM and 2:30 PM, and after 7 PM are less than 500 vehicles total in both directions. It is expected that occasional flagged one-way traffic between 9 AM and 3 PM could be used without increasing traffic delays beyond those already incurred during the peak periods. These delays will occur at various times over the 2 to 4 weeks required for the installation of the pipelines between the Truck Bypass Road and Loveridge Roads. The applicant has committed to limit construction in this specific area to between 9 AM and 2:30 PM, or after 7 PM. With implementation of this mitigation measure, construction of the pipelines in this area would not be expected to produce a significant traffic impact.

In recent public workshops (March 24, 1999) held in Pittsburg, the City of Antioch also requested consideration in limiting construction activities during peak traffic times at key intersections, especially at Somersville/Buchanan Roads, an important commute and retail corridor. Staff has modified the conditions of certification to address time frames for construction in these areas to offset peak traffic hours.

## TRUCK BYPASS ROAD

The Truck Bypass Road is proposed as part of the PDEF project to mitigate the adverse impacts of project-related truck traffic in the northwestern industrial area of Pittsburg and to divert trucks and vehicular traffic from 3<sup>rd</sup> and Harbor Streets to the Pittsburg-Antioch Highway and its connection to Highway 4 via Loveridge Road. The proposed Truck Bypass Road would also mitigate existing truck traffic impacts in the area. The northwestern industrial area of Pittsburg generates substantial vehicle and truck traffic, which currently passes through residential and commercial areas on the designated truck routes.

The proposed Truck Bypass Road was initially addressed in the Waterfront Truck Route Environmental Impact Report certified by the City of Pittsburg in 1991. The proposal was a mitigation measure identified in the Han-Li International Marine Terminal EIR. The project as proposed is to consolidate truck traffic traveling between industrial areas in the City of Pittsburg to Highway 4 onto one route that is structurally appropriate and can safely and efficiently handle large heavy trucks.

The new truck route utilizes the Pittsburg-Antioch Highway until east of the intersection with residential Columbia Street where a new street is to be constructed parallel to Columbia Street and Santa Fe Street, connecting to Harbor Street north of the residential areas. The truck route utilizes the northern section of Harbor Street connecting to East 3<sup>rd</sup> Street where it provides access to industrial uses. In addition to the truck bypass road, an elevated pedestrian cross walk will be built near the intersection of East 14<sup>th</sup> Street. Additionally, the road will be constructed to Caltrans and City standards and will incorporate the use of a soundwall 12 feet in height. The proposed truck route is shown on **TRAFFIC AND TRANSPORTATION Figure 3**.

Average daily traffic volumes are estimated at 3,000 vehicles along the Truck Bypass Road with up to 35 daily truck trips during the P.M. peak hour. P.M. peak hour, as opposed to A.M. peak hour was evaluated because it reflects the highest level of traffic volumes on a weekday.

Trip generations for future conditions on the Truck Bypass Road are dependent on new industrial employment in the area as well as peak hour travel. Based on a 20 year buildout scenario, 3,900 daily traffic trips would be made on the truck route between East 14<sup>th</sup> Street and Harbor Street with trucks expected to be some 12% of total daily traffic. Up to 46 trucks during the AM peak hour (52 trucks during PM peak hour) would use the Proposed Bypass Road. Estimated figures are also based upon the City of Pittsburg closure of the Harbor Street truck route south of Santa Fe Street and the elimination of 14<sup>th</sup> Street from Harbor Street to Columbia Street as a truck route. The new proposed Bypass Road would funnel most of the truck traffic and some auto traffic from 3<sup>rd</sup> Street and 10<sup>th</sup> Street to the Pittsburg-Antioch Highway. The number of trip generations was derived from the analysis of the Contra Costa County Traffic Model and the Future 2005 Traffic Study developed by DKS Associates (Source: Waterfront Truck Route EIR, response to comments, pg. II-14)

#### ALTERNATIVE TRUCK BYPASS ROUTES

Because property owners, in the existing residential subdivision bordered by the proposed Bypass Road have expressed concern about truck emissions, staff has assessed and identified the following alternative truck routes.

In the 1991 environmental impact report (EIR) for the Waterfront Truck Report, the EIR identified two alternative truck routes (a preferred and a secondary option) other than the proposed Truck Bypass Road.

The secondary option was not found to be cost effective due to the cost associated with major improvements at the Santa Fe railroad crossing and other cost associated with roadway compaction requirements due to soil conditions (bay mud soils with possible liquefaction). **TRAFFIC AND TRANSPORTATION Figure 4** illustrates this secondary alternate route.

The preferred alternate truck route would begin at the end of Loveridge Road, which terminates at the USS/POSCO main gate, then would extend westerly and northerly to 3<sup>rd</sup> Street.

Major features of the preferred route would be to construct a new roadway south from 3<sup>rd</sup> Street along the alignment of an older roadway (Columbia Street) now only used by USS/POSCO via a gate at Santa Fe Avenue and Columbia Street.

The new roadway would cross the Santa Fe tracks and then proceed eastward to Loveridge Road. A new railroad crossing would be required at the Santa Fe tracks. Traffic would then follow Loveridge Road to the Highway 4 intersection. At least two existing industrial structures (along Columbia Street and at the Loveridge/Santa Fe tracks intersection) would need to be removed. The impacts associated with this truck route alternative is:

- 3<sup>rd</sup> Street traffic would be diverted to this route, lessening the impact on the existing truck routes.
- More likely 10<sup>th</sup> Street traffic would not use this route.
- Demolition of two industrial structures (on Columbia Street and Loveridge Road) would be required.
- Provides a better access route for future uses on undeveloped land in the vicinity.
- No truck traffic along existing residential neighborhood, except at the Columbia/Santa Fe intersection.
- Possible difficulty in obtaining Railroad/PUC approval for new railroad crossing at the Santa Fe tracks near Columbia Street (grade separation may be required).

- No possible reduction of existing noise levels in residential neighborhoods along Santa Fe and Columbia Streets.
- Estimated traffic volumes are projected to be 145 cars and 44 trucks at the A.M. peak hour and 145 cars and 50 trucks at the P.M. peak hour (Source: Waterfront Truck Route EIR, pg.108)

The alternative truck route on Loveridge Road considered in the Waterfront Truck EIR would have the advantage of being further from residential neighborhoods. However, the feasibility of this alternative route is uncertain or undesirable for two reasons: 1) the route would be on property not under the ownership or control of either the applicant or the City of Pittsburg, and 2) it would require traffic, including heavy traffic, to cross an active rail line, creating potential public safety issues.

In addressing truck traffic, the City of Pittsburg would need to eliminate current designated truck routes as shown in **TRAFFIC AND TRANSPORTATION Figure 4**, and by the use of signs directing truck traffic to the new designated truck routes. The California Highway Patrol (CHP) could enforce use of designated truck routes by issuing traffic citations to truck drivers using undesignated truck routes. This has been an effective method used in Yolo County for the control of aggregate truck traffic using residential areas as truck routes.

## **OPERATIONAL PHASE**

### **COMMUTE TRAFFIC**

Operation of the completed power plant is estimated to have a permanent labor force of 20 persons and 2 trucks per day (10 per week) delivering and removing materials and supplies. This will not present any major traffic problems.

The project will generate the need to transport hazardous materials and wastes during construction and operations. During operations of the project, the delivery of chemicals and the removal of wastes are expected to generate less than 10 trucks ingressing and egressing the site per week. Examples of the types of hazardous materials delivered to the site include aqueous ammonia, sulfuric acid, sodium hydroxide, and fluids required for plant operations. Aqueous ammonia, designated a California extremely hazardous material, would be transported to the site in 8,000-gallon tankers on an average of once every 4 days (a total of 87 trips per year). The handling and disposal of hazardous substances are addressed in the Waste Management Section of this preliminary staff assessment. Potential impacts of the transportation of hazardous substances can be mitigated to insignificance by compliance with federal and state standards established to regulate the transportation of hazardous substances. Conditions of certification that insure this compliance are discussed under their respective subsection later in this analysis.

## **CUMULATIVE IMPACTS**

The PDEF, as part of an overall development, will add to cumulative traffic loads in the local area. Construction traffic generated by the project would potentially impact

residential and commercial areas if it were to use existing streets and designated truck routes to access the power plant site. Without the Truck Bypass Road, labor force vehicles, delivery trucks, and heavy equipment would utilize the Pittsburg-Antioch Highway to Columbia Street to access the site. The southerly half of Columbia Street is within a residential district with single-family homes

**TRAFFIC AND TRANSPORTATION Figure 3  
Proposed Truck Routes**

**TRAFFIC AND TRANSPORTATION Figure 4**  
**Alternate Truck Route**

fronting onto the street. Key considerations then will be the transport of hazardous materials. The **Conditions of Certification** section of this report will ensure that the transport of such materials is undertaken in compliance with applicable federal and state laws.

The only other project proposed in the area is the Delta Energy Center, an 880-megawatt (MW) combined cycle facility to be located east of the proposed Pittsburg Plant on Arcy Lane. During construction of the PDEF, no cumulative impacts on traffic are expected for the following reasons:

- Peak construction traffic at the PDEF will occur before peak construction traffic at the Delta Energy Center begins.
- Traffic for the PDEF will not use the same access roads used by Delta Energy Center. Delta Energy Center will likely use Somersville Road turn-off from Highway 4, west on Pittsburg-Antioch Highway, and north on Arcy Lane to the project site. PDEF will utilize Loveridge Road turn-off from Highway 4, west on Pittsburg-Antioch Highway, northwest on the newly constructed Bypass Road to Harbor Street, north on Harbor Street to 3<sup>rd</sup> Street and east on 3<sup>rd</sup> to the project site.

After both facilities are constructed, they will both operate 7 days a week, 24 hours per day. The Delta Energy Facility will likely use the same number of operating personnel as the PDEF (approximately 20 people) Monday through Friday of each week. As explained earlier in this report, this small number of commuters will not significantly impact traffic.

## **COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS AND STANDARDS**

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### **FEDERAL**

The applicant has stated its intention to comply with all federal LORS. A condition to ensure compliance is included below. Therefore, the project is considered consistent with identified Federal LORS.

### **STATE**

The applicant has stated its intention to comply with all state LORS. A condition to ensure compliance is included below. Therefore, the project is considered consistent with identified State LORS.

### **LOCAL**

For operational employees, trip reduction measures could be employed. But since the maximum number of employees assigned to any one shift is 20, trip reduction measures for this project will have an insignificant impact on congestion increases resulting from operation of the power plant. However, operational traffic could be

considered for such a program depending upon the eventual cumulative impacts from the full buildout of the industrial area.

The City of Antioch and the City of Pittsburg require securing necessary encroachment permits for any operation or construction in any public right-of-way. However, the Energy Commissions Certification is an "in lieu" permit which takes the place of other permits that would have been issued absent the Energy Commission. Staff has addressed, in the **Conditions of Certification** of this report, the appropriate mechanism for the project owner to meet the requirements of the City of Pittsburg and the City of Antioch regarding the need to encroach on a public right-of-way. Staff's proposed Condition **TRANS-9** references the adopted city ordinance sections, which apply to these encroachment requirements.

## **FACILITY CLOSURE**

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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.

The information provided in the AFC did not specifically address the effects of project closure on traffic and transportation issues and concerns. The proposed PDEF is expected to be in operation in excess of thirty years. The applicant will prepare a Facility Closure Plan for submittal to the Energy Commission for review and approval, at least twelve months prior to the proposed closure. At the time of closure, all then-applicable LORS will be identified and the closure plan will address how these LORS will be complied with.

There are at least two other circumstances under which a facility closure can occur, unexpected temporary closure and unexpected permanent closure. Provisions must be made to address these specific situations. From the perspective of traffic and transportation issues, in the event of temporary facility closure, the applicant would have to comply with all applicable policies contained in the LORS section of this report in respect to transportation permits for hazardous materials and equipment deliveries and removal.

In the event of unexpected permanent closure, staff assumes that the facility will either remain idle until such time that new ownership is established, or dismantling of the facility will occur. In any event, LORS requirements as stated in this report will be adhered to for the owner to secure applicable transportation permits.

As discussed earlier in the report, certain roadway improvements are anticipated to be completed over a period of years (including the Bypass Road) which will lower the City of Pittsburg's level of service at various major roadways. In the event of temporary or permanent closure, the roadway systems within the vicinity of the project should be able to handle construction traffic without affecting the current level of service of the area (LOS C during normal daytime traffic and LOS D during peak hour traffic).

## MITIGATION

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The CEQA Guidelines (Title 14, California Code of Regulations, section 15370) defines mitigation to include:

- a) Avoiding the impact altogether by not taking a certain action or parts of an action.
- b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- c) Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.
- d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- e) Compensating for the impact by replacing or providing substitute resources or environments.

## APPLICANT'S PROPOSED MITIGATION

### *SPECIFIC MITIGATION MEASURES*

The applicant has proposed two mitigation measures to reduce traffic impacts:

- A Truck Bypass Road will be constructed to divert trucks and vehicular traffic away from existing residential and commercial districts along Harbor Street. (TRANS-1 Condition)
- Construction of the reclaimed water supply and wastewater discharge lines along the Pittsburg-Antioch Highway shall be limited to specific timeframes for construction to reduce peak traffic impacts.

### *EFFECTIVENESS OF THE APPLICANT'S PROPOSED MITIGATION MEASURES*

The applicant's proposed mitigation measures will act to reduce the potential significance of traffic impacts associated with the generation project. Extensions of these measures and other measures, as proposed below by Energy Commission staff, will ensure that traffic impacts will be minimized.

## STAFF'S PROPOSED ADDITIONAL MITIGATION

A specific truck traffic route will need to be utilized until such time that the Truck Bypass Road is completed. This will reduce traffic impacts to portions of the existing residential and commercial districts along Harbor Street. (**See TRANS-2**)

A specific traffic control plan is needed to assure safety measures are in place during construction of the power plant, pipelines, and linear facilities. This will also

assist local law enforcement and emergency services of possible closures of roadways due to construction. (See TRANS-6)

In addition, the applicant shall develop a road maintenance and repair mitigation plan with the City of Pittsburg or any other affected jurisdictions in which construction activities and accelerated road wear occurs as a result of project construction. (See TRANS-7)

## CONCLUSIONS AND RECOMMENDATIONS

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Staff concludes the following based on the independent analysis of the proposed PDEF:

### POWER PLANT

1. Adverse impacts of project-related truck traffic will be mitigated by the construction of the Truck Bypass Road which construction personnel and materials and equipment delivery trucks will be mandated to use.
2. Until such time that the Truck Bypass Road is completed, adverse impacts of project-related truck traffic will be mitigated by the requirement to utilize a designated truck route.
3. During the operational phase, with the Truck Bypass Road in place, increased roadway demand resulting from the daily movement of workers and materials will be minimal.
4. All transportation and handling of hazardous substances can be mitigated to insignificance by compliance with federal and state standards established to regulate the transportation of hazardous substances.

### LINEAR FACILITIES

1. Construction of the above ground transmission lines will have minimal impacts on the function of area roadways. Routine construction safety measures should be sufficient to ensure no impacts.
2. Because underground pipelines and transmission construction requires trenching within public road rights-of-way, the installation of underground facilities will impact both roadway function and levels of service. However, these impacts are expected to be short-term and not result in significant traffic and transportation impacts. The applicant has indicated their intent to provide appropriate traffic control measures, and these are contained within the Conditions of Certification. In addition, all development will take place in compliance with California Department of Transportation, City of Pittsburg and the City of Antioch limitations for encroachment into public rights-of-way.

3. As required in the Conditions of Certification, the applicant will demonstrate that the underground construction within public right-of-ways is in accordance with the City of Antioch and City of Pittsburg adopted city ordinances.

Based on staff's conclusions, if the proposed mitigation measures are properly implemented, no significant traffic impacts are likely to occur. Further, if the conditions of certification proposed by staff are observed and properly implemented, the PDEF will be in compliance with applicable laws, ordinances, regulations, and standards.

Staff recommends that if the Energy Commission certifies the PDEF, that it adopt the following proposed Conditions of Certification.

## **CONDITIONS OF CERTIFICATION**

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**TRANS-1** The project owner shall construct the Truck Bypass Road between the Pittsburg-Antioch Highway and Harbor Street and it shall be completed within 2 months after construction of the PDEF project begins.

**Verification:** In Monthly Compliance Reports, the project owner shall submit progress reports with estimates for completion of the Truck Bypass Road.

**TRANS-2** Until the Truck Bypass Road project is completed, the project owner shall require that all truck traffic utilize the existing designated truck route: Loveridge Road interchange from Highway 4, California Avenue, Harbor Street and 3<sup>rd</sup> Street to access the site.

**Verification:** The project owner shall include this specific route in its contracts for truck deliveries and shall report any noncompliance and any corrective measures taken to ensure future compliance in the Monthly Compliance Reports.

**TRANS-3** The project owner shall comply with California Department of Transportation (Caltrans), the City of Pittsburg, the City of Antioch and Contra Costa County limitations on vehicle sizes and weights. In addition, the project owner or its contractor shall obtain necessary transportation permits from Caltrans and all relevant jurisdictions for roadway use.

**Verification:** In the Monthly Compliance Reports, the project owner shall submit copies of any oversize and overweight transportation 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-4** The project owner or its contractor shall comply with Caltrans, the City of Pittsburg and the City of Antioch for limitations of encroachment into

public rights-of-way and shall obtain necessary encroachment permits from Caltrans and all relevant jurisdictions.

