Final Initial Study

NILAND GAS TURBINE PLANT

Small Power Plant Exemption (06-SPPE-1)
Imperial County

CALIFORNIA ENERGY COMMISSION

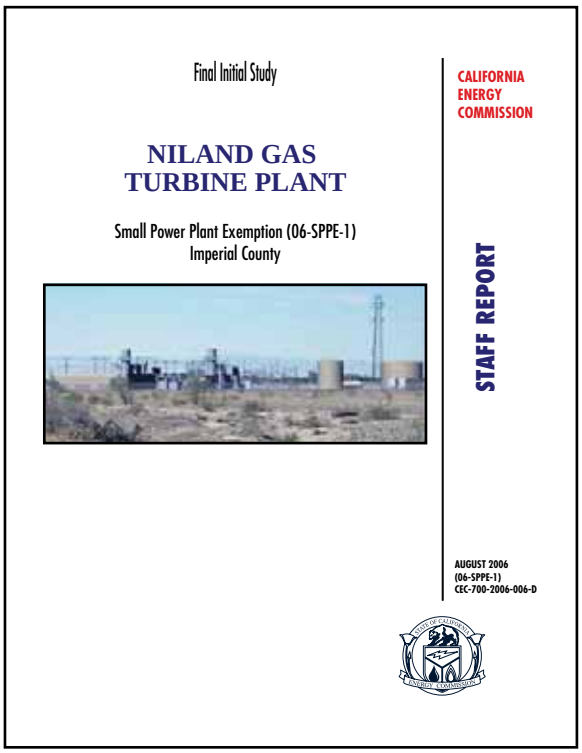
DOCKET
06-SPPE-1

DATE
RECD. AUG 30 2006

STAFF REPORT

AUGUST 2006
(06-SPPE-1)
CEC-700-2006-006-D

PROOF OF SERVICE (REVISED _____) FILED WITH
ORIGINAL MAILED FROM SACRAMENTO ON 8/30/06
AH



CALIFORNIA ENERGY COMMISSION

SITING OFFICE

Jack W. Caswell
Project Manager

Roger E. Johnson
Siting Office Manager

SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION

Terrence O'Brien
Deputy Director

TABLE OF CONTENTS

EXECUTIVE SUMMARY i
PROPOSED MITIGATED NEGATIVE DECLARATION v
INTRODUCTION 1-1
PROJECT DESCRIPTION 2-1
AIR QUALITY 3-1
BIOLOGICAL RESOURCES 4-1
CULTURAL RESOURCES 5-1
ENERGY RESOURCES 6-1
GEOLOGY, MINERAL RESOURCES & PALEONTOLOGY 7-1
HAZARDOUS MATERIALS MANAGEMENT 8-1
LAND USE, RECREATION, AND AGRICULTURE RESOURCES 9-1
NOISE AND VIBRATION 10-1
PUBLIC HEALTH 11-1
SOCIOECONOMICS 12-1
SOIL AND WATER RESOURCES 13-1
TRAFFIC & TRANSPORTATION 14-1
TRANSMISSION LINE SAFETY AND NUISANCE 15-1
TRANSMISSION SYSTEM ENGINEERING 16-1
VISUAL RESOURCES 17-1
WASTE MANAGEMENT 18-1
GENERAL CONDITIONS OF EXEMPTION 19-1
PREPARATION TEAM 20-1

EXECUTIVE SUMMARY

Jack W. Caswell

INTRODUCTION

The Final Initial Study (FIS) contains the California Energy Commission (Energy Commission) staff's evaluation of the Imperial Irrigation District's (IID) Niland Gas Turbine Plant (NGTP), Application for a Small Power Plant Exemption (SPPE).

The Energy Commission has the exclusive authority to certify all sites and related facilities for thermal electrical power plants of 50 MW or larger within the state. A provision of the Warren-Alquist Act allows the Energy Commission to exempt power plants not exceeding 100 MW from the site certification process if it finds that no substantial adverse impact on the environment or energy resources would result from the construction or operation of the proposed facility (Pub. Resources Code § 25541). Under this exemption process, the Energy Commission prepares the environmental document that would be used by local and state agencies that issue the necessary permits.

In this FIS, staff examined potential impacts on the environment, energy resources, public health and safety, and transmission systems engineering aspects of the NGTP project. Energy Commission staff has presented conclusions and proposed conditions of exemption that staff believes are necessary to mitigate or avoid significant adverse environmental impacts of the proposed facility, if exempted.

BACKGROUND

On March 13, 2006, the Imperial Irrigation District (IID), filed the SPPE application (06-SPPE-1) for the NGTP project and staff began its review of the project. The Energy Commission appointed a Committee to oversee the SPPE application at the March 29, 2006, business meeting. On May 3, 2006, an Informational Hearing and Site Visit was conducted for the NGTP in the town of Niland. On June 23, 2006, staff published a Draft Initial Study, and on July 12, 2006, staff conducted a Draft Initial Study workshop at the Energy Commission in Sacramento.

The analyses contained in this FIS are based upon information from:

1. The SPPE application for the NGTP;
2. The applicant's responses to data requests;
3. Comments from federal, state, and local agencies;
4. Various documents and publications listed at the end of each section;
5. A public meeting and site visit;
6. A staff Draft Initial Study;

7. A staff sponsored Draft Initial Study workshop, and

8. Staff's independent investigations and analyses.

The Energy Commission staff and the Committee assigned to the case have made a substantial effort to notify interested parties and encourage public participation in the NGTP SPPE review process.

The Energy Commission has:

- Mailed separate Notices of Receipt of the Application for Small Power Plant Exemption (SPPE) to interested parties, local libraries, responsible and trustee agencies, and contiguous property owners on March 13, 2006;
- Mailed a Notice of Public Hearing and Site Visit on April 18, 2006, to responsible and trustee agencies, persons with property contiguous to the proposed project, and individuals that expressed interest;
- Sent an informational newsletter submission in both English and Spanish to a grade school, day-care facility, fire department, medical clinic, and churches within a 5-mile radius of proposed project;
- Conducted an Informational Hearing and Site Visit on May 3, 2006, in Niland;
- Mailed Notices of a Draft Initial Study Workshop on June 23, 2006, to responsible and trustee agencies, persons with property contiguous to the proposed project, and individuals that expressed interest, and
- Conducted a Draft Initial Study workshop on July 12, 2006 and receive comments on the Draft Initial Study until July 26, 2006.

PROJECT DESCRIPTION

The IID proposes to build and operate a nominal 93 MW simple-cycle power plant on a 160-acre site northeast of Niland, California. This proposed facility will occupy 22-acres of the 160-acre site and is referred to as the Niland Gas Turbine Plant (NGTP). The proposed site is owned by the IID and is adjacent to the IID's existing Niland Substation. The proposed electrical generating facility will be owned and operated by IID. The project would supply the internal electrical power generation needs of the IID service territory during periods of peak electrical demand.