**Verification:** In Monthly Compliance Reports, the project owner shall submit copies of any encroachment permits received during the reporting period. In addition, the project owner shall retain copies of these permits and supporting documentation in its compliance file for at least six months after the start of commercial operation.

**TRANS-5** The project owner shall ensure that all federal, state and local regulations for the transport of hazardous materials are observed.

**Verification:** The project owner shall include in its monthly compliance reports, copies of all shipping manifests related to hazardous material shipments.

**TRANS-6** Prior to the start of construction, the project owner shall consult with the City of Pittsburg, the City of Antioch and Caltrans and will prepare a construction traffic control plan and implementation program which address the following issues:

- timing of heavy equipment and building materials;
- signing, lighting and traffic control device placement;
- establishing construction work hours outside of peak traffic periods;
- emergency access;
- temporary travel lane closures;
- maintaining access to adjacent residential and commercial property and;
- off street employee parking in construction areas during peak construction.

**Verification:** At least 30 days prior to start of construction, the project owner shall provide to the CPM for review and approval, a copy of its construction traffic control plan and implementation program.

**TRANS-7** Following construction of the power plant and all related facilities, the project owner shall meet with the CPM, City of Pittsburg, City of Antioch Caltrans and Contra Costa County to determine the actions necessary and schedule to complete the repair of all roadways to original or as near original condition as possible.

**Protocol:** Protocol: At least thirty days prior to start of construction, the project owner shall photograph the primary routes to be used by construction traffic (from 10<sup>th</sup> Street, north along Harbor Street, east on 3<sup>rd</sup> Street to

project site). Those areas that will be affected by pipeline construction (at Pittsburg-Antioch Highway between the Truck Bypass Road and Loveridge Road and key intersections within Antioch, especially at Somersville/Buchanan Roads) shall also be photographed). The project owner shall provide the CPM, City of Pittsburg, City of Antioch, Caltrans, and Contra Costa County with a copy of these photographs.

**Verification:** Within 30 days of the completion of project construction, the project owner shall meet with the CPM and City of Pittsburg, City of Antioch, Contra Costa County and Caltrans. The project owner shall provide copies of letters from the aforementioned agencies of jurisdiction including Caltrans, acknowledging satisfactory completion of the roadway repairs in the first Annual Compliance Report following start of operation of the PDEF.

**TRANS-8** Construction of the reclaimed water supply and wastewater discharge lines along the Pittsburg-Antioch Highway between the Truck Bypass Road and Loveridge Road shall be committed to limit construction in this specific area from 9 AM to 2:30 PM, or after 7 PM when there are temporary travel lane closures. Construction activities for gas and water pipelines within the jurisdiction of the City of Antioch shall also be committed to the limited construction timeframes of 9 AM to 2:30 PM, when temporary travel lane closures occur along key intersections. Construction within any of City of Antioch's road right-of-ways shall be prohibited between October 15<sup>th</sup> and February 1<sup>st</sup> of the year to address retail activities in the area.

Protocol: At least thirty days prior to start of construction, the project owner shall contact the various local agencies (City of Pittsburg, City of Antioch, Contra Costa, and Caltrans) to discuss scheduling of construction activities within their jurisdiction, and establish appropriate construction timeframes for pipeline activities along key intersections.

**Verification:** At least 30 days prior to start of construction activities in this specific area, the project owner shall in the Monthly Compliance Reports to the CPM, report on the use of the above measures in the construction of the underground pipelines. This condition shall be reflected in the construction traffic control plan and implementation program. The Monthly Compliance Reports shall also identify any alternative measures that were used to minimize impacts on the Pittsburg-Antioch Highway.

**TRANS-9** The project owner shall demonstrate accordance with the City of Pittsburg and the City of Antioch with right-of-way encroachment requirements related to work within the City of Antioch for road right-of ways, and the City of Pittsburg for the gas pipeline crossing at Loveridge Road and Pittsburg-Antioch Highway. These requirements are contained in the City of Antioch "Encroachment Regulations" Articles 1 through 7, and the City of Pittsburg "Encroachments Within Public Right-of-Ways", Title 12, Chapter 12.01. and referenced in Appendix A.

**Protocol:** Approximately thirty days prior to start of pipeline construction, the project owner shall contact the City of Antioch and City of Pittsburg and submit all documentation for their review and comment (insurance and construction bond as appropriate) and pay all fees applicable to encroachment. The project owner shall also contact various local agencies (City of Pittsburg, City of Antioch, Contra Costa County, and Caltrans) to discuss scheduling of construction activities within their jurisdiction, and establish appropriate construction timeframes for pipeline activities along key intersections.

**Verification:** The project owner shall provide a copy of the final encroachment documentation, including comments received from the City of Antioch and the City of Pittsburg in the next Monthly Compliance Report following their receipt for approval by the Energy Commission CPM.

## **REFERENCES**

PDEF (Pittsburg District Energy Facility, LLC/Parquet) 1998a. Application for certification, Pittsburg District Energy Facility (98-AFC-1). Submitted to the California Energy Commission, June 15, 1998.

PDEF (Pittsburg District Energy Facility, LLC/Parquet) 1998k. Supplement to the Application for Certification, Pittsburg District Energy Facility (98-AFC-1). Submitted to the California Energy Commission, December 7, 1998.

City of Pittsburg 1998-City of Pittsburg General Plan, 1998

Santina & Thompson, Inc. Final Environmental Impact Report for the Waterfront Truck Route. September 1991

**Traffic and Transportation Appendix A**  
**City of Pittsburg and City of Antioch Encroachment Regulations**

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# NOISE

## Errata to the Testimony of Steve Baker

### CORRECTIONS/CHANGES

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Page 172, under the section entitled "SETTING," after the first paragraph add the following new paragraph:

"The PDEF will include construction of a new two-lane Truck Bypass Road that connects E. 14<sup>th</sup> Street near its intersection with Columbia Street to Harbor Street near its intersection with Santa Fe Boulevard (PDEF 1998a, AFC §§ 1.3.3, 3.3.4, Figure 3.2-1). The road will be separated from adjacent residences by a sound wall ten to twelve feet high (PDEF 1998a, AFC § 5.12.2.7)."

Page 177, under the section entitled "Linear Facilities," after the existing paragraph, add the following new paragraph:

"The Truck Bypass Road will be similar to the City of Pittsburg's proposed Waterfront Truck Route, a project that was the subject of an earlier EIR (Pittsburg 1992). While the exact routing of the PDEF road differs slightly from the earlier proposal, the findings of the EIR regarding noise remain valid. While the height of the sound wall was questioned by nearby residents because of its visual impact, it was found to be necessary in order to adequately mitigate noise impacts from traffic on the road. Noise levels experienced at homes along Santa Fe Boulevard will be reduced from current ambient levels. Homes along Columbia will experience an increase in noise levels less than 3 dBA, while  $L_{dn}$  remains less than or equal to the General Plan recommended level of 60 dBA (Pittsburg 1992, Response to Comments #16, 22 & 23). Staff agrees with that EIR that, with the inclusion of the ten- to twelve-foot sound wall, the Truck Bypass Route should cause no significant adverse noise impacts to nearby residential receptors."

Page 183, References, after the entry "Peterson and Gross," add the following reference:

Pittsburg. 1992. Final Environmental Impact Report for the Waterfront Truck Route and Proposed Assessment District.



# **VISUAL RESOURCES**

Supplemental Testimony of Gary D. Walker

## **INTRODUCTION**

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Staff's original testimony on Visual Resources was filed on March 10, 1999. Some of the applicant's data responses regarding visual resources were submitted on March 3, 1999 (Patch 1999a), too late to be included in staff's analysis. In addition, at the March 24, 1999, staff workshop on the Staff Assessment, the applicant and the City of Pittsburg proposed additional mitigation measures, and the Delta Diablo Sanitation District expressed concerns about the proposed route for the underground electric transmission line. During a follow-up telephone conference call on March 30, 1999, options to solve the Sanitation District's concerns while minimizing land use and visual impacts were discussed. This supplementary testimony addresses these issues.

## **NEW MITIGATION PROPOSED BY THE APPLICANT**

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Staff's March 10, 1999, testimony identified potential significant impacts due to the proposed electric transition stations and nearby transmission poles. To mitigate these impacts, PDEF proposed at the March 24, 1999, staff workshop on the Staff Assessment to plant trees to screen public views of the transition stations and to reduce proposed pole heights from the original proposal of 150 feet down to 75 feet. Subsequent to the relocation of the proposed site for the western transition station, described below, the applicant provided revised simulations showing the effects of these changes (Patch 1999b)[April 5, 1999].

## **DELTA DIABLO SANITATION DISTRICT CONCERNS**

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At the March 24, 1999, staff workshop, representatives of Delta Diablo Sanitation District expressed concerns regarding the potential conflict between existing and proposed water lines connected to the District's pumping station at the west end of 8<sup>th</sup> Street and the proposed underground transmission line.

## **RELOCATION OF PART OF THE PROPOSED UNDERGROUND TRANSMISSION LINE AND TRANSITION STATION SITE**

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During an April 30, 1999, conference call that was a continuation of the March 24 workshop, several possible options to avoid the conflict with the District's water pipes were discussed. A consensus was reached to relocate the underground transmission line to run just outside the eastern and northern boundaries of the District's pumping station property, and to place the transition station just north of the northwest corner of the District's property (see **PROJECT DESCRIPTION Errata Figure 1**).

## ASSESSMENT OF VISUAL IMPACTS OF THE PROJECT CONSIDERING THE NEWLY PROPOSED MITIGATION

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The following section discusses the visual impact of the project with the recently proposed mitigation measures and the relocation of part of the underground transmission line and the western transition station.

### KEY OBSERVATION POINT 2 – SOUTHWEST CORNER OF EAST 8<sup>TH</sup> STREET AND HARBOR STREET

The Staff Assessment found that the proposed project would cause significant visual impacts from Key Observation Point 2 (KOP2), due primarily to the electric transition station and the nearest transmission pole near the east end of 8<sup>th</sup> Street. **VISUAL RESOURCES Figure 5a** from the Staff Assessment shows the existing view from KOP 2, from the nearest residence, at the southwest corner of East 8<sup>th</sup> Street and Harbor Street. **VISUAL RESOURCES Supplement Figure 5m** shows the view from KOP 2 with the project facilities and newly proposed mitigation measures simulated. The proposed transition station and the closest transmission pole of the proposed line to the PG&E power plant would be in the foreground. However, the view of almost all of the proposed transition station would be screened from view by proposed trees along the east side of Harbor Street. These trees would also screen approximately the lower half of the nearest proposed transmission pole. The trees would screen most of the view of the proposed power plant, two of the poles of the proposed transmission line to USS-POSCO steel mill, and the steel mill itself.

#### ***Contrast***

The industrial elements in the view would be somewhat more prominent than in the existing view, primarily because the upper half of the nearest transmission pole visible above the proposed trees would extend more into the sky than the existing industrial facilities. The increment of contrast created by the project would be small, so contrast would be low.

#### ***Scale Dominance***

The project, particularly the closest transmission pole and the transition station, would appear of moderate size in comparison to the wide field of view, and would occupy a small part of the setting. Therefore, scale dominance from Key Observation Point 2 would be subordinate.

#### ***Spatial Dominance***

Because the spatial composition of the view from Key Observation Point 2 is panoramic, the project would be subordinate in regard to composition. Because the project would be backdropped by sky, spatial dominance in regard to backdrop would be prominent. The overall spatial dominance rating would be co-dominant.

### ***View Blockage***

From Key Observation Point 2 the project would block a small part of a view with low to moderate visual quality, so view blockage would be negligible.

### ***Visual Impact***

Summarizing the visual factors for KOP 2:

- visual sensitivity is high;
- visual quality is low to moderate;
- visibility is moderate for residences and moderate to high for eastbound travelers on East 8<sup>th</sup> Street;
- viewer exposure is moderate to high for residences and moderate for travelers;
- contrast would be low;
- scale dominance would be subordinate;
- spatial dominance would be co-dominant; and
- view blockage would be negligible.

The March 4, 1999 data response shows that the transition station would be located approximately 200 feet east of Harbor Street. This would allow sufficient room for the proposed landscaping. The landscaping would address the need for buffers between residential and industrial areas identified in the City of Pittsburg's *Pittsburg General Plan Update: Existing Conditions and Planning Issues* (1998).

**Considering all of these factors, from KOP 2 the project with mitigation would not cause a significant visual impact. Energy Commission staff discusses potential mitigation measures below.**

## **KEY OBSERVATION POINT 7 – JUST NORTH OF THE CORNER OF WEST 8<sup>TH</sup> STREET AND BEACON STREET**

The Staff Assessment found that the proposed project would cause significant visual impacts from KOP7, due to the electric transition station and the nearest transmission pole near the west end of 8<sup>th</sup> Street. **VISUAL RESOURCES Figure 10a** from the Staff Assessment shows the existing view from KOP 7, from the homes at the corner of West 8<sup>th</sup> Street and Beacon Street. **Visual Resources Supplement Figure 10m** (Patch 1999b) shows the view from KOP 7 with the project facilities and newly proposed mitigation measures simulated. The relocation of the transition station combined with the mitigation measures would have reduced the visual impacts of the proposed facilities. However, concern regarding the potential conflict between the proposed underground transmission line and the water pipes of the Delta Diablo Sanitation District led to identification of a route

modification and a different site for the transition station, just north of the northwest corner of the District's property. These changes would eliminate the potential conflict with the District's water pipes. In regard to visual impacts, the pumping station structures would screen most of the proposed transition station at the new site from view. The new location for the transition station also would mean that the nearest transmission pole would be more than 200 feet farther from the residences represented by KOP7.

***Contrast***

Because the Delta Diablo pumping station structures would largely screen the electric transition station from view from KOP7 and because the transmission poles would be approximately the same apparent height as the existing PG&E Pittsburg Power Plant exhaust stacks, the project facilities would add only a small increment to the existing industrial elements in the view, so contrast would be low.

***Scale Dominance***

The transition station would be barely visible. The closest transmission pole would appear of moderate size in comparison to the wide field of view, and would occupy a small part of the setting. Therefore, scale dominance from Key Observation Point 7 would be subordinate.

***Spatial Dominance***

Because the spatial composition of the view from Key Observation Point 7 is panoramic, the project would be subordinate in regard to composition. Because the project would be partially backdropped by sky, spatial dominance in regard to backdrop would be moderate. The overall spatial dominance rating would be co-dominant.

***View Blockage***

From Key Observation Point 7 the project would block a small part of a view with low to moderate visual quality, so view blockage would be negligible.

***Visual Impact***

Summarizing the visual factors for KOP 7:

- visual quality is low to moderate
- visual sensitivity is high;
- visibility is moderate;
- viewer exposure is moderate to high;
- contrast would be low;
- scale dominance would be subordinate;

- spatial dominance would be co-dominant; and
- view blockage would be negligible.

**Considering all of these factors, from KOP 7 the project with mitigation would not cause a significant visual impact. Energy Commission staff discusses mitigation measures below.**

## **KEY OBSERVATION POINT 9 – NORTHWEST END OF MARINA PARK LOOKING SOUTH**

**VISUAL RESOURCES Figure 12a** in the Staff Assessment shows the existing view from KOP 9, at the northwest end of Marina Park looking south toward the western portion of the proposed electric transmission line route from the proposed power plant to the PG&E Pittsburg Power Plant substation. The Staff Assessment evaluated visual quality, viewer sensitivity, visibility, and viewer exposure for KOP 9. Staff did not complete the impact analysis for KOP 9 in the Staff Assessment because the applicant did not provide data responses regarding this KOP in time to be included in the analysis. This section completes that analysis. The data responses have since been provided (Patch 1999a). However, the revised simulation (**VISUAL RESOURCES Supplement Figure 12c**) depicts 150 foot tall transmission poles, while the applicant has subsequently proposed that the poles be 75 feet tall. Because of the shorter pole heights, span lengths must be shorter, so this section of overhead line would require an additional pole. Because of these changes, the simulation can only be used as a basis from which to estimate the visual impacts of the poles now proposed. Also, the project modifications change the assessment of viewer exposure and visibility, as described below.

### ***Viewer Exposure***

Three transmission line poles would be in the foreground, the number of viewers is small, and the view duration is moderate, so viewer exposure is moderate.

### ***Visibility***

The berms of the settling basin north of the newly proposed site for the transition station would screen most of the transition station from view. The 20-foot deep trough in which the transmission poles would be placed would screen the lower portions of the 75-foot tall transmission poles from view. Overall, visibility is moderate for KOP 9.

### ***Contrast***

Because the settling basin would largely screen the electric transition station from view from KOP9 and because the transmission poles would add only a small increment to the existing industrial elements in the view, contrast would be low.

### ***Scale Dominance***

The transition station would be barely visible from Marina Park. The closest transmission pole would appear of moderate size in comparison to the wide field of

view, and would occupy a small part of the setting. Therefore, scale dominance from Key Observation Point 7 would be subordinate.

***Spatial Dominance***

Because the spatial composition of the view from Key Observation Point 9 is panoramic, the project would be subordinate in regard to composition. Because the project would be backdropped by hills, spatial dominance in regard to backdrop would be moderate. The overall spatial dominance rating would be co-dominant.

***View Blockage***

From Key Observation Point 9 the project would block a small part of a view with moderate visual quality, so view blockage would be weak.

***Visual Impact***

Summarizing the visual factors for KOP 9:

- visual quality is moderate
- visual sensitivity is high;
- visibility is moderate;
- viewer exposure is moderate;
- contrast would be low;
- scale dominance would be subordinate;
- spatial dominance would be co-dominant; and
- view blockage would be weak.

**Considering all of these factors, from KOP 9 the project with mitigation would not cause significant visual impacts. Energy Commission staff discusses mitigation measures below.**

# ASSESSMENT OF COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS AND STANDARDS CONSIDERING THE NEWLY PROPOSED MITIGATION

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## LOCAL

### ***CITY OF PITTSBURG***

As the Staff Assessment explained, the proposed project has the potential to not comply with Pittsburg's policies to protect existing and new residential areas from adverse effects of new industry and utilities. This applies to residences represented by KOP 2, potentially affected by the proposed eastern transition station and pole. Proper implementation of the newly proposed mitigation measure to provide landscaping screening would achieve compliance with this policy.

### ***CONTRA COSTA COUNTY***

As the Staff Assessment explained, the proposed project has the potential to not comply with Contra Costa County's policy to require buffers between new industrial developments and residential areas by establishing setbacks and park-like landscaping. This applies to residences represented by KOP 7, potentially affected by the proposed western transition station on land under County jurisdiction. Proper implementation of the newly proposed mitigation measures to relocate the transition station farther from residences and provide landscaping screening would achieve compliance with this policy.

Open Space Element Scenic Resource Policy 9.17 of the Contra Costa General Plan states that new power lines shall be located parallel to existing lines in order to minimize their visual impact. However, the land under the jurisdiction of Contra Costa County that the above-ground portion of the proposed transmission line would cross is designated industrial, so the open space policy does not apply.

### ***SUMMARY***

The project as currently proposed, with recommended mitigation measures, would comply with applicable laws, ordinances, regulations, and policies regarding visual resources.

## MITIGATION

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### **APPLICANT'S PROPOSED MITIGATION MEASURES**

As described above, the applicant has recently proposed two measures to mitigate visual impacts identified by Energy Commission staff, the City of Pittsburg, and Contra Costa County. These measures are:

- to provide landscaping screening as a buffer between the proposed electric transition stations and residential areas, and
- to reduce proposed transmission pole heights from 150 feet to 75 feet.

## **ADDITIONAL MITIGATION**

### **TRANSMISSION LINE TO PG&E PITTSBURG POWER PLANT SUBSTATION**

#### ***Eastern Above-Ground Section***

Energy Commission staff, as discussed above, concludes that with proper implementation of proposed mitigation measures the proposed transition station at the east end of 8<sup>th</sup> Street and the related transmission poles would not cause significant visual impacts. However, the simulation of the project shows the tree screening with trees substantially larger than the typical size of trees at the time of planting for landscaping. To achieve substantial immediate screening large trees need to be planted as soon as feasible after project approval. Therefore, staff's proposes that trees at least 15 feet in height be planted in the first planting season after the start of project construction. To screen the portions of the transition station and the power plant that would otherwise be visible beneath the tree branches, shrubs should be planted between the trees. These requirements are included in a condition of certification proposed below.

#### ***Western Above-Ground Section***

Energy Commission staff, as discussed above, concludes that with proper implementation of proposed mitigation measures the proposed transition station at the west end of 8<sup>th</sup> Street and the related transmission poles would not cause significant visual impacts. The mitigation measures are included in a condition of certification proposed below.

## **CONCLUSIONS AND RECOMMENDATIONS**

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### **CONCLUSIONS**

The project as proposed has the potential to cause significant adverse visual impacts due to the visual effects of the proposed electric transition stations, nearby transmission poles, and the sound wall for the truck bypass route. Effective implementation of applicant's proposed mitigation measures, as modified and expanded by staff's recommendations, is expected to reduce visual to less than significant levels. With the proposed mitigation the project is expected to be in compliance with applicable laws, ordinances, regulations, and standards regarding visual resources.

### **RECOMMENDATIONS**

The Energy Commission should adopt the following conditions of certification if it approves the project.

## ADDITIONAL PROPOSED CONDITIONS OF CERTIFICATION

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**VIS-8** During the first planting season following the start of project construction, the project owner shall implement a landscaping plan along the eastern side of Harbor Street in Pittsburg, to screen the proposed eastern electric transition station, the transmission poles, and the power plant from public views along 8<sup>th</sup> Street and along the east end of 9<sup>th</sup> Street and 10<sup>th</sup> Streets.

Protocol: The project owner shall submit to the CEC CPM for review and approval a specific plan describing its landscaping proposal, with a letter from the City of Pittsburg containing the City's review of the plan. The plan shall include, but not be limited to:

1. a detailed landscape plan, at a readable scale, which includes a list of proposed tree and shrub species and sizes and a discussion of the suitability of the plants for the site conditions and mitigation objectives. Objectives shall include:
  - To provide year-round screening. To meet this objective evergreen species shall be used.
  - To provide a virtually complete screen. To meet this objective shrubs shall be planted between trees.
  - To provide substantial immediate screening. To meet this objective trees at least 15 feet tall shall be used.
  - To eventually provide screening at least 40 feet tall. To meet this objective, appropriate species shall be used.
  - To use species that grow rapidly.
2. maintenance procedures, including any needed irrigation; and
3. a procedure for replacing unsuccessful plantings.

*The plan shall propose species and spacing to achieve these objectives.*

If the CPM notifies the project owner that revisions of the plan are needed before the CPM will approve the plan, the project owner shall prepare and submit to the CPM a revised plan.

No landscaping shall be installed before the plan is approved by the CPM.

The project owner shall notify the CPM when the landscaping has been installed and is ready for inspection.

Verification: At least 60 days prior to the start of project construction, the project owner shall submit the proposed screening plan to the CPM for review and approval.

If the CPM notifies the project owner that any revisions of the plan are needed before the CPM will approve the plan, within 30 days of receiving that notification the project owner shall prepare and submit to the CPM a revised plan.

The project owner shall notify the CPM within seven days after completing the landscaping that the landscaping is ready for inspection.

**VIS-9** During the first planting season following the start of project construction the project owner shall implement a landscape plan along the railroad easement north of the west end of Eighth Street in Pittsburg, from the eastern boundary of the PG&E property to the eastern boundary of the Delta Diablo Sanitation District property, to screen the proposed western electric transition station and transmission poles from public views along Eighth Street and Beacon Street.

Protocol: The project owner shall submit to the CEC CPM for review and approval a specific plan describing its landscaping proposal, with a letter from Contra Costa County containing the County's review of the plan. The plan shall include, but not be limited to:

1. a detailed landscape plan, at a readable scale, which includes a list of proposed tree and shrub species and sizes and a discussion of the suitability of the plants for the site conditions and mitigation objectives. Objectives shall include:
  - To provide year-round screening. To meet this objective evergreen species shall be used.
  - To provide a virtually complete screen. To meet this objective shrubs shall be planted between trees.
  - To provide substantial immediate screening. To meet this objective trees at least 15 feet tall shall be used.
  - To eventually provide screening at least 40 feet tall. To meet this objective, appropriate species shall be used.
  - To use species that grow rapidly.
2. maintenance procedures, including any needed irrigation; and
3. a procedure for replacing unsuccessful plantings.

*The plan shall propose species and spacing to achieve these objectives*

If the CPM notifies the project owner that revisions of the plan are needed before the CPM will approve the plan, the project owner shall prepare and submit to the CPM a revised plan.

No landscaping shall be installed before the plan is approved by the CPM.

The project owner shall notify the CPM when the landscaping has been installed and is ready for inspection.

Verification: At least 60 days prior to the start of project construction, the project owner shall submit the proposed landscaping plan to the CPM for review and approval.

If the CPM notifies the project owner that any revisions of the plan are needed before the CPM will approve the plan, within 30 days of receiving that notification the project owner shall prepare and submit to the CPM a revised plan.

The project owner shall notify the CPM within seven days after completing the landscaping that the landscaping is ready for inspection.

**VIS-10** All transmission poles shall be a maximum of 75 feet in height.

Protocol: The project owner shall submit to the CEC CPM for review and approval final plans for the transmission poles, specifying their height.

If the CPM notifies the project owner that revisions of the plan are needed before the CPM will approve the plan, the project owner shall prepare and submit to the CPM a revised plan.

The transmission poles shall not be installed before the plan is approved. The project owner shall notify the CPM when the poles have been installed and are ready for inspection.

Verification: At least 60 days prior to the start of project construction, the project owner shall submit the plans to the CPM for review and approval.

If the CPM notifies the project owner that any revisions to the plans are needed before the CPM will approve the plans, within 30 days of receiving that notification the project owner shall prepare and submit to the CPM revised plans.

The project owner shall notify the CPM within seven days after completing installation of the poles that the poles are ready for inspection.

## ADDITIONAL REFERENCES

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PATCH, Inc. (Patch Incorporated/Patch) 1999a. Responses to CEC Data Request dated January 22, 1999, Map 9771-2044 Rev C (Transmission Location at West 8<sup>th</sup> Street), and Figure 5.13-14 B as requested at the Public Workshop held in Pittsburg, California on January 22, 1999. Submitted to the California Energy Commission, March 3, 1999.

Cited in the text as: (Patch 1999a)

PATCH, Inc. (Patch Incorporated/Patch) 1999b. 115 kV transmission line related photosimulations and drawings for the Pittsburg District Energy Facility Project. Submitted to the California Energy Commission, April 5, 1999.

Cited in the text as: (Patch 1999b)

**VISUAL RESOURCES Supplement Figure 5m**  
Project from KOP 2 with Proposed Mitigation Measures

Source: Patch, Inc. 1999\_

**VISUAL RESOURCES Supplement Figure 10m**  
Project from KOP 7 with Proposed Mitigation Measures

Source: Patch, Inc. 1999\_

**VISUAL RESOURCES Supplement Figure 12c**  
Proposed Project from KOP 9

Source: Patch, Inc. 1999\_



# CULTURAL RESOURCES

Revised Testimony of Kathryn M. Matthews and Dorothy Torres

## INTRODUCTION

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This analysis discusses cultural resources that are defined to include the structural and cultural evidence of the history of human development and life on earth. Evidence of California's early occupation is becoming increasingly vulnerable to the ongoing development and urbanization of the state.

Cultural resource materials may be found nearly anywhere in California: along the ocean coastline and on coastal islands; along rivers and streams; in coastal and inland valleys and lowlands; throughout the coastal and inland mountain ranges; and throughout the interior deserts. Cultural resources may be found on the ground or may be found at varying depths beneath the surface. In some areas of the state, a sequence of settlements on the same site may cover multiple layers of cultural resources. In other areas, the distribution of cultural materials may be much more dispersed.

Cultural resources are significant to our understanding of our culture, our history and heritage. Critical to the analysis of cultural resources are the spatial relationships between an undisturbed cultural resource site and the surface environmental resources and features, and the analysis of the locational context of the resource materials within the site and beneath the surface. These relationships provide information that can be used to piece together the sequence of human occupation and use of an area, and they begin to create a picture of the former inhabitants and their environment.

Staff's primary concerns in its cultural resource analysis are to ensure that all potential impacts are identified and that conditions are set forth which ensure no significant adverse impacts will occur. The determination of potential impacts to cultural resources from the proposed Pittsburg District Energy Facility (PDEF) is required by the Siting Regulations of the California Energy Commission (Energy Commission) and by the California Environmental Quality Act (CEQA). Three aspects of cultural resources are addressed in Staff's analysis: prehistoric archaeological resources, historic archaeological resources and ethnographic resources.

## PREHISTORIC RESOURCES

Prehistoric archaeological resources are those materials relating to prehistoric human occupation and use of an area; these resources may include sites and deposits, structures, artifacts, rock art, trails, and other traces of prehistoric human behavior. In California the prehistoric period began over 10,000 years ago and extended through the 18th century when the first Euro-American explorers settled in California.

## **HISTORIC RESOURCES**

Historic archaeological resources are those materials usually associated with Euro-American exploration and settlement of an area and the beginning of a written historical record; they may include archaeological deposits, sites, structures, travelled ways, artifacts, documents, or other evidence of human activity. Under state requirements, cultural resources must be greater than 100 years old while under federal requirements, such materials are considered if they are greater than 50 years old.

## **ETHNOGRAPHIC RESOURCES**

Ethnographic resources are those materials important to the heritage of a particular ethnic or cultural group, such as Native Americans, African, European, or Asian immigrants. They may include traditional resource collecting areas, ceremonial sites, topographic features, cemeteries, shrines, or ethnic neighborhoods and structures.

## **LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)**

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Cultural resources are indirectly protected under provisions of the federal Antiquities Act of 1906 (Title 16, United States Code, § 431-433) and subsequent related legislation, policies, and enacting responsibilities. The following laws, ordinances, regulations, standards, and policies apply to the protection of cultural and ethnographic resources in California. Projects licensed by the Energy Commission are reviewed for compliance with these laws.

### **FEDERAL**

- National Environmental Policy Act (NEPA): Title 42 United States Code, Section 4321-4327 requires federal agencies to consider potential environmental impacts of projects with federal involvement and to consider appropriate mitigation measures.
- Federal Guidelines for Historic Preservation Projects: The US Secretary of the Interior has published a set of Standards and Guidelines for Archaeology and Historic Preservation. These are considered to be the appropriate professional methods and techniques for the preservation of archaeological and historic properties. The Secretary's standards and guidelines are used by federal agencies, such as the Forest Service, the Bureau of Land Management, and the National Park Service. The State Historic Preservation Office, refers to these standards in its requirements for mitigation of impacts to cultural resources on public lands in California.
- Section 106 of the federal guidelines sets forth procedures to be followed for determining eligibility for nomination, the nomination, and the listing of cultural resources in the National Register of Historic Places. The eligibility criteria and the process are used by federal, state and local agencies in evaluating the significance of cultural resources. Very similar criteria and procedures are used

by the state in identifying cultural resources eligible for listing in the State Register of Historic Resources.

- Executive Order 11593, "Protection of the Cultural Environment," May 13, 1971, (36 Federal Register, 8921) orders the protection and enhancement of the cultural environment through providing leadership, establishing state offices of historic preservation, and developing criteria for assessing resource values.
- American Indian Religious Freedom Act; Title 42 United States Code, Section 1996 protects Native American religious practices, ethnic heritage sites, and land uses.
- Native American Graves Protection and Repatriation Act (1990); Title 25, United States Code Section 3001, *et seq.* defines "cultural items", "sacred objects", and "objects of cultural patrimony"; establishes an ownership hierarchy; provides for review; allows excavation of human remains, but stipulates return of the remains according to ownership; sets penalties; calls for inventories; and provides for return of specified cultural items.

## STATE

The following discussion of California law related to the California Environmental Quality Act (CEQA) was revised in late 1998 and most of the changes have been incorporated into this revised list.

- Public Resources Code, Section 5020.1 defines several terms, including the following:
  - (j) "Historical resource" includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.
  - (k) "Substantial adverse change" means demolition, destruction, relocation, or alteration such that the significance of an historical resource would be impaired.
- Public Resources Code, Section 5024.1 establishes a California Register of Historic Places; sets forth criteria to determine significance; defines eligible properties; and lists nomination procedures.
- Public Resources Code, Section 5097.5 states that any unauthorized removal or destruction of archaeological or paleontological resources on sites located on public land is a misdemeanor. As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority or public corporation, or any agency thereof.
- Public Resources Code, Section 5097.98 defines procedures for notification of discovery of Native American artifacts or remains and for the disposition of such materials. This section also prohibits obtaining or possessing Native American

artifacts or human remains taken from a grave or cairn and sets penalties for these actions.

- California Environmental Quality Act (CEQA) 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, such resources must be avoided; if they can’t be avoided, mitigation measures shall be required. The law also discusses excavation as mitigation; discusses the cost of mitigation for several types of projects; sets time frames for excavation; defines “unique and non-unique archaeological resources”; provides for mitigation of unexpected resources; sets financial limitations for this section.
- Public Resources Code Section 21084.1 -- indicates that a project may have a significant effect on the environment if it causes a substantial adverse change in the significance of a historic resource; the section further defines a “historic resource” and describes what constitutes a “significant” historic resource.
- CEQA Guidelines, section 15126.4 “Consideration and Discussion of Mitigation Measures Proposed to Minimize Significant Effects”, sub-section (b) “Mitigation Measures Related to Impacts on Historical Resources”. Sub-section (1) discusses impacts of maintenance, repair, stabilization, restoration, conservation, or reconstruction of a historical resource. Sub-section (2) discusses documentation as a mitigation measure. Sub-section (3) 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 “Determining the Significance of Impacts to Archaeological and Historical Resources”. Sub-section (a) section defines the term “historical resources”. Subsection (b) explains when a project may be deemed to have a significant effect on historic resources and defines terms used in describing those situations. Subsection (c) describes CEQA’s applicability to archaeological sites and provides a bridge between the application of the terms “historic resources” and a “unique archaeological resources”.
- Penal Code, Section 622 1/2 -- Anyone who willfully damages an object or thing of archaeological or historic interest is guilty of a misdemeanor.

California Environmental Quality Act (CEQA) Guidelines: “ISSUE V: CULTURAL RESOURCES”. Lists criteria pertinent to determining the potential for a project to impact archaeological, historic, and paleontologic resources.

- California Health and Safety Code Section 7050.5. If human remains are discovered during construction, the project owner is required to contact the county coroner.

## **LOCAL**

Although the Energy Commission has pre-emptive authority over local laws, it typically ensures compliance with local laws, ordinances, regulations, standards, plans, and policies.

### ***CONTRA COSTA COUNTY***

One of the goals in the Contra Costa County General Plan is “to identify and preserve important archaeological and historic resources within the county.” The policies related to this goal and set forth in the plan are as follows:

1. Areas which have identifiable and important archaeological or historic significance shall be preserved for such uses, preferably in public ownership.
2. Buildings or structures that have visual merit and historic values shall be protected.
3. Development surrounding areas of historic significance shall have compatible and high quality design in order to protect and enhance the historic quality of the area (Contra Costa 1996).