A more complete description of the project, including a description and maps of the proposed upgrades to the transmission, water, and natural gas pipeline systems, is contained in the **PROJECT DESCRIPTION** section of this Initial Study. (**See Project Description Figures 1 & 2)**

STAFF'S ASSESSMENT

Each technical section of the Final Initial Study contains a discussion of impacts, and where appropriate, mitigation measures presented in the form of Conditions of Exemption. The Final Initial Study includes staff's discussion of:

- The environmental setting surrounding the project area;
- Potentially significant and adverse impacts to public health and safety, and measures proposed to mitigate these impacts; and
- Potentially significant and adverse environmental impacts and measures proposed to mitigate these impacts.

SUMMARY OF CONCLUSIONS

The following table presents a summary of staff's analysis of the potential impacts of the NGTP. Staff has concluded that with the mitigation measures proposed by the applicant and the conditions of exemption recommended herein, the NGTP Project will not result in any significant direct, indirect or cumulative impacts to public health, safety energy resources or the environment.

Summary of Conclusions: Environmental and Energy Resources Checklist

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
ENVIRONMENTAL				
Air Quality		X		
Biological Resources		X		
Cultural Resources		X		
Energy Resources				X
Geology and Paleontology		X		
Hazardous Materials		X		
Land Use/Recreation/Agricultural		X		
Noise		X		
Public Health			X	
Socioeconomics				X
Soils and Water Resources		X		
Traffic & Transportation		X		
Visual Resources			X	
Waste Management			X	
ENGINEERING				
Transmission Line Safety & Nuisance		X		
Transmission System Engineering			X	

PROPOSED MITIGATED NEGATIVE DECLARATION

Pursuant to Title 14, California Code of Regulations, Sections 15070 and 15071 and pursuant to the California Energy Commission's Rules of Practice and Procedure (Cal. Code Regs., tit. 20, section 1101 et seq.) and Site Certification Regulations (Cal. Code Regs., tit. 20, section 1701 et seq.), the Deputy Director of the California Energy Commission's Division of Energy Facilities Siting does prepare, make, declare, publish, and cause to be filed with the County Clerk of Imperial County, State of California, this Mitigated Negative Declaration for the Niland Gas Turbine Plant (NGTP), Application for Small Power Plant Exemption (06-SPPE-1).

1. The State Energy Resources Conservation and Development Commission (Energy Commission) is responsible for licensing all thermal power plants in California that have a capacity of 50 megawatts (MW) or greater. (Pub. Resources Code, section 25500.) The Energy Commission may exempt power plants from these requirements if they have a capacity not exceeding 100 MW, and if the Energy Commission finds that the project will not create a substantial adverse impact on the environment or energy resources. (Pub. Resources Code section 25541.) Such projects are subject to applicable local permitting requirements.

   The Energy Commission is the lead agency for all projects that it licenses or exempts. (Pub. Resources Code section 25519(c).) The Energy Commission proposes to grant the Application for a Small Power Plant Exemption (SPPE) filed by Imperial Irrigation District (IID) on March 13, 2006, for the NGTP project. If the Energy Commission grants the exemption, IID will be required to obtain all necessary local, regional, state, and federal permits to construct and operate the proposed facility.

2. Title and Short Description of Project:

   a) Niland Gas Turbine Plant (NGTP), Application for a Small Power Plant Exemption (06-SPPE-1).

   b) The proposed project is to construct and operate a 93-megawatt (MW) generation plant called the NGTP. The natural gas-fired simple cycle plant will consist of two General Electric LM 6000 SPRINT combustion turbines. The proposed project includes the construction of an approximately 520-foot 92-kV overhead transmission line, an approximately 1,800-foot natural gas supply line, 700- foot water supply line connecting to the existing Golden State Water Company water supply lines located adjacent to the NGTP site location, and a storm water basin located in the south central portion of the proposed site location.

3. Location of Project:

   a) Imperial County (Assessors Parcel Number 021-160-14), (see PROJECT DESCRIPTION — Figure 1, Local & Regional Map and Figure 2, Plant Layout)

b) Community of Niland is an unincorporated area of Imperial County (see PROJECT DESCRIPTION — Figure 1)

4. Project Applicant:

   Imperial Irrigation District
   485 E. Villa Rd.
   El Centro, CA 92243

5. Further information about the NGTP, the Final Initial Study (FIS), or the Energy Commission's exemption process may be obtained by contacting the California Energy Commission's Siting Project Manager for the NGTP project, Jack W. Caswell, California Energy Commission,1516 9th Street, M.S. 15, Sacramento, CA 95814, Phone (916) 653-0062.

6. The mitigation measures that avoid potentially significant adverse effects are included at the end of each technical section in the FIS.

Therefore, the Energy Commission finds that this FIS has identified potentially significant effects on the environment, however: 1) revisions to the project plans or proposals made by, or agreed to by the applicant will avoid the effects or mitigate the effects to where no significant adverse effect on the environment would occur, and 2) there is no substantial evidence, in light of the whole record before the agency, that the project, as revised, may have a significant effect on the environment. As a result, the Energy Commission finds that approval of the Application for a Small Power Plant Exemption for the Niland Gas Turbine Plant project will result in no significant adverse environmental impacts.

INTRODUCTION

Jack W. Caswell

PURPOSE OF THIS REPORT

The Imperial Irrigation District (IID or applicant) filed a request for a Small Power Plant Exemption (SPPE) with the California Energy Commission (Energy Commission) on March 13, 2006.

California's Warren-Alquist Act (Pub. Resources Code (PRC) § 25000 et seq.) gives the Energy Commission the exclusive authority to certify all sites and related facilities for thermal electrical power plants of 50-Megawatts (MW) or more within the state (Pub. Resources Code § 25120 and 25500 et seq.). Section 25541 of the Warren-Alquist Act allows the Energy Commission to exempt power plants not exceeding 100-MW from the site certification process if it finds that no substantial adverse impact on the environment or energy resources will result from the construction or operation of the proposed facility.

The proposed plant is also subject to the requirements of the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). Pub Resources Code section 25519 (c) states that the Energy Commission shall act as lead agency under CEQA for projects that it either certifies or exempts from certification. Staff has prepared this Final Initial Study in accordance with CEQA and Title 20, California Code of Regulations (CCR) sections 1934 et seq. and 2300 et seq.

STAFF ANALYSIS

Staff's environmental and engineering analyses in the Final Initial Study (FIS) document are the factual basis for staff's recommendation regarding the project's potential to result in substantial adverse impacts on the environment, public health or energy resources.

Staff has included Conditions of Exemption in various technical areas, which if implemented along with the applicant's proposed mitigation measures, should ensure that the project would result in no substantial adverse impact. In addition, staff will adopt a reporting or monitoring program designed to ensure compliance during project development and to avoid significant impacts or the need for further mitigation. As a result of the Draft Initial Study workshop held on July 12, 2006, discussions with local and agencies, the public and additional evidence provided during review of the SPPE application in this proceeding, staff produced the FIS.

REVIEW PROCESS

The Energy Commission's assigned Committee (Committee) will conduct a hearing at which all parties will have an opportunity to comment on the FIS and make recommendations on the SPPE application. The Committee will consider the application, staff's analysis, and any other evidence presented in the proceedings to determine whether to recommend granting the SPPE. Following the hearing, the

Committee will prepare and publish a proposed decision. The full Commission will then hold a hearing for final comments and render a decision on the application for the SPPE.

Title 14, California Code of Regulations section 15063 (d) states that an Initial Study shall contain the following items:

- A description of the project including the location of the project;
- An identification of the environmental setting;
- An identification of environmental effects by use of a checklist, matrix, or other method, provided that entries on a checklist or other form are briefly explained to indicate that there is some evidence to support the entries;
- A discussion of the ways to mitigate the significant effects identified, if any;
- An examination of whether the project would be consistent with existing zoning, plans, and other applicable land use controls; and
- The name of the person or persons who prepared or participated in the Initial Study.

The Energy Commission has made a substantial effort to notify interested parties and encourage public participation. The Energy Commission has:

- Mailed separate Notices of Receipt of the Application for Small Power Plant Exemption (SPPE) to interested parties, local libraries, responsible and trustee agencies, and contiguous property owners on March 13, 2006;
- Mailed a Notice of Public Hearing and Site Visit on April 10, 2006, to responsible and trustee agencies, persons with property contiguous to the proposed project, and individuals that expressed interest;
- Distributed flyers describing the project and informing the public of the Informational Hearing/Site Visit through the Niland community;
- Distributed flyers describing the project and informing the public of the Informational Hearing/Site Visit to Niland Elementary School in both English and Spanish;
- Conducted an Informational Hearing and Site Visit on May 3, 2006 in Niland;
- Mailed Notices of Availability for the Draft Initial Study to interested parties, local libraries, responsible and trustee agencies, and contiguous property owners on June 23, 2006;
- Mailed Notices of Draft Initial Study Workshop to interested parties, local libraries, responsible and trustee agencies, and contiguous property owners, and
- Conducted a Draft Initial Study workshop on July 12, 2006 at the California Energy Commission in Sacramento.

Please see the Executive Summary for Final Initial Study summary details.

PROJECT DESCRIPTION

Testimony of Jack Caswell

PROJECT TITLE

Niland Gas Turbine Plant, Application for Small Power Plant Exemption (06-SPPE-1).

PROJECT SPONSOR'S NAME AND ADDRESS

Imperial Irrigation District
333 East Barioni Blvd
P. O. Box 937
Imperial, CA 92251-0937

LEAD AGENCY NAME AND ADDRESS

California Energy Commission
Systems Assessment and Facilities Siting Division
1516 Ninth Street
Sacramento, CA 95814

PROJECT LOCATION

The Niland Gas Turbine Plant (NGTP) is proposed to be located northeast of the unincorporated Town of Niland, CA, on the 160-acre property owned by the Imperial Irrigation District (IID). The proposed project would be constructed on approximately 22 acres on the southwestern portion of the property which is adjacent to the IID's existing Niland Substation located on Beal Road. **See Project Description Location Map Figure 1**.

GENERAL PLAN DESIGNATION

Imperial County General Plan Designation: A-2 and M-I

ZONING

The proposed NGTP project will not impact the northern portion of the 160 acres designated A-2 Agriculture. The southern half of the property is zoned M-1 Manufacturing Light Industrial. M-1 zoning includes "Electric Power Generation and requires a general plan amendment and conditional use permit from the Imperial County Planning/Building Department prior to the construction of the proposed project.

DESCRIPTION OF PROJECT

The IID proposes to build, own, and operate a nominal 93-megawatt (MW) simple-cycle power plant on 22-acres of a 160-acre site. The proposed site is adjacent to the IID's

existing Niland Substation. The site is located in a northeast portion of Niland, California. The plant would consist of two General Electric LM6000 PD SPRINT NxGen combustion turbine generators (CTG) equipped with inlet air chiller coils, zero liquid discharge (ZLD) wastewater treatment system, water storage and treatment systems, gas compressor equipment, and electrical transmission and interconnection system and associated auxiliary systems and equipment. The project would supply the internal power generation needs of the IID service territory during periods of peak electrical demand. **See Project Description Site Layout Figure 2.**

WATER SUPPLY AND USE

As proposed, the primary use of water at the NGTP will be to inject demineralized water for power augmentation of the CTG's. The project's water requirements are proposed to be supplied to the project site via a buried 8-inch potable water pipeline lateral from the Golden State Water Company's (GSWC) buried 12-inch pipeline, which crosses the northern half of the property. The lateral line would run south approximately 700 feet. GSWC will permit, construct, and operate the new 700-foot lateral pipeline.

STORMWATER

Project site grading and earthwork activities will be designed to direct all storm water generated on the project site away from equipment and buildings, and direct the storm water generated on the property away from the project site. Three new stormwater retention basins will be located along the south and west edge of the project site.

TRANSMISSION

The project will interconnect directly to the 92-kilovolt (kV) bus at the adjacent Niland Substation. A new intermediate generation switchyard will be constructed to gather the output from the project and provide a common point of interconnection to the Niland Substation. A 520-foot overhead 92-kV transmission line cable will connect the high-voltage side of the generating step-up transformers to the generation switchyard. An existing 13-kV overhead distribution line running along the north side of the Niland Substation will be partially placed underground to allow interconnection line overhead access into the Niland Substation.

NATURAL GAS

Natural gas will be supplied to the project site from two existing Southern California Gas Company (SCGC) parallel natural gas transmission pipelines running north-south along the eastern boundary of the property. A buried 1,800 foot natural gas lateral from the transmission pipelines would be routed east-west along an existing right-of-way on the south side of Beal Road. This natural gas lateral would be permitted, designed, constructed, owned and operated by SCGC.

EMISSION CONTROLS

The NGTP project will be equipped with Best Available Control Technology (BACT) to control air pollutant emissions. These controls include two combustion turbine generators (CTG) equipped with inlet air chiller coils to reduce the nitrogen oxide (NO_x) emissions from the CTG exhaust and a NO_x Selective Catalytic Reduction (SCR) system to reduce emissions to 2.5 parts per million (ppm) at full load. The SCR system