### ***CITY OF PITTSBURG***

The General Plan for the City of Pittsburg sets forth goals related to cultural resources. The relevant sections are as follows:

- D. To encourage the preservation, protection, enhancement and use of structures that represent past eras, events and persons important in history, or which provide significant examples of architectural styles of the past, or are landmarks in the history of architecture, or which are unique and irreplaceable assets to the city and its neighborhoods, or which provide for this and future generations, examples of the physical surroundings in which past generations lived.
- E. To encourage the preservation of varied architectural styles which reflect the cultural, social, economic, political, and architectural phases of the city's history.
- F. “To provide for the educational and cultural enrichment of this and future generations by fostering knowledge of our heritage”.

The General Plan does not identify any specific measures or requirements for mitigation of potential impacts (Pittsburg 1998).

## **CITY OF ANTIOCH**

Staff for the City of Antioch indicated that Antioch does not have written ordinances or guidelines concerning the protection of cultural resources. City planning staff indicated they typically rely on environmental documentation provided by project developers (Bendorff 1999).

## **SETTING**

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### **REGIONAL DESCRIPTION**

The project is located at the northern end of the Diablo Range of the northern Coast Ranges Physiographic Province of California. The Coast Ranges are characterized by a northwesterly trending series of mountains and valleys. The Diablo Range is dominated by Mt Diablo, which rises 3,849 feet above the surrounding rivers, valleys, and coastal range. The project site is located on relatively flat land, just above sea level, that lies on the southern edge of the delta system below the confluence of two major river systems. These rivers - the Sacramento and the San Joaquin, drain the vast interior, Central Valley of California. Refer to the Project Description section of this Staff Assessment for a regional map of the project development area.

While this part of California has been subjected to a series of climatic fluctuations over the past several thousand years, studies have indicated that the flora and fauna have not changed as dramatically in the project area, as they have in other parts of California. There are three principal plant communities near the project area: Valley Grasslands, Oak Woodland and Chaparral. A fourth vegetation community, Brackish and Freshwater Marsh, exists in lands adjacent to the project area. The Sacramento / San Joaquin Delta was once dominated by this marshy environment, but has now been much reduced to discontinuous patches of marshland as a result of extensive development during this past century (PDEF 1998a; 1998bb; 1998cc).

### ***PREHISTORIC SETTING***

The archaeological literature indicates that early residents typically lived near water sources that provided them with access to a wide variety of plant and animal resources. The AFC presents archaeological evidence from sites found north of the project area, in Lake County, that indicates native peoples occupied the Clear Lake area as early as 10,000 years ago. Archaeological evidence in the San Francisco Bay area indicates human habitation from as early as 5,000 years ago. Evidence from archaeological sites located close to the proposed project suggests that human occupation may go back to nearly 2,500. Unfortunately most of the evidence of these early occupation sites has been inundated by rising sea levels, covered by alluvial deposits during seasonal flooding of the rivers, and buried by the deposition of extensive sediments during the up-river hydraulic mining efforts in the late 1800s (PDEF 1998a; 1998bb; 1998cc).

## ***ETHNOGRAPHIC BACKGROUND***

The project area falls within the recorded territory of the Bay Miwok who lived in the area extending from the Suisun Bay to just south of Mount Diablo and eastward to the Sacramento / San Joaquin Delta. The Bay Miwok exploited a wide range of plants and animal resources. They used an extensive inventory of stone tools, baskets and wood and bone implements. They also traded with surrounding groups for obsidian, shell and other ornaments (PDEF 1998a; 1998bb; 1998cc).

At the time of Spanish contact in the late 1700s, the Bay Miwok were divided into tribelets consisting of several hundred individuals. Each tribelet controlled and exploited the resources within a recognized territory. The tribelet associated with the immediate project area was known as the Chupcan (PDEF 1998a; 1998bb; 1998cc).

The native peoples who inhabited the lands bordering the east side of the San Francisco Bay were known as the Coastanoan or Ohlone. Their territory extended around the edge of the Suisun Bay as far as the modern-day town of Crockett and they were neighbors to the Bay Miwok in the project area (PDEF 1998a; 1998bb; 1998cc).

## ***CONTACT AND EARLY SETTLEMENT***

Euro-American contact with the native Bay Miwok people first occurred during a series of Spanish expeditions into the area between 1769 and 1776. By 1822, the interests of the Spanish government were replaced by the Mexican government. To protect its holdings, the Mexican government granted large tracts of land to private individuals and by 1845, most of the land holdings were in the form of large ranchos. Rancho Los Medanos, named after the sand hills common in the area, stretched from the San Joaquin River, south towards Mt. Diablo (an area now the site of the modern cities of Pittsburg and Antioch). In 1848 Mexico relinquished California to the United States under the Treaty of Guadalupe Hidalgo. In 1849 the discovery of gold brought an influx of people seeking gold or jobs producing goods or services for gold miners. Land in the region was used to excess as livestock grazed some native grasses to extinction, woodlands were cut for lumber, and railroads, mines and agriculture developed on nearly all arable land (PDEF 1998b).

## ***SITE AND VICINITY DESCRIPTION***

The proposed project is located in northern Contra Costa County where, in the 1850's, New York Landing (now the City of Pittsburg) and Antioch were founded. The early economy of both areas was based on farming, herding, and trading, although there was no evidence in the literature to indicate that the project site was ever in agricultural use. In 1859 coal was discovered at the base of Mt. Diablo and coal mining had a brief, but important role in the development of Contra Costa County. In the 1860's, railroads were built to transport coal to both the Pittsburg Landing and the New York Landing near Port Chicago. The intersection of the Pittsburg, the San Pablo, and the Tulare railroad alignments, and the country road became known as "Los Medanos Station". There is no indication in the literature that there was ever a structure located at that site (PDEF 1998b).

Current development in the immediate project vicinity is largely industrial, with a mix of commercial and residential uses nearby. Steel production has been a predominant industry in the area since the 1920s. In 1986 the US Steel facility, which had been recognized as the first hot-dip, tinplate mill west of the Mississippi, became a joint venture between U.S. and Asian steel companies (PDEF 1998a).

The New York Slough currently serves as an access route to the river delta and the bays. The project area has been the site of industrial facilities for at least 100 years and it seems reasonable to assume that the slough has also been utilized as a shipping route for over 100 years (PDEF 1998b).

Please refer to the **Project Description** section for a detailed description of the project and related facilities, a project site map and facility layout plan, and maps of the alternative routes proposed for linear facilities.

### ***PRE-AFC LITERATURE AND RECORDS SEARCH***

Prior to preparation of the AFC, consultants to the applicant reviewed literature, site records, and maps at the Northeast Center of the California Historical Resources Information System (CHRIS). These reviews are conducted to establish the extent of previous cultural resource surveys and the location of known resources within the project area. These background searches provide a basis from which to predict the archaeological potential of the project area and is also used to provide a context for the evaluation of the significance of known or previously unknown resources that may be affected by the project.

For the PDEF, the record search focused on the Area of Potential Effect (APE) for project construction and operation. The APE is defined as the area within 100 feet around the plant site and laydown areas and within 100 feet from the centerline of the routes for all linear facilities. The records showed that eleven archaeological surveys have been conducted in the project area in the last 5 to 20 years but these only covered portions of the proposed project area. The records also indicated there are no previously recorded archaeological sites or built-environment features located within the project APE.

The record search also included adjacent areas located up to 0.25 miles away from the project site and linear routes. The records did show there are sixteen (13 prehistoric and 3 historic) sites located within 0.25 miles of the project APE but none of these are expected to be impacted by the proposed project. Results of the literature review and record search were summarized in Section 5.7 of the AFC and site-specific information was filed with the Energy Commission under separate cover to maintain confidentiality of sensitive resource locations (PDEF 1998a; 1998bb; 1998cc).

## ***ARCHAEOLOGICAL FIELD SURVEYS***

### **PRE-AFC**

An intensive pedestrian survey of the project area was completed by archaeological resource specialists on April 27, May 1, and May 6 of 1998. Since many of the linear facilities are proposed for construction in a highly developed industrial /commercial /residential; zone, surveys of the full corridor width were not always possible. Ground visibility varied from poor to excellent, depending upon the current land use. Where the routes for project-related linear facilities followed roadways, the surveyors examined any exposed soils on either side of the pavement (PDEF 1998a; 1998bb; 1998cc).

### ***POWER PLANT***

The power plant site is located within the city of Pittsburg. The proposed project site is considerably disturbed by previous development and most of the site is covered with imported fill materials to a depth of four to eight feet. For the project site and laydown area, the surveyors walked in transects 10 to 20 meters apart and no evidence of cultural resources was found (PDEF 1998a; 1998bb; 1998cc).

### ***ELECTRIC TRANSMISSION LINE ROUTE(S)***

The AFC indicates that most of routes for the electric transmission line go through areas that are heavily industrialized, with many modern infrastructural features such as electrical transmission lines, roads, railroad tracks and other newer structures. Major portions of the proposed transmission routes cross lands covered with imported fill or they have been subject to extensive disturbance from industrial, commercial, and residential development. For most of the linear facility routes, the surveyors walked over an area 200-foot wide (100 feet on either side of the centerline) wherever possible (PDEF 1998a; 1998bb; 1998cc).

Two routes were proposed for the electric transmission lines. Route 10 is nearly two miles long and it would cross an area that is a mix of vacant and developed lands. Portions of the transmission lines would be built above ground and the remainder would run underground, beneath the pavement of Eighth Street. A Historic District of state and local importance is located to the north of the underground portion of this route and there are seven structures of note within the district. Route 11 is a little over one mile long and portions of it would cross areas that are vacant land or that are developed. No surface evidence of cultural resources was observed during surveys of the transmission line routes 10 and 11 (PDEF 1998a; 1998bb; 1998cc).

In a supplement to the AFC, portions of the proposed electric transmission routes were modified. A portion, or possibly all, of the electrical transmission facilities may be constructed underground. A portion of the route follows or crosses existing roadways where the underlying soils are either hidden by pavement or have been previously disturbed during preparation for roadway construction.

## ***WATER SUPPLY PIPELINES***

Potable water for the project will be provided by existing city water mains and will require a short pipeline. Raw water for the project will be supplied through a 16-inch pipeline from the Delta Diablo Wastewater Treatment Facility. Two route alternatives for the raw water pipeline are presented in the AFC. Route 4 is 2.63 miles long and most of the route will be built under or immediately adjacent to paved roads. Route 5 is about 2.27 miles long and parallels route 4 for most of its length, until it turns to cross the open lands located easterly of the railroad right of way. Where the ground was exposed during pre-AFC surveys, the surveyors walked in (PDEF 1998a).

## ***NATURAL GAS PIPELINE***

The natural gas pipeline will be 3.6 miles long and 10 inches in diameter. The trench necessary to accommodate the pipeline will be approximately 2 feet wide and 5 feet deep. It is anticipated that the maximum excavation will not be more than 6 feet deep. The average depth of cover over the pipeline is 4 feet and the AFC concludes that construction of this gas pipeline would not impact any element of the built environment. No archaeological resources were observed along this corridor (PDEF 1998a; 1998bb; 1998cc). There is also the possibility of disturbing resources below ground.

## ***OTHER LINEAR FACILITY ROUTES***

An approximately 0.6-mile long steam line will be proposed to serve the PDEF facility. The steam line will be carried on racks above ground and the pipeline route would cross lands that are either paved or highly disturbed by industrial development. There is a slight possibility that the ruins of an early 20th century power plant and calcineing operation located south of the proposed steam line could be disturbed by installation of the steam pipeline.

The sanitary sewer lines will be built under an existing street. Since the area was previously disturbed, the potential for new disturbance is low (PDEF 1998a; 1998bb; 1998cc).

\*

Only one previously unknown site was identified during pre-AFC surveys. The new site, CA-CCO-715H, discovered and recorded during the surveys lies within the 200-foot survey corridor, but lies outside the 100-foot APE. This resource site consists of remnant foundations of an abandoned power plant and a calcineing plant complex.

After the site was mapped and recorded, the information was filed with the Northeast Center of the CHRIS. For its files, the information center denotes recorded sites and isolated finds with a three-part identification number to indicate the state, county, and timing of the find. If a site has a historic, as well as

prehistoric, component to it, the trinomial designation is followed by an "H". The new site found during the surveys is now identified as CA-CCO-715H/P-07-000761. No other cultural resource sites or materials were found during the pre-AFC surveys (PDEF 1998b).

#### **POST-AFC**

In December 1998 the applicant filed a supplement to the AFC in which some minor changes were made to the original project site layout and some of the linear facility routes. Two new alternative transmission routes and two new alternative utility corridors for pipeline or transmission facility routes were described. Pedestrian surveys were conducted on October 11 and 12, 1998 and no new cultural resources or sites were discovered (PDEF 1998bb; 1998cc).

#### **ARCHITECTURAL RECONNAISSANCE**

Structures older than about forty-five years are potentially significant historic resources in the project area. Wherever possible, the survey team conducted pedestrian surveys of all proposed alternative linear facility routes and drove along the roadways in the APE to determine whether architecturally significant structures were present and whether the project would potentially affect them. While many industrial buildings and residences were observed during these surveys, only the remnants of the calcineing plant appeared to be within the APE. This site is unlikely to be directly impacted by the project.

The architectural reconnaissance of the alternative transmission and pipeline routes described in the supplement to the AFC indicate the new transmission route will cross through the existing New York Landing Historical District, listed as of local and state interest and importance. This district is not expected to be impacted by project construction. Two structures of particular interest within the historic district are the St Peter the Martyr Church and the Black Diamond School. These structures were noted in the survey reports but they are unlikely to be impacted by construction of an underground transmission line (PDEF 1998a; 1998bb; 1998cc).

#### ***NATIVE AMERICAN CONTACTS***

In the spring of 1998 the consultant to the applicant contacted the state's Native American Heritage Commission (NAHC) to request information on traditional cultural properties such as Native American cemeteries and sacred places in the project area (PDEF 1998a; 1998bb). The NAHC maintains a list and maps of traditional resource sites located throughout the state. The Heritage Commission also can refer staff, applicants, consultants, and members of the public to registered Native American representatives who can assess the potential for a specific project to impact Native American sites or values in various parts of the state.

In response to the consultant's request, the NAHC indicated that no known sacred properties were located within the project area, but this information often remains protected. In its response, the NAHC provided a list of Native American contacts of primarily Miwok and Costanoan / Ohlone heritage. A summary of the contacts and a sample of the letter sent to the Native American's is provided in Appendix D of the confidential Cultural Resources Technical Report, (PDEF 1998a; 1998bb). As of

June 1998, no response to the applicant's inquiry had been received from representatives of the Native American community.

## **SUMMARY OF KNOWN RESOURCES WITH THE AREA OF PROJECT EFFECT**

The record search and field surveys of the areas of potential project effect (APEs) indicated the presence of an historic district near the APE, with eight structures of particular interest, and the remnants of an abandoned power plant and limestone calcineing plant within the APE, near the power plant site. There also was anecdotal evidence that a prehistoric stone implement was found many years ago.

## **CATEGORIZATION OF IDENTIFIED RESOURCES**

Various laws apply to the treatment of cultural resources. These laws require the Energy Commission to categorize resources by determining whether they meet several sets of specified criteria. These categories then in turn influence the analysis of impacts to the resources and the mitigation that may be required to ameliorate any such impacts.

Under federal law, only historic or prehistoric sites, objects or features, or architectural resources that are assessed by a qualified researcher as "important" or "significant" in accordance with federal guidelines typically need to be considered during the planning process. The significance of historic and prehistoric cultural resources is judged in accordance with the criteria for eligibility for nomination to the National Register of Historic Places as defined in 36 CFR 60.4 or to the California Register of Historic Resources. If such resources are determined to be significant, and therefore eligible for listing in either of these registers, they are afforded certain protection under the National Historic Preservation Act and/or CEQA. The Advisory Council on Historic Preservation, for example, must be given an opportunity to comment on any federally-funded or permitted undertaking that could adversely affect such resources.

The National Register criteria state that "eligible historic properties" are: districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that (a) are associated with events that have made a significant contribution to the broad patterns of our history; or (b) that are associated with the lives of persons significant in our past; or (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or (d) that represent a significant distinguishable entity whose components may lack individual distinction; or (e) that have yielded or may be likely to yield, information important to history or prehistory. Isolated finds, by definition do not meet these criteria. The state has a similar set of criteria.

Under federal law, resources determined not to be significant, that is, not eligible for National Register listing, are subject to recording and documentation only, and are afforded no further protection. However, occasionally certain resources, although they may not be assessed as "significant", may nonetheless be of local or regional importance such that mitigation may be warranted regardless of their assessed

significance. Staff evaluates any resources known resources located within or adjacent to the project APE to determine whether they meet the eligibility criteria.

The record and literature search and the walking surveys of the proposed project APE were conducted to identify any cultural resources already listed on or potentially eligible for listing on either the National Register of Historic Places (National Register) [36 CFR 800] or the California Register of Historic Resources. The determination of eligibility is made in compliance with the applicable provisions of the National Historic Preservation Act.

In addition, in the time that has elapsed since the first draft of this testimony was prepared, the state Resources Agency has adopted considerable revisions to the regulations implementing California Environmental Quality Act (CEQA). These changes affected the language applicable to the analysis of cultural resources. Previously, the bulk of the information on how to assess resource and impact significance and on the types of mitigation measures available was contained in Appendix K of the CEQA Guidelines. Much of the language of that appendix has now been incorporated into Title 14 Code of California Regulations (CCR), sections 15126.4 and 15064.5.