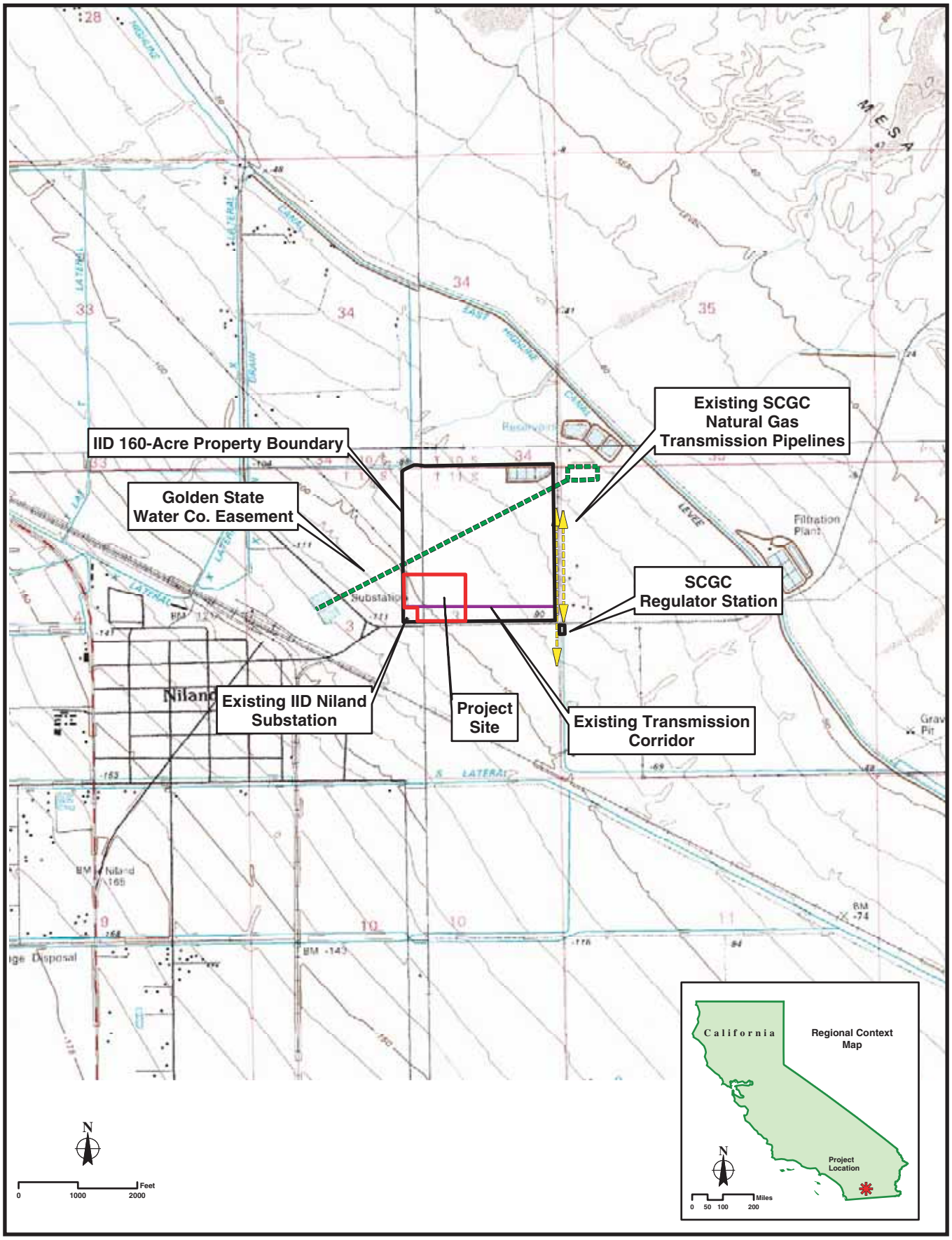
uses aqueous ammonia as a reagent for an ammonia injection system and an oxidation catalyst to maintain a Carbon Monoxide (CO) emission limit of 6.0 ppm in all operating conditions.

CONSTRUCTION SCHEDULE AND WORKFORCE

If the exemption is approved by the Energy Commission, the IID will acquire all necessary permits for project construction and operation. Following the acquisition of these permits, the IID Board is expected to release the funds for major equipment fabrication and retain the services of an electrical power plant construction contractor. The applicant plans to obtain all required permits by November 2006 followed by major equipment and fabrication procurements. The start of commercial operation is expected in May 2008. The IID estimates the capital costs of the NGTP to be $69.4 million.

The IID expects to employ up to approximately 40-60 construction workers over a 9 month period beginning in September 2007. This construction period will be from September to May to avoid the hottest period of the year. Due to worker health and safety considerations associated with high daytime temperatures, early work hours (prior to daybreak) may be adopted but will require compliance with noise Conditions of Exemption and county approval. The $69.4 million NGTP project will be designed for unmanned operation, however, IID's current operation and maintenance plan for the facilitate would require a permanent professional workforce of approximately two employees. Annual operation costs are estimated to be approximately $670,000.

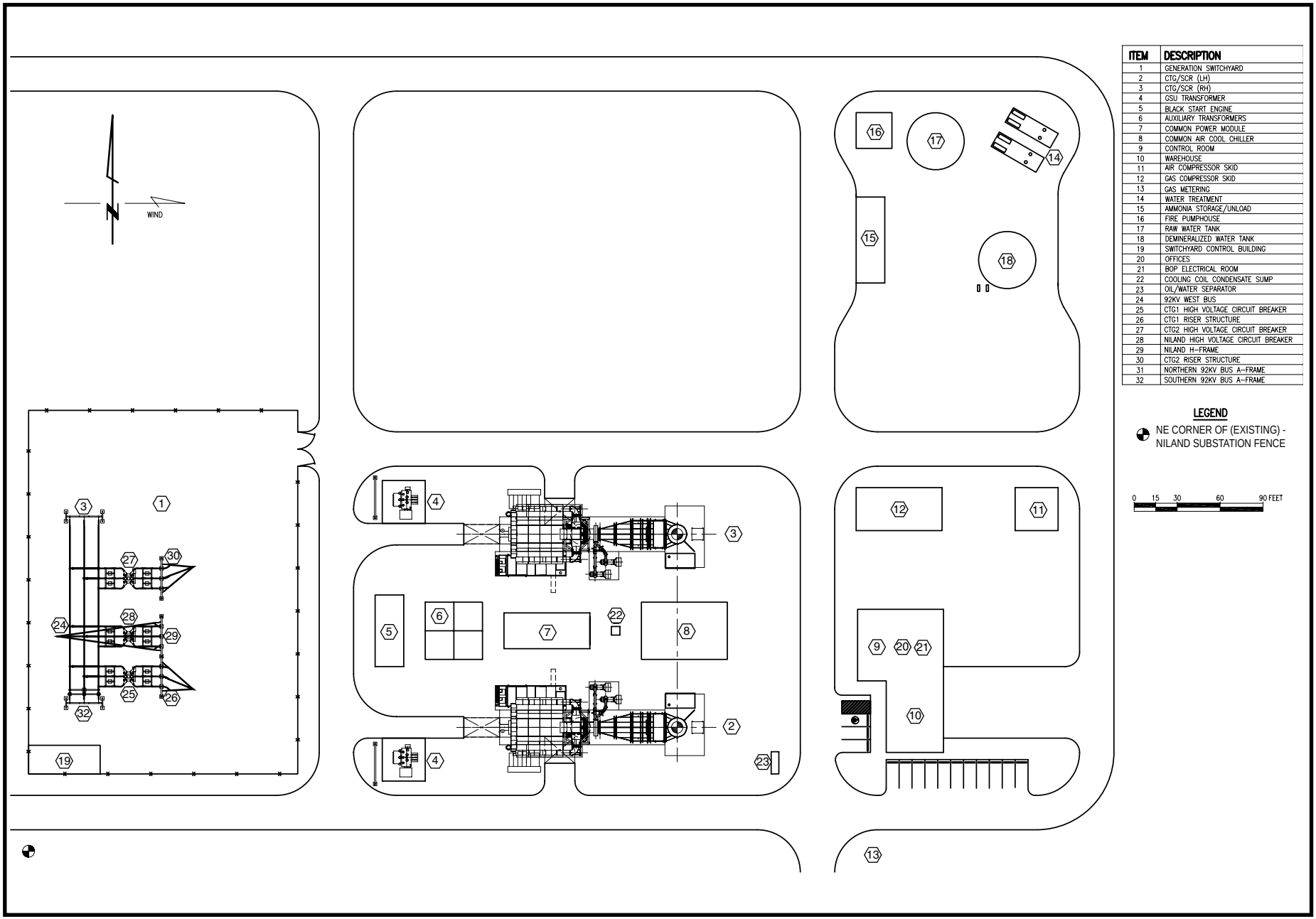
PROJECT DESCRIPTION - FIGURE 1
Niland Peaker Project - Project Location Map



CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, AUGUST 2006
SOURCE: AFC Figure 2.1-2

PROJECT DESCRIPTION - FIGURE 2

Niland Peaker Project - Plant Layout



ITEM	DESCRIPTION
1	GENERATION SWITCHYARD
2	CTG/SCR (LH)
3	CTG/SCR (RH)
4	GSU TRANSFORMER
5	BLACK START ENGINE
6	AUXILIARY TRANSFORMERS
7	COMMON POWER MODULE
8	COMMON AIR COOL CHILLER
9	CONTROL ROOM
10	WAREHOUSE
11	AIR COMPRESSOR SKID
12	GAS COMPRESSOR SKID
13	GAS METERING
14	WATER TREATMENT
15	AMMONIA STORAGE/UNLOAD
16	FIRE PUMPHOUSE
17	RAW WATER TANK
18	DEMINERALIZED WATER TANK
19	SWITCHYARD CONTROL BUILDING
20	OFFICES
21	BOP ELECTRICAL ROOM
22	COOLING COIL CONDENSATE SUMP
23	OIL/WATER SEPARATOR
24	92KV WEST BUS
25	CTG1 HIGH VOLTAGE CIRCUIT BREAKER
26	CTG1 RISER STRUCTURE
27	CTG2 HIGH VOLTAGE CIRCUIT BREAKER
28	NILAND HIGH VOLTAGE CIRCUIT BREAKER
29	NILAND H-FRAME
30	CTG2 RISER STRUCTURE
31	NORTHERN 92KV BUS A-FRAME
32	SOUTHERN 92KV BUS A-FRAME

CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, AUGUST 2006

SOURCE: AFC Figure 2.2-1

AIR QUALITY

Testimony of Tuan Ngo, P.E.

INTRODUCTION

This Initial Study analysis addresses the potential air quality impacts resulting from the emissions of criteria air contaminants due to the construction and operation of the Imperial Irrigation District Energy's (applicant) Niland Gas Turbine Plant (NGTP). In completing this analysis, the Energy Commission staff (staff) evaluated the issues identified in the CEQA Air Quality Checklist.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS)

AIR QUALITY Table 1 summarizes the applicable LORS.

AIR QUALITY Table 1
Laws, Ordinances, Regulations, and Standards

Applicable LORS	*Description*
Federal	New Source Review: Best Available Control Technology (BACT) and Offset requirements
	Title V: Federal permit
	New Source Performance Standard: 75 ppm NO_x and 150 ppm SOx @15% oxygen (O_2).
State	California Health and Safety Code: Permitting of source needs to be consistent with approved Clean Air Plan.
Local	New Source Review: BACT, offsets, and new sources shall not cause or make worse a violation of an Ambient Air Quality Standard.
	Acid Rain: Requires continuous emission monitoring system
	Particulate Matter and Visible Emissions: Emissions shall not be darker than Ringelmann No. 1 for a continuous three-minutes, and no more than 0.01 grains PM per standard dry cubic foot.
	Fuel burning equipment: Nitrogen Oxides shall not exceed 140 lbs/hour.

SETTING

CLIMATE AND METEOROLOGY

The project site is located in the Salton Sea Air Basin in the northern Imperial Valley approximately 0.3 miles northeast of the town of Niland. The project site is below sea level, and the terrain slopes gently downward from the northeast to the southwest toward the Salton Sea. The immediate area surrounding the project site is dominated by agriculture, geothermal power plants, and the Salton Sea.

The general area of Imperial County is classified as arid, with hot summers and mild winters. During the summer, the Pacific high-pressure zone is well-developed to the west of California, and a thermal trough overlies California's southeast desert region. The intensity and orientation of the trough varies from day to day. Air stagnation conditions can occur for a day or for a few days during the presence of a Pacific high-pressure system. Although the rugged mountainous country surrounding the Imperial Valley inhibits circulation, the influence of the trough does permit some inter-basin exchange of air with more westerly coastal locations through the mountain passes.

Relative humidity in the summer is low, averaging 30 to 50 percent in the early morning and 10 to 20 percent in the afternoon. During the hottest part of the day, a relative humidity below 10 percent is common, although the effect of extensive agricultural operations in the Imperial Valley tends to raise the humidity locally. The prevailing weather conditions promote intense heating during the day in summer, with marked cooling at night. The area temperatures can fluctuate between 40°F and 70°F in January and between 75°F and 105°F or more in July. The average annual precipitation is approximately 3 inches.

Figure 6.1-2 of the application for Small Power Plant Exemption (IID2006a) is a wind rose plot that illustrates the annual distribution of hourly wind direction and speed measurements from 1991 through 1995 at the Imperial County Airport. Monthly average wind speeds in the region range from 6.6 miles per hour (mph) in October to 9.5 mph in July. Winds average 7.8 mph annually. Winds in the valley are primarily from the west to east throughout the year, but have a secondary east/southeast component in the fall.

EXISTING AMBIENT AIR QUALITY

The Federal Clean Air Act and the California Clean Air Act both require the establishment of standards for ambient concentrations of air pollutants, called ambient air quality standards (AAQS). The state AAQS, established by the California Air Resources Board (CARB), are typically lower (more protective) than the federal AAQS, which are established by the United States Environmental Protection Agency (U.S. EPA). The state and federal air quality standards listed in AIR QUALITY Table 2 show the averaging times for the various air quality standards, which range from one-hour to an annual average. The standards are read as a concentration, in parts per million (ppm), or as a weighted mass of material per a volume of air, in milligrams or micrograms of pollutant in a cubic meter of air (mg/m^3 or $\mu g/m^3$, respectively).

In general, an area or air basin is designated as attainment if the concentration of a particular air contaminant does not exceed the standard. Likewise, an area is designated as non-attainment for an air contaminant if that contaminant standard is violated. When there is not enough ambient data available to support designation as either attainment or non-attainment, the area can be designated as unclassified. The unclassified area is normally treated the same as an attainment area for regulatory purposes. An area could be attainment for one air contaminant while non-attainment for another, or attainment for the federal standard and non-attainment for the state standard for the same air contaminant.