The CEQA guidelines now explicitly require the lead agency (in this case, the Energy Commission), to make a determination of whether a proposed project will affect "historic resources" and sets forth a listing of criteria for making this determination. As used in CEQA, the term "historic resources" includes any resource, regardless of age, as long as it meets these criteria. If the criteria are met, the Energy Commission must evaluate whether the project will cause a substantial adverse change in the significance of that historic resource, which the regulations define as a significant effect on the environment. The recent CEQA changes also indicate that the mitigation for impacts to historic resources that meet these criteria shall not be subject to the limitations provided in PRC section 21083.2. Using the above criteria, staff has determined that the cultural resource sites described in the AFC and in subsequent filings for the PDEF meet one or more of the criteria for being an historical resource.

Finally, CEQA contains a statute addressing archeological resources. It establishes limitations on analysis and prohibits imposition of mitigation measures for impacts to archeological resources that are not unique (Public Resources Code, section 21083.2). The statute also provides a definition of unique archeological resources. The CEQA Guidelines do, however, state that this prohibition does not apply when an archeological resource also meets the definition of a historical resource (California Code of Regulations, Title 14, section 15064.5). Because staff have determined that the impacts for which it is recommending mitigation do meet the definition of historical resources, the prohibition does not apply to the mitigation discussed in this Staff Assessment.

## IMPACTS

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Since project-related site development and construction usually entail surface and sub-surface disturbance of the ground, the proposed PDEF has the potential to adversely affect previously unknown cultural resources. Impacts to cultural resources may result either directly or indirectly during the pre-construction, construction, and operation of the project. Direct impacts are those which may result from the immediate disturbance of resources, whether from vegetation removal, vehicle travel over the surface, earth-moving activities, or excavation. Indirect impacts are those which may result from increased erosion due to site clearance and preparation, or from inadvertent damage or outright vandalism to exposed resource materials due to improved accessibility. Cumulative impacts to cultural resources may occur if increasing amounts of land are cleared and disturbed for the development of multiple projects in the same vicinity as the proposed project. In most instances, researchers prefer to avoid disturbance of known cultural resource sites and artifacts.

The potential for the project to impact cultural resources is directly related to likelihood that such resources are present and whether they are actually encountered during project development and construction activities. Since numerous cultural resource sites have been recorded in the vicinity of the project site and linear facility routes, there is a possibility that cultural resources may be encountered during project-related excavation.

Often the potential for cultural materials to be found during project construction activities remains uncertain until the ground surface has been broken and excavation of sub-surface soils takes place. When a potential for discovery of cultural resources has been identified through literature search and intensive field surveys, there is a potential that project-related impacts may affect any cultural resources actually present. The potential for discovery does not measure the full significance of individual artifacts or other cultural resources present, since it is impossible to accurately predict what specific materials could be encountered. Often the full significance of recovered cultural resource materials can only be determined after they have been collected, prepared, and studied by professional archaeologists

Not all cultural resources are the same, nor do they offer the same degree of information or insight into past human activities and adaptations to their environment. Professional experience, the literature, and the records of previously discovered cultural resources all provide a means of assessing the relative value of a newly discovered site or a recently unearthed resource. Significant cultural resources are those that meet established scientific criteria that are generally accepted by professional archaeologists, historians, and cultural resource specialists. Generally, a resource is considered to be "historically significant" if the resource meets the following criteria for listing in the California Register of Historic Resources:

- (1) It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- (2) It is associated with the lives of persons important in our past;
- (3) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values;
- (4) It has yielded, or may be likely to yield, information important in prehistory or history [California Code of Regulations, Title 14, Section 15064.5(a)(3)].

## **PROJECT-RELATED IMPACTS**

The determination of potential impacts to cultural resources from the proposed PDEF is required by the Siting Regulations of the California Energy Commission (Energy Commission) and by the California Environmental Quality Act (CEQA). Impacts to cultural resources may occur either directly or indirectly, during pre-construction or construction of the project. The potential for significant project impacts to cultural resources is directly related to the likelihood that such resources are present and whether they are actually encountered during project development activities. A determination of the potential for discovery of cultural resources is based on the results of the literature review and field surveys. Basically, the more cultural resource sites and materials reported in an area, the greater the potential for future discoveries in the vicinity.

Nearly a dozen archaeological sites, features, or objects are known to be located within one-quarter mile of the proposed PDEF site. The literature and records indicate there are eight historic-era buildings or locations located within the 0.25 mile radius of project facilities and there is one previously recorded find of a prehistoric stone implement, found just outside the 0.25 mile radius of the APE. The presence of numerous sites of historic interest and the evidence of human habitation in proximity to the proposed project APE indicates a potential for historic and prehistoric resources to be encountered during project construction.

For this project, the majority of potential impacts to cultural resources would be associated with the construction phase of the project. Since project development and construction usually entail surface and sub-surface disturbance of the ground, the proposed PDEF has the potential to adversely affect known, as well as previously unknown cultural resources. The day to day operation of the HDPP power plant is not expected to have any significant impacts on the region's cultural resources. As a result, staff has proposed mitigation that addresses impacts for both known and unknown resources.

## ***POWER PLANT SITE AND LAYDOWN AREA***

The power plant site and laydown areas will be located on fill materials in a heavily disturbed area within an existing industrialized zone. Site clearance and grading

associated with the power plant site preparation and the excavations and foundation development associated with power plant construction are not expected to impact any known cultural resources materials. The potential for impact to cultural resources will depend on the extent of surface area to be disturbed during site preparation and the depth of excavation into previously undisturbed ground to build project foundations. For the power plant site, the possibility of disturbing cultural resources is considered greatly diminished because this site has been in industrial use for approximately 100 years (PDEF 1998a; 1998bb; 1998cc).

### ***ELECTRIC TRANSMISSION LINE ROUTE(S)***

The AFC indicates that the ground surface along the transmission line corridor has been subject to extensive, ongoing disturbance from industrial, commercial, and residential development. Approximately one mile of Route 10 will be built above ground and approximately one mile will be placed underground. The underground portion of Route 10 will be in the vicinity of the Historic District so it would not indirectly impact any built feature older than 45 years. All 1.2 miles of Route 11 will be above ground (PDEF 1998a).

For the above ground portions of the route, construction of foundations for the transmission line power poles will require drilling or augering the soil to variable depths for each power pole. The depth of soil disturbance will depend on the height and diameter of the individual transmission poles designed for each portion of the route. The width and extent of surface soil disturbance would depend upon the size of equipment needed to set and erect the poles for the above ground portion of the transmission line.

For the underground portions of the transmission routes, trenches of six feet deep would be opened to accommodate electrical cables and cooling fluid lines. Larger and deeper excavations would be required for construction of the concrete access structures to house the pump stations for the transmission and cooling fluids. Transition towers and stations would be constructed at each point where the transmission lines go from above ground to underground, and vice versa.

While no surface evidence of cultural resource materials was observed during the surveys for the transmission line routes, the proximity of the known historic structures in the Historic District and evidence of long time prehistoric habitation of the Pittsburg/Antioch area, in general both indicate a potential for cultural resource materials to be encountered. The depth to undisturbed soils underlying the route is unknown, so the potential for impacts cannot be fully evaluated until the subsurface soils are exposed during augering for power pole foundation footings and examined for evidence of cultural resources. Where not previously disturbed by development, the underlying soils may provide evidence of ancient river or estuary shorelines or signs of previous occupation.

### ***WATER PIPELINE***

The proposed 16" pipeline to supply water to the project would be built under or immediately adjacent to existing paved roads. With the exception of a portion of the route running parallel to Columbia Street and the portion which crosses the open

lands of the USS-POSCO property north of the Pittsburg-Antioch Highway, the pipeline route will be underground. No cultural resources were observed during four previous surveys nor during the pre-AFC survey (PDEF 1998a; 1998bb).

### ***NATURAL GAS PIPELINE***

The 3.6-mile-long gas pipeline will be buried in a trench approximately 2 feet wide and 5 feet deep. Considerable surface disturbance may occur as trenches for this underground pipeline are dug. For boring under ditches and roads, additional work space may be cleared at the points of entry and exit for the equipment. However, since the majority of the length of the pipeline is located on land disturbed by previous development, it is unlikely there would be impacts to cultural resources on or immediately below the surface. However, the potential for impacts to previously unknown cultural resources cannot be fully evaluated until the subsurface is exposed by trenching. Given the evidence of previous human occupation and use of the lands in the project area, the excavation associated with the pipelines to be constructed for this project has a potential to impact cultural resources (PDEF 1998a; 1998bb; 1998cc).

### **CUMULATIVE IMPACTS**

The Energy Commission is reviewing an application for certification for another 880 MW power plant proposed for construction in the City of Pittsburg, approximately 1.5 miles from the proposed PDEF. The Delta Energy Facility (DEF) site is 30 acres in size and the linear facilities would include a 3.3-mile long electric transmission line, a 500-foot long water pipeline, and a 5.3-mile long gas pipeline. The cultural resource literature search and record search for (DEF) found there were 17 previously recorded sites and two isolates were discovered during pre-AFC surveys. (DEF 1999a).

The total area affected by these two power plant projects appears small in comparison to the vastness of the entire bay region and the coastal mountain ranges in Northern California. However, given the extensive modern development throughout this region, any cultural resource materials or undisturbed sites found in the project area can provide valuable information on environmental conditions and human adaptations to earlier, environmental conditions. Proposed developments reaching wider and deeper into the coast range and river delta areas can accelerate the potential for loss of significant cultural resource information. The level of cumulative impact will increase as increasing development opens more undisturbed areas and eventually exposes highly sensitive cultural resource sites.

### **FACILITY CLOSURE IMPACTS**

#### ***PLANNED CLOSURE***

The anticipated lifetime of the PDEF project is expected to be at least twenty-five years. Upgrades or modifications made prior to the facility's closure might extend the life of the plant. Closure would be caused by either (1) a natural or manmade disaster or economic difficulty or (2) A planned, orderly closure that would occur at the end of the plant's useful mechanical life. At the time of closure, all then-

applicable LORS will be identified and the closure plan will address compliance with these LORS.

Generally, if no additional ground disturbance occurs during closure activities and all conditions of certification have been met, no impacts to cultural resources would be expected. However, actual potential impacts are more likely to depend upon the final location of project structures in relation to existing resources, and then upon the procedures used for the removal of project structures. Since the spatial relationship between the closure and removal of project structures and sensitive resources cannot be determined at this time, no final conclusion can be drawn at this time with respect to the impact of permanent facility closure on cultural resources.

### ***UNEXPECTED TEMPORARY CLOSURE***

A temporary unplanned closure would be likely to occur in response to an emergency. No impacts to cultural resources are expected from an unexpected temporary closure.

### ***UNEXPECTED PERMANENT CLOSURE***

If a site were abandoned, impacts to cultural resources would be unlikely because there would be no immediate soil disturbances. Over time, depending on possible soil disturbance, some impacts on cultural resources might result.

## **MITIGATION**

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The literature and the records of known cultural resource sites and isolates indicate there is a possibility for discovery of cultural resources in the areas affected by the project. The records also suggest that cultural resources may be found either on the surface, or they may be uncovered during excavations into the underlying soils. Due to paving or other surface development activities, the surveys of the project areas provided inconclusive information on the possibility that cultural resources are present below the surface. Only one archaeological site was found on the surface during pre-AFC surveys of areas potentially affected by the project construction and operation.

There is a potential for the discovery of sub-surface cultural resource materials in several portions of the project area. Since project development and construction usually entail disturbance of the ground surface, as well as disturbance below the surface, the proposed PDEF project has the potential to adversely affect cultural resources. For cultural resources, the preferred method of mitigation is for project construction to avoid areas where cultural resources are known to exist, wherever possible. Often, however, avoidance cannot be achieved, and other measures such as surface collection, subsurface testing, and data recovery must be implemented.

Mitigation measures are developed to reduce the potential for adverse project impacts on the region's cultural resources to a less than significant level. The proposed mitigation measures are derived from good professional practice and they are based on the US Secretary of Interior guidelines, the Commission staff

recommendations, and incorporate the policies and guidelines of Contra Costa County, the cities of Pittsburg and Antioch. All of these mitigation measures have previously proven successful in protecting sensitive cultural resources from construction-related impacts, while allowing the timely completion of many projects throughout California.

Staff's proposed mitigation measures are conditions of certification that would help ensure that appropriate mitigation measures are implemented if previously unknown cultural resources are encountered during pre-construction site preparation or during project construction. Critical to the success of any mitigation effort is the selection of a qualified professional cultural resources specialist. Staff must review the qualifications and approve of the professional archaeologist designated by the project owner to lead and participate in project monitoring and mitigation efforts.

## **APPLICANT'S PROPOSED MITIGATION**

The AFC indicates that several prehistoric and numerous historic sites have previously been found near the project area and there is a possibility that sub-surface excavation for project construction could encounter additional sub-surface cultural resource materials. Since there is evidence of continuous habitation of prehistoric and historic settlement along the Coast Range foothills and the sloughs in the Pittsburg area, these would be the most likely places to find sub-surface cultural resources. In confidential Appendix K, the applicant states that any initial grading or excavation within 100 feet of any potentially significant resource that may have a subsurface component should be monitored by an archaeologist. If subsurface materials are uncovered, construction work in the immediate vicinity is to be halted and the emergency discovery procedures described below will be implemented (PDEF 1998a; 1998bb; 1998cc).

As set forth in the AFC, the applicant assumes that all the recorded sites that have not been formally evaluated for significance/importance are at a minimum an "important" resource under CEQA, Appendix K or are potentially eligible for listing on the NRHP under 36 CFR 60.4 (d) "potential to yield data important to history or prehistory" (PDEF 1998bb; 1998cc). The AFC also indicates that avoidance, irrespective of potential site significance, is an integral part of the engineering design for PDEF. The applicant has recommended that a six-point cultural resource-monitoring program should be implemented for areas of high sensitivity. The steps in this program are listed here and are more fully represented in the proposed conditions of certification. Basically, the proposed six-point program would include:

- Avoidance
- Physical Demarcation and Protection
- Crew Education
- Archaeological Monitoring
- Native American Monitoring
- Formal Compliance with CEQA Appendix K/Section 106 (PDEF 1998a; 1998bb; 1998cc).

## **LOCAL REQUIRED MITIGATION**

The general plans for Contra Costa County and the City of Pittsburg have several goals and policies specific to the protection and preservation of cultural resources. The City of Antioch adheres to CEQA in the protection of cultural resources. These goals and policies are incorporated into the mitigation measures presented in the proposed conditions of certification.

## **STAFF'S PROPOSED MITIGATION MEASURES**

Staff concurs with the mitigation measures proposed by the applicant in the AFC and with the measures required by local agencies. Staff has suggested additional language to clarify the measures presented by the applicant and the agencies.

## **CONCLUSIONS AND RECOMMENDATIONS**

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### **CONCLUSIONS**

If the conditions of certification proposed by staff are implemented in a timely and proper manner by qualified cultural resource professionals, the project is expected to be in compliance with the applicable LORS, and there should be no significant adverse impacts.

### **RECOMMENDATIONS**

Staff recommends designation of a qualified professional cultural resource specialist to conduct a pre-construction survey of the linear routes after the project owner has identified the final centerlines and rights-of-way. Staff also recommends monitoring for cultural resources throughout the pre-construction and construction periods and the implementation of full mitigation wherever cultural resources are encountered. Monitoring and mitigation by a qualified cultural resource specialist are essential to reduce the potential for project impacts to cultural resources to a less than significant level.

Staff recommends that the Commission adopt the following proposed conditions of certification, which incorporate the mitigation measures discussed above, to ensure adequate mitigation of potential impacts to cultural resources during the construction of the Pittsburg District Energy Facility.

## **(REVISED) PROPOSED CONDITIONS OF CERTIFICATION**

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**CUL-1** Ninety (90) days prior to the start of project construction (defined as any construction-related vegetation clearance, ground disturbance and preparation, and site excavation activities), the project owner shall provide the California Energy Commission (Commission) Compliance Project Manager (CPM) with the name(s) and resume(s) for its designated cultural resource specialist and any other team members who would be assisting the specialist in project monitoring and mitigation.

**Protocol:** 1) The resume for the designated cultural resource specialist shall include all information needed to demonstrate that the specialist meets the minimum qualifications specified in the US Secretary of Interior Guidelines, as published by the State Office of Historic Preservation (1983). The Commission staff expects that these minimum qualifications would include the following: a graduate degree in anthropology, archaeology, California history, cultural resource management, or other comparable fields; at least three years of archaeological resource mitigation and field experience in California; and at least one year's experience in each of the following areas: leading archaeological resource field surveys; leading site and artifact mapping, recording, and recovery operations; marshalling and use of equipment necessary for cultural resource recovery and testing; preparing recovered materials for analysis and identification; determining the need for appropriate sampling and/or testing in the field and in the lab; directing the analyses of mapped and recovered artifacts; completing the identification and inventory of recovered cultural resource materials; and the preparation of appropriate reports to be filed with the receiving curation repository, the SHPO, all appropriate regional archaeological information center(s), and the CPM.

2) The resume for the designated cultural resource specialist shall include a list of specific projects the specialist has previously worked on; the role and responsibilities of the specialist for each project listed; and the names and phone numbers of contacts familiar with the specialist's work on these referenced projects.

**Verification:** At least ninety (90) days prior to the start of construction on the project, the project owner shall submit the names and resumes for its designated cultural resource specialist and the specialist's team members, to the CPM for review and written approval.