AIR QUALITY Table 2
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary	Secondary
Ozone(O_3)	1-hour	0.09 ppm (180 $\mu g/m^3$)	0.12 ppm (235 $\mu g/m^3$)	Same as primary
Particulate Matter (PM_{10})	Ann.Geo. Mean	20 $\mu g/m^3$	---	Same as primary
	24-hour	50 $\mu g/m^3$	150 $\mu g/m^3$	
	Ann.Arit. Mean	---	50 $\mu g/m^3$	
Fine Particulate Matter ($PM_{2.5}$)	24-hour	No separate standard	65 $\mu g/m^3$	Same as primary
	Ann.Arit. Mean	12 $\mu g/m3$	15 $\mu g/m^3$	Same as primary
Carbon Monoxide (CO)	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	None
	8-hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	
Nitrogen Dioxide (NO_2)	1-hour	0.25 ppm (470 $\mu g/m^3$)	---	Same as primary
	Ann.Arit. Mean	---	0.053 ppm (100 $\mu g/m^3$)	
Lead(Pb)	30-day	1.5 $\mu g/m^3$	---	Same as primary
	Cal. Quarter	---	1.5 $\mu g/m^3$	
Sulfur Dioxide (SO_2)	Ann.Arit. Mean	---	0.03 ppm (80 $\mu g/m^3$)	---
	24-hour	0.04 ppm (105 $\mu g/m^3$)	0.147 ppm (365 $\mu g/m^3$)	---
	3-hour	---	---	0.5 ppm (1300 $\mu g/m^3$)
	1-hour	0.25 ppm (655 $\mu g/m^3$)	---	---
Sulfates	24-hour	25 $\mu g/m^3$	No federal standard	
H_2S	1-hour	0.03 ppm (42 $\mu g/m^3$)	No federal standard	

Source: California Air Resources Board

AIR QUALITY Table 3 shows the designation status of the area air basin (Salton Sea) for each criteria pollutant for both the federal and state ambient air quality standards. The federal classifications range from moderate to extreme.

AIR QUALITY Table 3
Federal and State Attainment Status for the Salton Sea Air Basin

Pollutants	Federal Classification	State Classification
Ozone	Transitional Non-Attainment	Moderate Non-Attainment
PM_{10}	Serious Non-Attainment	Non-Attainment
$PM_{2.5}$	Unclassified/Attainment	---
CO	Unclassified/Attainment	Unclassified
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
H_2S	---	Unclassified

AIR QUALITY Figures 1 and 2 summarize the historical air quality data for the generalized project location for PM_{10}, CO, SO_2, O_3, and NO_2. In both figures, the normalized concentrations represent the ratio of the highest measured concentrations measured at Niland, or at El Centro monitoring station (about 30 miles away from the project site) in a given year to the most stringent applicable national or state ambient air quality standard. Therefore, normalized concentrations lower than one indicates that the measured concentrations were lower than the most stringent ambient air quality standard (either a federal or state standard). Based on the ambient concentration data collected, the area is consistently below the most stringent ambient air quality standards for all criteria pollutants except for ozone and PM_{10}. Below is a discussion of ambient air quality for O_3, NO_2, CO, PM_{10}, and $PM_{2.5}$.

REGIONAL AIR QUALITY CONDITIONS

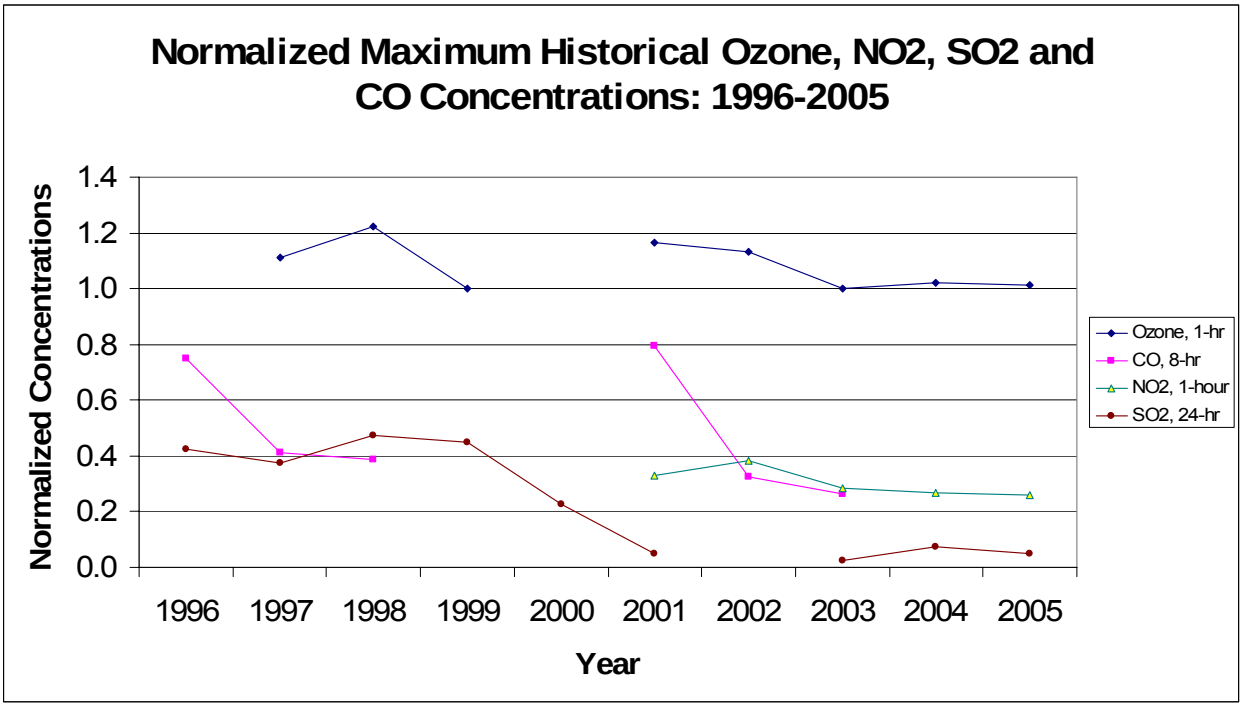
Ozone

Ozone is not directly emitted from stationary or mobile sources, but is formed as the result of chemical reactions in the atmosphere between nitrogen oxides and volatile organic compounds in the presence of sunlight. The ambient ozone concentrations recorded between 1997 and 2005 have ranged from 9 to 11 parts per hundred millions (pphm). The entire Salton Sea air basin is classified as moderate non-attainment for the state 1-hour ozone air quality standard, and as transitional non-attainment for the federal 1-hour and marginal non-attainment for the federal 8-hour ozone standards. However, the local area did not experience any violations of the federal ozone air quality standards.

Nitrogen Dioxide

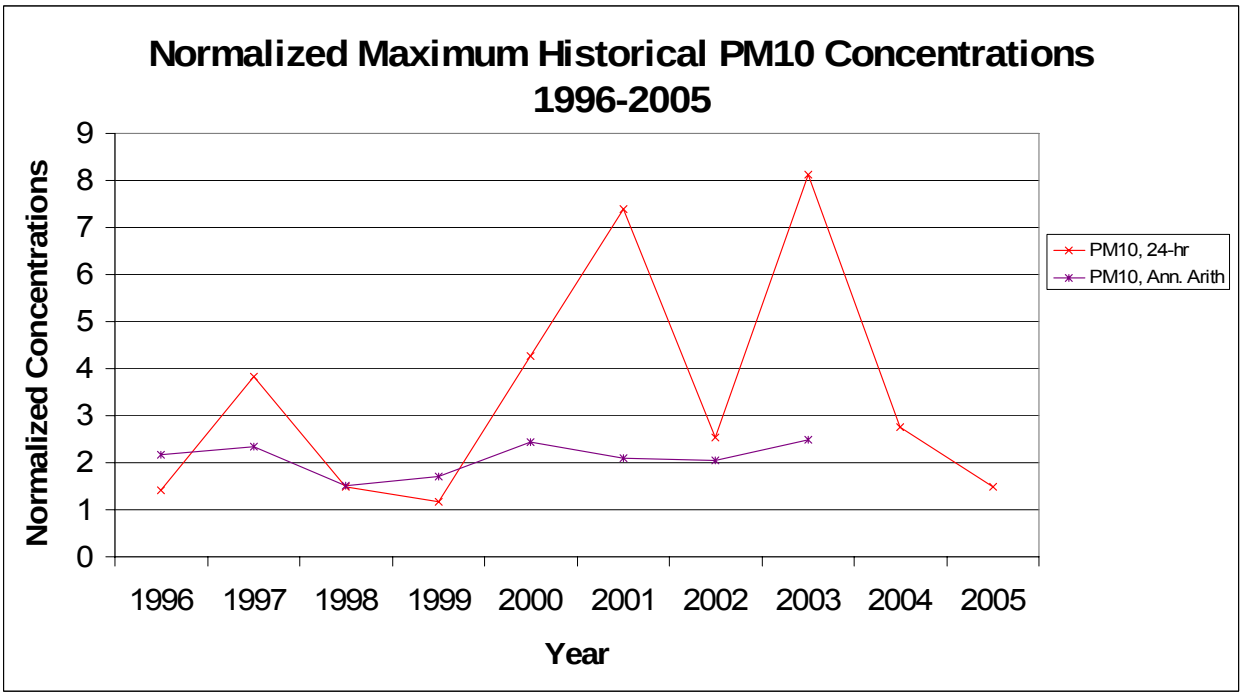
The entire air basin is classified as attainment for the state 1-hour NO_2 standard. The NO_2 levels in the area are no more than 40 percent of the most stringent NO_2 ambient air quality standards, as shown in AIR QUALITY Figure 1. Approximately 90 percent of the nitrogen oxides (NOx) emitted from combustion sources is NO, while the balance is NO_2. Together, NO and NO_2 are known as NOx. NO is oxidized in the atmosphere to NO_2, but some level of photochemical activity is needed for this conversion. The highest concentrations of NO_2 typically occur during the fall and not in the winter when atmospheric conditions favor the trapping of ground level releases but lack significant

AIR QUALITY Figure 1



Source: CARB web site, http://www.arb.ca.gov/adam/

AIR QUALITY Figure 2



Source: CARB web site, http://www.arb.ca.gov/adam/

photochemical activity (less sun light). In the summer the conversion rates of NO to NO_2 are high, but the relatively high temperatures and windy conditions disperse pollutants, preventing the accumulation of NO_2 to levels approaching the one-hour ambient air quality standard.

Carbon Monoxide

The area is classified as attainment for the state 1-hour and 8-hour CO standards. The CO concentration levels measured in the area show a slight downward trend (see AIR QUALITY Figure 1). The highest concentrations of CO occur when low wind speeds and a stable atmosphere trap the pollution emitted at or near ground level in what is known as the stable boundary layer. These conditions occur frequently in the wintertime late in the afternoon, persist during the night and may extend one or two hours after sunrise.

Particulate Matter (PM10)

The area is classified as a serious non-attainment area for the federal PM_{10} standard, and as non-attainment for the state PM_{10} standard. Measured concentrations of PM_{10} in the project area show that the area experiences a number of violations of the state and the federal 24-hour PM_{10} standards. Staff reviewed the ambient air quality and weather data and believes that these violations were caused by occasional dust storms rather than due to industrial activities. Excluding these dust storms' PM_{10} impacts would bring the area PM_{10} concentrations closer to the rest of California, which is much less severe than the measured data indicated. Regardless, staff treats the project PM_{10} emission impacts as cumulative additions to the already serious non-attainment status of the area.

Fine Particulate Matter (PM 2.5)

Fine particulate matter, or $PM_{2.5}$ (particulate matter less than 2.5 microns in diameter), is derived mainly from either the combustion of materials, or from precursor gases (SO_x, NO_x, and volatile organic compounds - VOC) through complex reactions in the atmosphere. $PM_{2.5}$ consists mostly of sulfates, nitrates, ammonium, elemental carbon, and a small portion of organic and inorganic compounds.

The U.S. EPA has promulgated a 65 $\mu g/m^3$ 24-hour $PM_{2.5}$ standard and a 15 $\mu g/m^3$ annual PM2.5 standard, and has recently classified the district as unclassified/attainment for both the federal annual and 24-hour $PM_{2.5}$ standards.

The CARB recently adopted a new annual $PM_{2.5}$ standard of 12 $\mu g/m^3$, but has not determined the attainment status of any district. The ARB also considered adopting a new 24-hour $PM_{2.5}$ standard, but deferred the adoption of such a standard until a later date.

Nitrates and Sulfates

PM nitrate (mainly ammonium nitrate) is formed in the atmosphere from the reaction of NO_x and ammonia. NO_x, as emitted from combustion sources, is mainly in the form of nitric oxide (NO). NO converts to NO_2 primarily by reacting with ozone in the ambient air. The formed NO_2 can convert back to NO, which sustains the ozone formation. NO_2 can also form organic nitrates, or be oxidized to nitric acid by available hydroxyl (OH)

radicals in the ambient air. Nitric acid reacts with ammonia in ambient air to form ammonium nitrate. Ammonium nitrate, in its particulate form, can remain suspended in the ambient air and/or be transported long distance downwind as $PM_{2.5}$. Ammonium nitrate, under certain conditions of heat and humidity, breaks down to NO_x and starts a new ozone cycle again.

PM sulfate (mainly ammonium sulfate) is formed in the atmosphere from the oxidation of SO_2 and subsequent neutralization by ammonia in the atmosphere. The oxidation of SO_2 depends on many factors, which include: the availability of hydroxyl (OH), hydroperoxy (HO_2) and methylperoxy (CH_3OH) radicals, and atmospheric humidity.

PROJECT DESCRIPTION

The proposed project consists of two General Electric (GE) LM6000 PD SPRINT NxGen combustion turbine generators (CTGs) with inlet air chillers, one 175 hp diesel fuel emergency fire pump engine, and one 1500 hp natural gas-fired black start engine.