At least ten (10) days prior to the termination or release of a designated cultural resource specialist, the project owner shall obtain CPM approval of the replacement specialist by submitting to the CPM the name and resume of the proposed new designated cultural resource specialist. Should emergency replacement of the designated specialist become necessary, the project owner shall immediately notify the CPM to discuss the qualifications of its proposed replacement specialist.

**CUL-2** Project construction shall not begin until the designated cultural resources specialist approved by the Commission CPM is available to be on site. The designated cultural resources specialist shall be responsible for the implementation all the Conditions of Certification and for using qualified personnel to assist him or her in project-related activities. The designated specialist, with assistance from qualified team members as needed, shall conduct the following activities:

- any final pre-construction surveys, flagging of areas to be avoided, and identification of areas where shovel testing, test pits, or backhoe trenching need to be done;

- preparation and implementation of the Cultural Resource Monitoring and Mitigation Plan;
- preparation and presentation of the pre-construction employee awareness training program;
- maintenance of a daily log of cultural resource monitoring and mitigation activities and preparation of a summary of these activities to be included in the weekly construction status report filed with the CPM;
- direction and implementation of monitoring and mitigation procedures, as needed in sensitive resource areas, during any construction activities associated with all aspects of the project;
- implementation of measures to map, record, sample, and collect sensitive and diagnostic cultural resources;
- preparation and analyses of all data and cultural materials recovered during project monitoring and mitigation;
- identification and inventory of recovered cultural resources;
- preparation of recovered cultural resources for curation in a qualified public repository;

Protocol:

- delivery of recovered cultural materials to the curation institution; and
- preparation of the preliminary and final cultural resource reports to be filed with the receiving curation repository, appropriate regional information center(s), the SHPO, and the CPM.

**Verification:** At least ten days (10) prior to the start of construction, the project owner shall confirm to the CPM that the approved designated cultural resource specialist is available and prepared to implement the cultural resource Conditions of Certification at the start of construction.

**CUL-3** Prior to the start of project construction, the project owner shall provide the designated cultural resource specialist and the CPM with maps and drawings showing the final project design and site layout, and the final alignment of all linear facilities. The routes for the linear facilities shall be provided on 7.5 minute quad maps, showing post mile markers (including “tic marks” for tenths of a mile), final center lines and right-of-way boundaries, and the location of all the various areas where surface disturbance may be associated with project-related access roads, storage yards, laydown sites,

pull sites, pump or pressure stations, switchyards, electrical tower or pole footings, and any other project components.

Protocol: The designated cultural resource specialist may request, and the project owner shall provide, enlargements of portions of the 7.5 minute maps presented as a sequence of strip maps for the linear facility routes. The strip maps would include post mile and tenth of a mile markers and show the detailed locations of proposed access roads, storage or laydown sites, tower or pole footings, and any other areas of disturbance associated with the construction and maintenance of project-related linear facilities. The project owner shall also provide copies of any such enlargements to the CPM at the same time as they are provided to the specialist.

**Verification:** At least seventy-five (75) days prior to the start of construction on the project, the project owner shall provide the designated cultural resource specialist and the CPM with final drawings and site layouts for all project facilities and maps at appropriate scale(s) for all areas potentially affected by project construction. If the designated cultural resource specialist requests enlargements or strip maps for linear facility routes, the project owner shall also provide a set of these maps to the CPM at the same time as they are provided to the specialist.

**CUL-4** Prior to the start of project construction, the designated cultural resources specialist shall prepare and submit to the CPM for review and written approval, a draft Cultural Resource Monitoring and Mitigation Plan to identify general and specific measures to minimize potential impacts to sensitive cultural resources. After the project owner receives written CPM approval of the plan, the project owner shall make the designated cultural resource specialist and designated cultural resource team available to implement the Monitoring and Mitigation Plan, as needed throughout project construction.

Protocol: The Cultural Resources Monitoring and Mitigation Plan shall include, but not be limited to, the following elements and measures:

- a. A proposed research design that includes a discussion of questions that may be answered by the mapping, data and artifact recovery conducted during monitoring and mitigation activities, and by the post-construction analysis of recovered data and materials
- b. A discussion of the implementation sequence and the estimated time frames needed to accomplish all project-related tasks during the pre-construction, construction, and post-construction analysis phases of the project.

Protocol: c. A discussion of the mitigation team leadership and organizational structure, and the inter-relationship of team roles and responsibilities associated with completion of the tasks identified in (b), above.

Protocol: d. A discussion of the need for Native American observers or monitors, the procedures to be used to select them, the areas or post-mile sections where they will be needed, and their role and responsibilities.

Protocol:

Protocol: e. A discussion of 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.

Protocol:

Protocol: f. A discussion of where monitoring of project construction activities is deemed necessary by the designated cultural resource specialist. The specialist will determine the size or extent of the areas where monitoring is to occur and will establish a schedule for the monitor(s) to be present. If the designated specialist determines that the likelihood of encountering cultural resources in certain areas is slight, the specialist may discontinue monitoring in that location.

Protocol:

g. A description of a set of reporting procedures, prepared in concert with the project owner, to be used by all project personnel to notify the designated cultural resource specialist of any unexpected finds of cultural resources during construction-related activities.

Protocol:

Protocol: h. A description of the work curtailment procedures, prepared in concert with the project owner, to be followed if cultural resources are unexpectedly discovered during project construction.

Protocol: i. A discussion of the project-specific mitigation measure that the designated cultural resource specialist shall be present to monitor construction-related grading, excavation, trenching, and/or augering that might affect known site CA-CCO-715H. The monitoring shall extend to all areas where there is no imported fill present or where construction activity will extend below the depth of any known fill.

Protocol: j. A discussion of the project-specific mitigation measure that the designated cultural resource specialist shall ensure that the excavation spoils and exposed sidewalls of the trenches for the reclaimed water pipeline and the fuel gas pipeline will be monitored intermittently for evidence of sub-surface cultural resources.

Protocol:

Protocol: k. A discussion of the requirement that all cultural resources encountered will be recorded and mapped (may include photos) and all significant or diagnostic resources will be collected for analysis and eventual curation into a retrievable storage collection in a public repository or museum that meets the US Secretary of Interior standards and requirements for the curation of cultural resources.

Protocol:

Protocol: l. 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.

Protocol:

Protocol: m. Identification of the public institution that has agreed to receive any data and cultural resources recovered during project-related monitoring and mitigation work. Discussion of any requirements, specifications, or funding needed for the materials to be delivered for curation and how they will be met. Also include the name and phone number of the contact person at the institution.

**Verification:** At least forty-five (45) days prior to the start of construction on the project, the project owner shall provide the draft Cultural Resources Monitoring and Mitigation Plan prepared by the designated cultural resource specialist, to the CPM for review and written approval. If the CPM does not approve the draft plan, the project owner, the designated cultural resources specialist, and the CPM shall meet to discuss comments and work out necessary changes.

**CUL-5** Prior to the start of project construction, the designated cultural resources specialist shall prepare an employee training program. The project owner shall submit the cultural resources training program to the CPM for review and written approval.

Protocol: The training program will discuss the potential to encounter cultural resources in the field, the sensitivity and importance of these resources, and the legal obligations to preserve and protect such resources.

Protocol: The training program shall also include the set of reporting procedures and work curtailment procedures that workers are to follow if previously unknown cultural resources are encountered during project activities. The training program will be presented by the designated cultural resource specialist and may be combined with other training programs prepared for biological resources, hazardous materials, or any other areas of interest or concern.

**Verification:** At least forty-five (45) days prior to the start of construction on the project, the project owner shall submit to the CPM (or designee) for review, comment, and written approval, the proposed employee training program, the set of reporting procedures, and the work curtailment procedures that the workers are to follow if previously unknown cultural resources are encountered during construction.

The CPM shall provide the project owner with written approval or disapproval of the employee training program, the set of reporting procedures, and the work curtailment procedures. If the CPM does not approve the draft employee training program, the project owner, the designated cultural resources specialist, and the CPM shall meet to discuss comments and work out necessary changes.

**CUL-6** Prior to the start of construction and throughout the project construction period as needed for all new employees, the project owner and the designated cultural resource specialist shall provide the CPM-approved training to all project managers, construction supervisors, and workers. The project owner and construction manager shall provide the workers with the CPM-approved set of procedures for reporting any sensitive resources that may be discovered during project-related ground disturbance.

**Verification:** Prior to the start of construction and throughout the project construction period as needed for all new employees, the project owner and the designated cultural resources specialist shall present the CPM-approved training program on the potential for project impacts to sensitive cultural resources. The training shall include a set of reporting procedures for cultural resources encountered during project activities. The project owner shall provide documentation to the CPM that the employee training and the set of procedures have been provided to all project managers, construction supervisors, and all workers.

**Protocol:** **CUL-7** The designated cultural resource specialist shall have the authority to halt or redirect construction if previously unknown cultural resource sites or materials are encountered during project-related grading, augering, excavation and/or trenching. The halting or redirection of construction shall remain in effect until the designated cultural resources specialist has notified the CPM of the find and the work stoppage, and until any necessary data recovery and mitigation has been completed. After construction is halted or redirected, the designated cultural resources specialist shall act in accordance with the following procedures:

- The designated cultural resources specialist, representatives of the project owner, and the CPM shall confer within five working days of the notification of the CPM to determine what, if any, data recovery or other mitigation is needed.
- If data recovery or other mitigation measures are required, the designated cultural resource specialist and team members shall monitor construction activities and implement data recovery and mitigation measures, as needed
- All necessary and required data recovery and mitigation shall be completed as expeditiously as possible after discovery of any previously unknown cultural resources, unless additional time is agreed to by all parties.

**CUL-8** Throughout the project construction period, the project owner shall provide the designated cultural resource specialist and the CPM with a current schedule of anticipated monthly project activity (presented on a week-by-week basis) and a map indicating the area(s) where construction activities will occur. The designated cultural resources specialist shall consult daily with the project superintendent or construction field manager to confirm the area(s) to be worked on the next day(s).

**Verification:** The project owner shall provide the designated cultural resource specialist and the CPM with a week-by-week schedule of the upcoming construction activities, one month in advance, as well as maps showing where the construction activity is scheduled to take place. These advance schedules are to be provided to the CPM with the Monthly Compliance Report.

**CUL-9** Throughout the pre-construction reconnaissance surveys and the construction monitoring and mitigation phases of the project, the designated cultural resources specialist shall keep a daily log of any resource finds and the progress or status of the resource monitoring, mitigation, preparation, identification, and analytical work being conducted for the project. The designated specialist shall prepare a weekly summary report on the progress or status of cultural resource-related activities. The weekly summary reports are to be filed with the project owner for inclusion in the Monthly Compliance Report to the CPM. The designated resource specialist may informally discuss the cultural resource monitoring and mitigation activities with Commission technical staff.

**Verification:** Throughout the project construction period, the project owner shall include in the Monthly Compliance Reports to the CPM, copies of the weekly summary reports prepared by the designated cultural resource specialist on the progress or status of cultural resource monitoring and mitigation activities.

**CUL-10** The designated cultural resource specialist shall be present at all times to monitor construction-related grading, excavation, trenching, and/or augering in the vicinity of previously recorded archaeological sites and in areas where cultural resources have been identified during project construction.

**Protocol:** If the designated cultural resource specialist determines that full-time monitoring is not necessary in certain portions of the project area or along portions of the linear facility routes, the designated specialist shall notify the project owner of the changes. The designated cultural resource specialist shall use mile post markers and boundary stakes placed by the project owner to identify areas where monitoring is being reduced or is no longer deemed necessary.

**Protocol:** The daily logs prepared by the designated cultural resource specialist shall indicate by tenths of a post mile, where and when monitoring has taken place and where monitoring has been deemed unnecessary.

**Verification:** The project owner shall include in the Monthly Compliance Reports to the CPM, copies of the weekly summary reports prepared by the designated cultural resource specialist on project-related cultural resource activities.

**CUL-11** The project owner shall ensure the recovery, preparation for analysis, analysis, and preparation for curation of all cultural resource materials encountered and collected during pre-construction surveys and during the monitoring, data recovery, mapping, and mitigation activities related to the project.

**Verification:** The project owner shall maintain in its compliance files, copies of signed contracts or agreements with the museum(s), university(ies), or other appropriate research specialists which will ensure the necessary recovery, preparation for analysis, and analysis of cultural resource materials collected during data recovery and mitigation for the project. The project owner shall keep these files available for periodic audit by the CPM.

**CUL-12** The project owner shall ensure preparation of a Preliminary Cultural Resource Report following completion of data recovery and site mitigation work. The preliminary report is to be prepared by the designated cultural resource specialist and the project owner shall submit the preliminary report to the CPM for review, comment, and written approval.

**Protocol:** The preliminary report shall include (but not be limited to) preliminary information on the survey report(s), methodology, and recommendations; site records and maps; determinations of sensitivity and significance; data recovery and other mitigation activities; discussion of possible results and findings of any analysis to be conducted on recovered cultural resource materials and data; proposed research questions which may be answered or raised by the data recovered from the project; and an estimate of the time needed to complete the analysis of recovered cultural resource materials and prepare a final report.

**Protocol:** If no cultural resource materials were recovered during project construction, the CPM-approved Preliminary Cultural Resource Report shall also serve as the final report and shall be filed with appropriate entities, as described in conditions CUL-13 and CUL-14, below.

**Verification:** The designated cultural resources specialist shall prepare a preliminary report on the cultural resource monitoring and mitigation activities conducted for the project. The report shall be prepared within ninety (90) days following completion of the data recovery and site mitigation work. Within seven (7) day after completion of the report, the project owner shall submit a copy of the Preliminary Cultural Resource Report to the CPM for review, comment, and written approval.

**CUL-13** The project owner shall ensure the preparation of a Final Cultural Resource Report by the designated cultural resources specialist, if significant or diagnostic cultural resources are found. The Final Cultural Resource Report shall be completed within ninety (90) days following completion of the analysis of the recovered cultural materials and related information.

**Protocol:** The Final Cultural Resource Report shall include (but not be limited to) the survey report(s), methodology, and recommendations; site records and maps; description and inventory list of recovered cultural materials; determinations of significance and potential eligibility; data recovery and other mitigation activities; results and findings of any special analyses conducted on recovered cultural resource materials; research questions answered or raised by the data from the project; and the name and location of the public institution receiving the recovered cultural resources for curation.

**Verification:** The Final Cultural Resource Report shall be prepared by the designated cultural resources specialist for the project, within ninety (90) days following completion of the analysis of the recovered cultural materials and preparation of related text, maps, tables, charts, photos, etc. Within seven (7) days after completion of the report, the project owner shall submit a copy of the Final Cultural Resources Report to the CPM for review and approval.

**CUL-14** The project owner shall submit an original, or an original-quality copy of the CPM-approved Final Cultural Resource Report to the public institution receiving the recovered data and materials for curation, to the SHPO, and to the appropriate regional archaeological information center(s). A legible copy of the approved final report shall be filed with the Commission CPM, with a request for confidentiality, if needed to protect any sensitive resources or sites.

**Protocol:** The copies of the Final Cultural Resource Report to be sent to the curating institution, the SHPO, and the regional information center(s) shall include the following (as applicable to the project findings set forth in the final report): clean and reproducible original copies of all text; originals of any topographic maps showing site and resource locations; original or clear copies of drawings of significant or diagnostic cultural resource materials found during pre-construction surveys, during project-related monitoring, data recovery, and mitigation; and photographs of the site(s) and the various cultural resource materials recovered during project monitoring and mitigation and subjected to post-recovery analysis and evaluation. The project owner shall provide the curating institution with a set of negatives for all of these photographs.

**Verification:** The project owner shall maintain in its compliance files, copies of all documentation related to the filing of the original materials and the Commission-approved Final Cultural Resources Report with the public institution receiving the recovered data and materials for curation, the SHPO, and the appropriate archaeological information center(s). If no significant cultural resources were recovered, then the preliminary report shall serve as the final report and copies of the preliminary report shall be filed with these same agencies.

**CUL-15** Following the filing of the CPM-approved Final Cultural Resource Report with the appropriate entities, the project owner shall deliver for curation all cultural resource materials, maps and data collected during data recovery

and mitigation for the project. The materials shall be delivered for curation into a public repository that meets the US Secretary of Interior requirements for the curation of cultural resources.

**Verification:** All recovered cultural resource materials shall be delivered for curation within thirty (30) days following the filing of the CPM-approved Final Cultural Resource Report. The project owner shall maintain in its project history or compliance files, copies of signed contracts or agreements with the museum(s), university(ies), or other appropriate public repository(ies) to which the project owner has delivered for curation all cultural resource materials collected during data recovery and mitigation for the project.

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# **SOCIOECONOMIC RESOURCES**

Testimony Errata for Amanda Stennick

## **INTRODUCTION**

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Staff's original testimony on Socioeconomic Resources was filed on March 10, 1999. Subsequent to that testimony, staff received comments from the City of Antioch seeking clarification in staff's testimony regarding the alliance agreement between the City of Pittsburg and the applicant and additional information about revenue allocations.

## **CORRECTIONS/CHANGES**

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Page 309, Insert the following paragraph prior to "State Enterprise Zones": "At this time, the State Board of Equalization has not determined whether they will amend the proposed Phase 2 to include among other issues, a restructuring of revenue apportionment in counties where energy facilities are sited. Also, staff does not have any information from the State Board of Equalization on specific formulas used to calculate property taxes using unitary valuation and the valuation provisions of Proposition 13. Therefore, staff does not know the extent that revenues may differ from state-assessed power plants and those that are assessed locally."

Page 310, first paragraph, insert the following after the second sentence: "Because the City of Antioch is not part of the Alliance and Development Agreement, the city will not receive any revenues from profits associated with the PDEF."

Page 311, SOCIO-2: add "...for the Pittsburg Unified School District and the Contra Costa Fire Department,..." after "...statutory development fees..."

Add Appendix A: "Alliance and Development Agreement"

## **SOCIOECONOMICS APPENDIX A**

### Alliance and Development Agreement

# BIOLICIAL RESOURCES

Testimony Errata for Marc Sazaki

## INTRODUCTION

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Staff's original testimony on Biological Resources was filed on March 10, 1999. Subsequent to that testimony, the applicant provided comments on March 23, 1999, at a public workshop in Pittsburg. This errata reflects Energy Commission staff's response to those comments, as well as other corrections or changes.

## CORRECTIONS/CHANGES

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Page 323, Item 11 under MITIGATION: Insert "...Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996,..." after the word "titled" on the second line.

Page 324, Specific Mitigation Measure 3: Insert "...at the end of the construction day..." at the end of that sentence.

Page 325, under COMPLIANCE WITH LORS: change "...10a..." to "...10A...".

Page 329, bullet number 9: Delete "... except for those required for aviation warning..." and in its place, insert "...allowing for appropriate safety and security standards including aviation warning...".

Page 330, bullet number 3, third line: Insert after the word "...them...", "...at the end of each construction day..." at the end of that sentence.

Page 331, at the end of the carry-over paragraph at the top of the page, insert this sentence: "If no significant bird mortalities are documented within a 3-year period, the bird monitoring program may be ended with concurrence of the CPM."



# SOIL & WATER RESOURCES

Supplemental Testimony of Joseph O'Hagan

## INTRODUCTION

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Staff's original Soil & Water Resources assessment was released on March 10, 1999. In that testimony staff concluded that the proposed PDEF will not contribute to any significant project specific impacts to soil and water resources, but staff was still evaluating cumulative impacts to water quality. This supplemental testimony augments staff's original testimony in regards to cumulative water quality impacts, but does not provide a conclusion regarding the proposed project's contribution to such an impact. In addition, this supplemental testimony provides an additional condition of certification to address certain concerns raised by the City of Antioch regarding use of potable water supplies.

There are several reasons why staff has not completed the cumulative impact analysis for the proposed PDEF. Most important among these reasons is that the scope of the cumulative impact analysis considered by staff originally did not anticipate evaluating modeling of the estimated dispersion of wastewater discharges from the Delta-Diablo Wastewater Treatment Facility (DDWTF) and the proposed Delta Energy Center (DEC). Staff felt that the proper forum for this analysis was in the DEC proceeding. Concerns raised just recently by the City of Antioch, however, dictate that this issue is addressed during the PDEF process. The applicant did not address cumulative impacts in the original AFC beyond effects on wastewater treatment plant capacity and therefore has provided no analysis on this subject.

The original staff assessment indicated that staff was awaiting additional information from the Delta Diablo Sanitation District (DDSD) regarding the renewal of the wastewater treatment plant National Pollutant Discharge Elimination System (NPDES) Permit and from Calpine Corporation regarding the new NPDES Permit for the DEC Project. Both the Sanitation District and Calpine have been supportive of staff efforts and have provided information to staff. The district is still developing information for their NPDES permit renewal application. The Sanitation District expects this work will be done shortly and the application will be filed with the Regional Board by the end of April 1999. Calpine has provided staff a copy of the draft NPDES permit that will be submitted to the San Francisco Regional Water Quality Control Board. At this time, Calpine informed staff that they were considering the use of an existing, inactive Dow Chemical outfall or using the DDWTF outfall. Information contained within the draft NPDES permit application includes estimated discharge concentrations, dispersion modeling and toxicity analysis. This information will be discussed further below.

The City of Antioch has expressed significant concern about the potential impacts from the higher concentrations within the DDWTF outfall do to providing effluent to the two power plants, combined with the wastewater discharge from the DEC project. Staff is attempting to verify the information contained in the DEC NPDES

Permit application. Since these efforts are not complete, staff is not able to recommend approval of the proposed project.

The City of Antioch also expressed concern about the use of alternative water sources for the project. Specifically, they are concerned that the project will operate on potable water supplies, potentially impacting the Cities of Pittsburg and Antioch. Therefore, staff is proposing a condition of certification that requires the applicant to obtain Energy Commission approval for the use of back-up water supplies for more than two weeks at any one time.

## CUMULATIVE IMPACTS

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As discussed in the March 10, 1999 staff assessment, PDEF will utilize approximately 3.4 mgd of tertiary treated effluent under average operating conditions from the DDWTF. Although this effluent will be used both for the cooling and steam cycles of the facility, the majority of the flow will be used in the cooling cycle where a significant portion is lost to evaporation. During the evaporation process, water is lost but the conservative inorganic constituents, such as copper or nickel are retained in the remaining cooling tower blowdown. Essentially no metals are assumed to be lost during evaporation. The cooling tower blowdown, combined with other wastewater flows is discharged back to the wastewater treatment facility by a dedicated pipeline. Since effluent will be cycled through the cooling towers three times, inorganic concentrations will increase accordingly. **SOIL & WATER RESOURCES Table 1** in the Staff Assessment shows estimated wastewater discharge concentrations. Average wastewater discharge from the power plant to the DDWTF is 0.97 mgd.

The proposed DEC will also use effluent from the DDWTF. On average, DEC will require approximately 5.3 mgd. Unlike PDEF, however, DEC will only use the effluent for the cooling cycle. Although DEC will cycle the effluent through the cooling process five times, it was stated in the AFC that due to other wastewater streams that will be combined in the discharge, the resulting concentration is only 3.5 times as much as the initial effluent levels. In the AFC (Calpine 1998), the water mass balance indicates that wastewater discharge to the outfall under average operating conditions is 810 gpm or approximately 1.2 mgd. In the draft NPDES permit application, discharge flow under operating conditions is identified as 2.1 mgd. The DEC wastewater discharge, however, will not be returned to the wastewater treatment facility but will be routed directly to the wastewater treatment facility's outfall or to an existing, but currently unused outfall on the Dow Chemical property.

The average demand for tertiary treated effluent (approximately 8.7 mgd) by the two power plant project represents approximately 66 percent of the treatment plant's existing flow. In the Staff Assessment, existing flows at the wastewater treatment facility were estimated to be 12.5 mgd. Average flows at the wastewater treatment plant during 1998, however, were 13.2 mgd and this number is now used (Baatrup 1999). Given the likely increase in wastewater discharges to the wastewater

treatment facility before the two proposed projects are operating, staff used a total effluent flow of 13.5 mgd.

Based upon these project designs, therefore, approximately 8.7 mgd of a total effluent flow of 13.5 mgd at the wastewater treatment plant will be diverted to the two power plants. To determine the effect of this diversion and the return of the concentrated wastewater from the two power plants to the wastewater treatment facility or to the treatment plant's outfall, a mass balance analysis was performed. The results of this analysis are shown in **SOIL & WATER RESOURCES Supplemental Table 1**. Assumptions used in this mass balance analysis are discussed below.

New York Slough, the receiving water for the DDWTF and DEC discharges is considered a portion of Suisun Bay. Copper, mercury, nickel and selenium have been identified by the San Francisco Regional Water Quality Control Board and chromium by DEC as potentially impairing Suisun Bay. Therefore, staff used these five metals to analyze the two power plants' potential effect on DDSD complying with its existing NPDES permit limitations. As discussed in the March 10 Staff Assessment, DDSD's permit expired in November of 1998 and has been administratively extended by the Regional Board until a new permit can be issued. DDSD anticipates that a revised permit renewal application that reflects providing effluent to the two power plants will be submitted in late April (Baatrup 1999).

In evaluating DDWTF effluent monitoring data for 1996, 1997 and 1998, significant variability in concentration levels for the five metals is noted. Therefore, instead of using the geometric mean, effluent concentrations were characterized by the 95 percentile.

To balance inflow and discharge figures for PDEF, staff assumes that 1.1 mgd of wastewater from the power plant will be returned to the wastewater treatment plant. This discharge is returned to the front of the wastewater treatment facility and combined with the estimated inflow of 13.5 mgd from other sources. If DEC is not taken into account, staff assumes that the facility would discharge approximately 11.23 mgd into New York Slough. As shown in **SOIL & WATER RESOURCES Supplemental Table 1**, providing effluent to and receiving wastewater from PDEF would not cause the district to exceed their existing NPDES permit for the five constituents analyzed.

As noted above, 5.3 mgd of effluent will be diverted to DEC. After cycling through the cooling process five times, approximately 1.5 mgd of wastewater will be routed directly to the DDWTF's outfall, if this option is chosen. DEC has indicated that the concentration of this wastewater flow will only be 3.5 times the concentration in the source effluent. This is due to the fact that the quality of other wastewater streams that will be combined with the cooling tower blowdown is such that the concentration will increase only by a factor of 3.5. Staff has not been able to evaluate DEC's proposal to use the Dow Chemical outfall. From the perspective of DDSD's compliance with NPDES permit limitations, using the DDWTF's outfall provides the most conservative analysis.

**SOIL & WATER RESOURCES Supplemental Table 1  
Delta Diablo Sanitation District Mass Balance Analysis**

DDWTF Effluent Flow 13.5 mgd		PDEF Only		PDEF and DEC
Metal	DDWTF's Current Daily Average Effluent Limitations with 10:1 Dilution Credit (ug/L)	DDWTF's 1996-1998 Effluent Concentration 95th Percentile (ug/L)	Total Daily Discharge to New York Slough Daily of 11.23 mgd from DDWTF after PDEF Returns (ug/L)	Total Daily Discharge to New York Slough of 7.45 mgd from DEC and DDWTF after PDEF Returns (ug/L)
Copper	78	22.35	26.86	40.51
Mercury	24	1.08	1.3	1.96
Nickel	71	9.25	11.12	16.77
Selenium	50	5.4	6.49	9.79
Chromium	110	10.5	12.62	19.03

Therefore, assuming discharge of the DEC wastewater at the DDWTF outfall, the combined discharge into New York Slough will be 7.45 mgd. As shown in the above table, the combined discharges will not exceed DDSD's existing NPDES permit limitation. As noted above, DDSD is in the process of renewing its permit. Although the proposed projects will not cause DDSD to exceed the existing limitations, the new permit limitations could be more severe. The San Francisco Regional Water Quality Control Board has indicated in the 1995 Basin Plan that some of the criteria contained in the plan may not protect ambient water quality. Furthermore, the U.S. Environmental Protection Agency is proposing the California Toxics Rule which could cause permit limitations to also be revised downward. Staff does not want to speculate what the new discharge limitations will be for DDSD. Generally, processing NPDES permits takes about six months; it is likely that the DDSD permit will take substantially longer (Baatrup 1999). A further consideration is that DDSD, in dealing with revised permit limitations, has a large number of options in meeting the new standards. For example, if necessary, DDSD can revise pretreatment standards for PDEF and other industrial dischargers to the wastewater treatment plant or treat effluent prior to discharge to New York Slough.

As noted in the introduction, the City of Antioch has raised concerns that the combined discharges will result in an effluent plume that, under certain conditions could move upstream and adversely effect the city's water intake and supply. Also as noted, DEC will be submitting an NPDES application to the Regional Water Quality Control Board. This permit application contains extensive dispersion modeling to evaluate the potential for such an impact. This information has only just become available to staff. Staff will attempt to provide an independent evaluation of this information for the PDEF proceedings. However, since this evaluation is not yet complete, staff is not able to recommend approval of the proposed PDEF.

## CONDITIONS OF CERTIFICATION

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**Soil&Water-5:** The project owner shall operate the project using only tertiary treated effluent for cooling and steam cycle processes. Backup water from the City of Pittsburg should only be used for these processes when there is an interruption in the delivery of tertiary treated effluent. Operation of the facility on the backup water supply longer than three consecutive days requires notification of the Energy Commission CPM. Operation of the facility on backup water shall not continue for more than two weeks without Energy Commission approval.

**Verification:** The project owner shall notify the Energy Commission CPM by phone and in writing if the backup water supply is used for more than three consecutive days. Notification should explain the cause of the interruption and the anticipated time when tertiary treated effluent is again available.



# FACILITY DESIGN

Errata to the Testimony of Steve Baker, Kisabuli, Bob Anderson and Al McCuen

## CORRECTIONS/CHANGES

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Page 375, under the section entitled “Seismically Induced Strong Ground Shaking,” second sentence, change “linear elements” to “linear facilities,” and change “10 kilometers” to “8.5 kilometers.”

Page 375, under the section entitled “Surface Faulting,” line five, following the word “Hills,” capitalize the word “fault.”

Pages 379 through 397, replace the section entitled “CONDITIONS OF CERTIFICATION” in its entirety with the following. (Note: this replacement accomplishes three changes:

1. restores formatting that was missing from all the Conditions of Certification in the published version of the Staff Assessment;
2. adds five items of major structures and equipment to the lists in GEN-2; and
3. revises the condition portion of GEN-7.)

## CONDITIONS OF CERTIFICATION

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**GEN-1** The project owner shall design, construct and inspect the project in accordance with the California Building Code (CBC)<sup>1</sup> and all other applicable LORS in effect at the time initial design plans are submitted to the CBO for review and approval. The CBC in effect is that edition that has been adopted by the California Building Standards Commission, and published at least 180 days previously.

In the event that the PDEF is designed to a successor edition to the 1998 CBC, the 1998 CBC provisions identified herein shall be replaced with the applicable successor provisions. Where, in any specific case, different sections of the code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.

**Verification:** Within 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) after receipt of the Certificate of Occupancy, the project owner shall submit to the CPM a statement of verification, signed by the

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<sup>1</sup>All the Sections, Chapters, Appendices and Tables, unless otherwise stated, refer to Sections, Chapters, Appendices and Tables of the 1998 California Building Code (CBC).

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 for facility design. The project owner shall provide the CPM a copy of the Certificate of Occupancy within 30 days of receipt from the CBO [1998 CBC, Section 109 – Certificate of Occupancy.]

**GEN-2** The project owner shall furnish to the Energy Commission 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 description and list of proposed submittal packages for design, calculations, and specifications for major structures and equipment (see a list of major structures and equipment below). To facilitate audits by Energy Commission staff, the project owner shall provide designated packages to the CPM when requested.

### **Major Structures**

- Combustion Turbine Generator (CTG) Pedestal and Foundation
- Steam Turbine Generator (STG) Pedestal and Foundation
- CTG Enclosure Structure
- STG Enclosure Structure
- Air Inlet Filtration with Evaporative Cooler Structure (as applicable)
- Cooling Tower
- Heat Recovery Steam Generator (HRSG) Structure and Foundation
- Exhaust Stack and Foundation
- Field-Fabricated Tanks and Foundations
- Shop-Fabricated Tanks and Foundations
- Condenser Support Structure and Foundations
- Equipment Foundations (compressors, pumps, transformers)
- Switchyard
- Control/Administration Building
- Pipe Rack Structures
- Transformer\_Dead End Structure
- Main Transformer Foundations
- Transmission Tower Structure and Foundations
- Boiler Feed Pump Foundations
- Electrical Control Building

### **Major Equipment**

- CTG
- STG
- Fired HRSG
- Shop-Fabricated Pressure Vessels
- STG Condenser
- Main Step-up Transformers
- Boiler Feed Pumps
- Condensate Pumps
- Switchgear
- Cycle Waste Chemical Storage

## Circulating Water Pumps

**Verification:** At least 60 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of rough grading, the project owner shall submit the schedule, a Master Drawing List, and a Master Specifications List to the CBO and to the CPM. The project owner shall provide schedule updates in the Monthly Compliance Report.

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

**Verification:** The project owner shall make the required payments to the CBO at the time of submittal of the plans, design calculations, specifications, or soil reports. The project owner shall send a copy of the CBO's receipt of payment to the CPM in the next Monthly Compliance Report indicating that the applicable fee has 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 of Regs., Tit. 24, § 4-209 – Designation of Responsibilities).]

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

**Protocol:** The RE shall:

1. monitor construction progress to ensure compliance with LORS;
2. ensure that construction of all the facilities conforms in every material respect to the applicable LORS, these conditions of certification, approved plans, and specifications;
3. prepare documents to initiate changes in the approved drawings and specifications when directed by the project owner or as required by conditions on the project;

4. be responsible for providing the project inspectors and testing agency(ies) with complete and up-to-date set(s) of stamped drawings, plans, specifications and any other required documents;
5. be responsible for the timely submittal of construction progress reports to the CBO from the project inspectors, the contractor, and other engineers who have been delegated responsibility for portions of the project; and
6. be responsible for notifying the CBO of corrective action or the disposition of items noted on laboratory reports or other tests as not conforming to the approved plans and specifications.

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

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

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

**GEN-5** Prior to the start of rough grading, the project owner shall assign at least one of each of the following California registered engineers to the project: A) a civil engineer; B) a geotechnical engineer or a civil engineer experienced and knowledgeable in the practice of soils engineering; C) a design engineer who is either a structural engineer or a civil engineer who is 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 Section 6730 and 6736. Requires state registration to practice as a civil engineer or structural engineer in California.]

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

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

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

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

Protocol: A: The civil engineer shall:

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

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

1. review all the engineering geology reports, and prepare final soils grading report;
2. prepare the soils engineering reports required by the 1998 CBC, Appendix Chapter 33, Section 3309.5 – Soils Engineering Report, and Section 3309.6 – Engineering Geology Report;
3. be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the 1998 CBC, Appendix Chapter 33, Section 3317 – Grading Inspections;
4. recommend field changes to the civil engineer and RE;
5. review the geotechnical report, field exploration report, laboratory tests, and engineering analyses detailing the nature and extent of the site soils

that may be susceptible to liquefaction, rapid settlement or collapse when saturated under load; and

6. prepare reports on foundation investigation to comply with the 1998 CBC, Chapter 18, Section 1804 – Foundation Investigations.

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

Protocol: C: The design engineer shall:

1. be directly responsible for the design of the proposed structures and equipment supports;
2. provide consultation to the RE during design and construction of the project;
3. monitor construction progress to ensure compliance with LORS;
4. evaluate and recommend necessary changes in design; and
5. prepare and sign all major building plans, specifications and calculations.

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

Protocol: E: The electrical engineer shall:

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

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

If the designated responsible engineer is subsequently reassigned or replaced, the project owner has five days in which to submit the name, qualifications, and

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

**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 and Section – 1701.5 Type of Work (requiring special inspection), Section 106.3.5 – Inspection and observation program.

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

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

**Verification:** At least 15 days 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** The project owner shall keep the CBO informed regarding the status of construction. If any discrepancy between design and construction is discovered during construction, the project owner shall prepare and submit a non-conformance report (NCR) describing the nature of the discrepancy to the CBO. The NCRs shall reference this condition of certification, and applicable sections of the applicable edition of the CBC~~

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

**Verification:** The project owner shall submit monthly construction progress reports to the CBO and CPM. The project owner shall transmit a copy of the CBO's approval or disapproval of any corrective action taken to resolve a discrepancy to the CPM within 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.

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

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

**GEN-9** The project owner shall file a closure/decommissioning plan with the City of Pittsburg, Contra Costa County and the CPM for review and approval at least 12 months (or other mutually agreed to time) prior to commencing the closure activities. If the project is abandoned before construction is completed, the project owner shall return the site to its original condition.

**Protocol:** The closure plan shall include a discussion of the following:

1. the proposed closure/decommissioning activities for the project and all appurtenant facilities constructed as part of the project;
2. all applicable LORS, all local/regional plans, and a discussion of the conformance of the proposed decommissioning activities to the applicable LORS and local/regional plans;
3. activities necessary to restore the site if the decommissioning plan requires removal of all equipment and appurtenant facilities; and
4. closure/decommissioning alternatives, other than complete restoration of the site.

**Verification:** At least 12 months prior to closure or decommissioning activities, the project owner shall file a copy of the closure/decommissioning plan with the City of Pittsburg, Contra Costa County and the CPM for review and approval. Prior to the submittal of the closure plan, a meeting shall be held between the project owner and the CPM for discussing the specific contents of the plan.

**GEO-1** Prior to the start of construction, the project owner shall assign to the project an engineering geologist(s), certified by the State of California, to carry out the duties required by the 1998 CBC, Appendix Chapter 33, Section 3309.4. The certified engineering geologist(s) assigned must be approved by the CPM (the functions of the engineering geologist can be performed by the responsible geotechnical engineer, if that person has the appropriate California license).

**Verification:** At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of construction, the project owner shall submit to the CBO for approval, the name(s) and license number(s) of the certified engineering geologist(s) assigned to the project. The submittal should include a statement that CBO approval is needed. The CBO will approve or disapprove of the engineering geologist(s) and will notify the project owner and CPM of its findings within 15 days of receipt of the submittal.

If the engineering geologist(s) is subsequently replaced, the project owner shall submit for approval the name(s) and license number(s) of the newly assigned individual to the CBO and CPM. The CBO will approve or disapprove of the engineering geologist(s) and will notify the project owner and the CPM of the findings within 15 days of receipt of the notice of personnel change.

**GEO-2** The assigned engineering geologist shall carry out the duties required by the 1998 CBC, Appendix Chapter 33, Section 3309.4 – Engineered Grading Requirement, and Section 3318.1 – Final Reports. Those duties are:

1. Prepare the Engineering Geology Report. This report shall accompany the plans and specifications when applying to the CBO for the grading permit.
2. Monitor geologic conditions during construction.
3. Prepare the Final Geologic Report.

Protocol: The Engineering Geology Report required by the 1998 CBC, Appendix Chapter 33, Section 3309.3 Grading Designation, and shall include an adequate description of the geology of the site, conclusions and recommendations regarding the effect of geologic conditions on the proposed development, and an opinion on the adequacy, for the intended use, of the site as affected by geologic factors.

The Final Geologic Report to be completed after completion of grading, as required by the 1998 CBC, Appendix Chapter 33, Section 3318.1, and shall contain final description of the geology of the site and any new information disclosed during the grading, and the effect of same on recommendations incorporated in the approved grading plan. Engineering geologists shall submit a statement that, to the best of their knowledge, the work within their area of responsibility is in accordance with the approved Engineering Geology Report and applicable provisions of the 1998 CBC, Appendix Chapter 33, Section 3318.1.

**Verification:** (1) Within 15 days after submittal of the application(s) for grading permit(s) to the CBO, the project owner shall submit a signed statement to the CPM stating that the Engineering Geology Report has been submitted to the CBO as a supplement to the plans and specifications and that the recommendations contained in the report are incorporated into the plans and specifications. (2) Within 90 days following completion of the final grading, the project owner shall submit copies of the Final Geologic Report required by the 1998 CBC, Appendix Chapter 33, Section 3318 Completion of Work, to the CPM and the CBO.

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

Protocol: design of the proposed drainage structures and the grading plan;

Protocol: an erosion and sedimentation control plan;

Protocol: related calculations and specifications, signed and stamped by the responsible civil engineer; and

Protocol: soils report as required by the 1998 CBC, Appendix Chapter 33, Section 3309.5 – Soils Engineering Report and Section 3309.6 – Engineering Geology Report.

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

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

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

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

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

**Verification:** Within five days of the discovery of any discrepancies, the resident engineer shall transmit to the CBO and the CPM an 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 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) 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.

**CIVIL-5** Deleterious and/or contaminated materials and soils are to be mitigated in a manner acceptable to the CBO.

**Protocol:** The project grading plans and specifications are to include steps to assure the stability of the foundation of the power plant with respect to differential settlement.

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

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

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

**STRUC-1** Prior to the start of any increment of construction, the project owner shall submit to the CBO for review and approval the applicable designs, plans and drawings, and a list of those project structures, components and major equipment items that will undergo dynamic structural analysis. Designs, plans and drawings shall be those for:

1. major project structures;
2. major foundations, equipment supports and anchorage;
3. large field fabricated tanks;

4. turbine/generator pedestal; and
5. switchyard structures.

Protocol: The project owner shall:

1. obtain agreement with the CBO on the list of those structures, components and major equipment items to undergo dynamic structural analysis;
2. meet the pile design requirements of the 1998 CBC. Specifically, Section 1807 – General Requirements, Section 1808 – Specific Pile Requirements, and Section 1809 – Foundation Construction (in seismic zones 3 and 4);
3. 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];
4. 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 90 days~~ 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
5. ensure that the final plans, calculations, and specifications clearly reflect the inclusion of approved criteria, assumptions, and methods used to develop the design. The final designs, plans, calculations and specifications shall be signed and stamped by the responsible design engineer. [1998 CBC, Section 106.3.4 – Architect or engineer of record.]

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

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

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

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

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

**Verification:** If a discrepancy is discovered in any of the above data, the project owner shall, within five days, prepare and submit an NCR describing the nature of the discrepancies to the CBO, with a copy of the transmittal letter to the CPM. The NCR shall reference the condition(s) of certification and applicable CBC chapter and section. Within five days of resolution of the NCR, the project owner shall submit a copy of the corrective action to the CBO and the CPM.

The project owner shall transmit a copy of the CBO's approval or disapproval of the corrective action to the CPM within 15 days. If disapproved, the project owner shall advise the CPM, within five days, 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. Chapter 16, Table 16-K of the 1998 CBC requires use of the following seismic design criteria:  $I = 1.25$ ,  $I_p = 1.5$  and  $I_w = 1.15$ .

**Verification:** At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of installation of the tanks or vessels containing the above specified quantities of highly toxic or explosive substances that would be hazardous to the safety of the general public if released, the project owner shall submit to the CBO for review and approval, final design plans, specifications, and calculations, including a copy of the signed and stamped engineer's certification.

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

**MECH-1** Prior to the start of any increment of piping construction, the project owner shall submit, for CBO review and approval, the proposed final design drawings, specifications and calculations for each plant piping system (exclude: domestic water, refrigeration systems, and small bore piping, i.e., piping and tubing with a diameter equal to or less than two and one-half inches). The submittal shall also include the applicable QA/QC procedures. The project owner shall design and install all piping, other than domestic water, refrigeration, and small bore piping to the applicable edition of the CBC. Upon completion of construction of any piping system, the project owner shall request the CBO's inspection approval of said construction. [1998 CBC, Section 106.3.2 – Submittal documents, Section 108.3 – Inspection Requests.]

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

1. the proposed final design plans, specifications and calculations conform with all of the piping requirements set forth in the Energy Commission's Decision; and
2. all of the other piping systems, except domestic water, refrigeration systems and small bore piping have been designed, fabricated and installed in accordance with all applicable ordinances, regulations, laws and industry standards, including, as applicable:
  - American National Standards Institute (ANSI) B31.1 (Power Piping Code);
  - ANSI B31.2 (Fuel Gas Piping Code);
  - ANSI B31.3 (Chemical Plant and Petroleum Refinery Piping Code);
  - ANSI B31.8 (Gas Transmission and Distribution Piping Code);
  - and
  - Specific City/County code.

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

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

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

The project owner shall:

1. ensure that all boilers and fired and unfired pressure vessels are designed, fabricated and installed in accordance with the appropriate section of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, or other applicable code. Vendor certification,

with identification of applicable code, shall be submitted for prefabricated vessels and tanks; and

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

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

The project owner shall send copies of the CBO plan check approvals to the CPM in the following Monthly Compliance Report. The project owner shall also transmit a copy of the CBO's and/or Cal-OSHA inspection approvals to the CPM in the Monthly Compliance Report following completion of any inspection.

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

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

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

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

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

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

1. plumbing, potable water, all drainage systems, and toilet rooms in accordance with Title 24, California Code of Regulations, Division 5, Part 5 and the California Plumbing Code (or other relevant section(s) of the currently adopted California Plumbing Code and Title 24, California Code of Regulations); and
2. building energy conservation systems and temperature control and ventilation systems in accordance with Title 24, California Code of Regulations, Division 5, Chapter 2-53, Part 2.

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

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

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

**MECH-5** Prior to construction of the natural gas pipeline, the project owner shall provide a plan to the CPM, for approval, detailing the measures that will be taken, above and beyond adherence to the applicable LORS, to ensure safety during installation and operation of the pipeline, particularly that portion passing near residences. The plan shall address any design features, such as increased depth, a protective cap, and special construction techniques that will be incorporated in installation of the pipeline.

Protocol: The LORS applicable to the natural gas pipeline include the following:

1. Title 49 Code of Federal Regulations, Parts 191 and 192
2. California Health and Safety Code Sections 13107.5 and 25504
3. California Public Utilities Commission General Order 112-E

**Verification:** At least thirty days prior to the beginning of construction of the natural gas pipeline, the project owner shall provide to the CPM the plan described herein for approval. Any actual construction deviations from this plan shall be reported and dealt with per the requirements of Condition of Certification **GEN-7** above.

**ELEC-1** For the 13.8 kV and lower systems, the project owner shall not begin any increment of electrical construction until plans for that increment have been approved by the CBO. These plans, together with design changes and design change notices, shall remain on the site for one year after completion of construction. The project owner shall request that the CBO inspect the installation to ensure compliance with the requirements of applicable LORS. [1998 CBC, Section 108.4 – Approval Required, and Section 108.3 – Inspection Requests.]

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

1. receipt or delay of major electrical equipment;
2. testing or energization of major electrical equipment; and
3. the number of electrical drawings approved, submitted for approval, and still to be submitted.

**Verification:** At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of each increment of electrical construction, the project owner shall submit to the CBO for review and approval the final design plans, specifications and calculations, including a copy of the signed and stamped statement from the responsible electrical engineer attesting

compliance with the applicable LORS, and send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

**ELEC-2** The project owner shall submit to the CBO the required number of copies of items A and B for review and approval and one copy of item C: [CBC 1998, Section 106.3.2 – Submittal documents.]

- A. Final plant design plans to include:
  - 1. one-line diagrams for the 13.8 kV, 4.16 kV and 480 V systems;
  - 2. system grounding drawings;
  - 3. general arrangement or conduit drawings; and
  - 4. other plans as required by the CBO.
  
- B. Final plant calculations to establish:
  - 1. short-circuit ratings of plant equipment;
  - 2. ampacity of feeder cables;
  - 3. voltage drop in feeder cables;
  - 4. system grounding requirements;
  - 5. coordination study calculations for fuses, circuit breakers and protective relay settings for the 13.8 kV, 4.16 kV and 480 V systems;
  - 6. system grounding requirements;
  - 7. lighting energy calculations; and
  - 8. other reasonable calculations as customarily required by the CBO.
  
- C. A signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications conform to requirements set forth in the Commission Decision.

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

# TRANSMISSION SYSTEM ENGINEERING

Testimony Errata for Ean O'Neill

## INTRODUCTION

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Staff's original testimony on Transmission System Engineering was filed on March 10, 1999. Subsequent to that testimony, the applicant has revised the transmission line route at the west end of the project, changed the pole size and revised its underground location along 8<sup>th</sup> Street. A clarification about the potential 17 overloaded lines is provided in the **System Reliability** section. The system reliability impacts due to PDEF interconnecting to the existing 115 kV switchyard at the Pittsburg Power Plant are provided in the **TRANSMISSION SYSTEM ENGINEERING Errata Table 1**.

## CORRECTIONS/CHANGES

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Page 417, Project Description; Page 419, Outlet Line and Page 429, Cumulative Impacts: any reference to the 8<sup>th</sup> Street median right of way for the underground portion of PDEF's transmission line should be replaced with the following paragraph. It is staff's understanding that the DEC is in negotiations to gain access to the existing old railroad 50-foot right of way along the 8<sup>th</sup> Street median strip (**White 1999, pers.comm.**). To accommodate the PDEF underground transmission line, the City of Pittsburg plans to condemn a subsurface easement underneath the eastbound lane of 8<sup>th</sup> Street (**Ratliff 1999, pers.comm.**). The PDEF will be required to enter into a long-term franchise agreement with the City of Pittsburg for the right to use the 8<sup>th</sup> Street easement. See **TRANSMISSION SYSTEM ENGINEERING Errata Figure 1**.

Page 417, Project Description, paragraph 1: Delete 130-foot lattice or steel poles. Add 75-foot steel tubular poles.

Page 418, Project Description, paragraph 1: Delete last sentence, "Just north of 8<sup>th</sup> and Beacon..." Add the following sentences. West of the 8<sup>th</sup> Street and Montezuma Street intersection, the underground transmission line route turns north along the eastern-most fence line of the Delta Diablo Water Treatment Facility pump station site. The underground transmission line turns west at the northeast edge of the pump station property line and continues in a westerly direction to the northwest edge of the pump station property line. The line then rises overhead and travels north along the original Route 10 to the existing 115 kV switchyard at the Pittsburg Power Plant.

Page 419, Outlet Line, paragraph 1: Delete 150-foot steel tubular poles. Add 75-foot steel tubular poles.

Page 422, Outlet Line, paragraph 1: Delete 130-foot lattice or steel poles. Add 75-foot steel tubular poles.

Page 424, Scope of Reliability Studies, paragraph 1 & 2: Delete the sentence that begins “Just west of Montezuma Street...” Add the following sentences. West of the 8<sup>th</sup> Street and Montezuma Street intersection, the underground transmission line route turns north along the eastern-most fence line of the Delta Diablo Water Treatment Facility pump station site. The underground transmission line turns west at the northeast edge of the pump station property line and continues in a westerly direction to the northwest edge of the pump station property line. The line then rises overhead and travels north along the original Route 10 to the existing 115 kV switchyard at the Pittsburg Power Plant.

Page 426, Reliability Study Results, the paragraph below tables: Delete the entire paragraph. Add the following paragraph and **TRANSMISSION SYSTEM ENGINEERING Errata Table 1**. The above overloaded lines are considered congestion impacts. That is, the lines become overloaded when the PDEF’s output ranges from 4 to 164 MWs depending on the contingency. Reducing generation, which is a congestion management procedure, could eliminate the normal and emergency overloads caused by the PDEF being added to the system (**reference PDEF workshop 3/23/99**). The **TRANSMISSION SYSTEM ENGINEERING Table 3** shows the amount of generation reduction required to mitigate the identified overloads (PDEF 1998I, AFC Attachment 4). The four circuit breakers listed in **TRANSMISSION SYSTEM ENGINEERING Errata Table 1** below need to be replaced in order to maintain adequate system reliability since their fault interrupting capability is exceeded if PDEF interconnects to the existing 115 kV switchyard at the Pittsburg Power Plant (PDEF 1998I, AFC pages 20 & 22).

**TRANSMISSION SYSTEM ENGINEERING Errata Table 1**  
**Circuit Breakers to be Replaced**

Substation	Circuit Breakers
Linde	1 – 115 kV (# 152)
Clayton	3 – 115 kV (#s 132, 312, and 332)

**TRANSMISSION SYSTEM ENGINEERING Errata Figure 1**  
**Sketch of 115 kV Duct Bank in 8<sup>th</sup> Street**