The turbines, operating in simple cycle mode, would produce approximately 93 MW of electricity. The two turbines combined would operate up to 6,200 hours per year (IID2006a, pp. 6.1-12). The applicant proposes to equip each combustion turbine with dry Lo-NOx emission combustor and selective catalytic reduction (SCR) systems to limit the NO_x emissions to 2.5 ppm@15 percent O_2 (IID2006a, App.G, pp. G-4). The applicant also proposes to install a CO oxidation catalyst system on each turbine to limit CO emissions to no more than 6 ppm (IID2006a, App.G, pp. G-4).

The applicant requests that the project be analyzed with the assumption of 250 start-up and shutdowns for each turbine each year (IID2006a, pp. 6.1-12). Using the proposed normal operation hours and the proposed start-up and shut down hours, the applicant has provided an estimate of the facility's emissions. The facility's expected maximum hourly, daily and annual emissions for NOx, VOC, PM10, SOx and CO are tabulated in AIR QUALITY Table 4 below.

ASSESSMENT OF IMPACTS AND DISCUSSION OF MITIGATION

Staff assesses three kinds of impacts: construction, operational, and cumulative effects. Construction impacts result from the emissions occurring during the site preparation and construction of the project. The operational impacts result from the emissions of the proposed project during normal operation, which include maintenance, start-ups and shutdowns. Cumulative impacts result from the proposed project's incremental effect viewed over time, together with other closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project. (Pub. Resources Code § 21083; Cal. Code Regs., tit. 14, §§ 15064(h), 15065(c), 15130, and15355.)

AIR QUALITY Table 4
Facility's Maximum Hourly, Daily and Annual Emissions

Equipment	NOx	VOC	SOx	CO	PM_{10}[1]
Maximum Hourly Emissions (lb/hr)					
Two Turbines, Fire Pump, Black Start engine[2]	82	24	1.7	56	6
Two Turbines (normal operation)	8	2.2	1.6	12	6
Total Hourly	**82**	**24**	**1.7**	**56**	**6**
Maximum Daily Emissions (lb/day)					
Entire facility[3]	581	86	40	523	146
Total Daily	**581**	**86**	**40**	**523**	**146**
Maximum Annual (ton/year)[4]					
Entire facility	16.67	4.07	2.65	21.99	9.68
Total Annual Emissions	**16.67**	**4.07**	**2.65**	**21.99**	**9.68**

Notes:
1. All PM10 emissions from natural gas combustion are treated as PM2.5 (California Emission Inventory and Reporting System, CARB).
2. The turbine maximum hourly emissions occur during maintenance, which are approximately 40 lbs/hr per turbine. The maximum hourly emissions include two turbines operating in maintenance mode, and the emissions from testing of the fire pump engine and the black start engines.
3. The daily emissions include 4 start-ups and shut downs for both turbines, and testing of the diesel black start engine or the diesel fire pump engine.
4. The facility annual emissions include 500 startups/shutdowns (equivalent to approximately 200 hours), and 2,980 hours of normal operation, and 20 hours of maintenance for each turbine.

Source: SPPE Section 6.1.2 (IID2006a).

Following is the Environmental Checklist that identifies potential impacts in this issue area. Below the checklist are discussions of each impact, and an explanation of the impact conclusion.

ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
AIR QUALITY – Would the project:				
A. Conflict with or obstruct implementation of the applicable air quality plan? Ozone Plan PM_{10} Plan Carbon Monoxide Plan		 X X	 X	
B. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		x		
C. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?		x		
D. Expose sensitive receptors to substantial pollutant concentrations?		x		
E. Create objectionable odors affecting a substantial number of people?			x	

METHOD FOR DETERMINING SIGNIFICANCE AND MITIGATION

There are two criteria that staff used to determine whether the project emissions would be significant. The first is the status of the ambient air quality standards in the area. Staff considered that all non-attainment air contaminants and their precursors released during the construction and operation of this facility are significant and must be mitigated appropriately. For example, the area is currently non-attainment for ozone and PM_{10}; therefore, all directly emitted PM_{10}, and PM_{10} and ozone precursors (NOx, VOC, SOx) that the facility released during construction and operation will potentially cause significant impact through their contribution to the existing violations of the standards and interfere with applicable air quality plan. The second criterion that staff uses is whether the project's construction and operational emissions would cause a new violation to the ambient air quality standards.

Following the above steps, staff determines whether these potential contributions are sufficiently mitigated by the use of control measures or emission reduction credits, or both.

A. Will the Project Conflict With, or Obstruct Implementation of the Applicable Air Quality Plan: Less Than Significant With Mitigation Incorporated

The proposed project is located in Imperial County, which is in the Salton Sea Air Basin and is under the jurisdiction of the Imperial County Air Pollution Control District. The Salton Sea Air Basin is designated as non-attainment for both federal and state ozone and PM_{10} standards. All other federal and state criteria air contaminants (NO_2, CO, $PM_{2.5}$ and SO_2) are considered to be either attainment by the state and/or unclassified/attainment by federal standards.

The District is the lead agency for making expeditious progress toward attainment with air quality standards within the air basin. The District is responsible for developing those portions of the State Implementation Plan (SIP), and the Air Quality Management Plan (AQMP) that deal with certain stationary and area source controls. The California Air Resources Board is responsible for submitting the SIP to USEPA.

Ozone

The project will be required to comply with all applicable District rules and regulations, which specify the emissions control and offset requirements. The project will employ BACT and emission reduction credits to fully mitigate its operational emissions of NOx and VOC. Therefore, the project would not conflict with the District's ozone attainment plan.

PM10

The project will be required to comply with all applicable District rules and regulations, which specify the emissions control and offset requirements. For construction activities, the project will need to comply with the District Regulation VIII, which sets the standard practices to reduce PM_{10} emissions from fugitive dust sources and construction equipment. Staff also recommends the implementation of

construction related control measures **AQ-SC1** to **AQ-SC5** (see the Construction Impacts Section), which are intended to supplement the District's Rules and Regulations and to minimize the construction activities related PM_{10} emissions to the maximum extent feasible. The project will also employ BACT and emission reduction credits to fully mitigate its PM_{10} operational emissions. Therefore, the project would not conflict with the District's PM_{10} attainment plan.

Carbon Monoxide

The project's maximum worst case CO emissions impacts were analyzed using regulatory approved modeling techniques (see the Impacts Section). The results of this analysis show that the project would not cause a new violation to any CO ambient air quality standards. Therefore, the project would not conflict with or obstruct to the District CO attainment maintenance plan.

B. Will the Project Cause New Violations or Contribute to An Existing Violations of the AQ Standards: Less Than Significant With Mitigation Incorporated

The applicant has used an EPA-approved ISCST3 model to estimate the impacts of the project's NOx, PM_{10}, CO, and SOx emissions resulting from project construction and operation. A description of the modeling analysis and its results are provided in Section 6.1.2.3 of the application for SPPE (IID2006a). Staff added the applicant's modeled impacts to the highest ambient background concentrations recorded during the previous five years from nearby monitoring stations. Staff then compared the results with the ambient air quality standards for each respective air contaminant to determine whether the project's emission impacts would cause a new violation of the ambient air quality standards or would contribute to an existing violation.

The ambient air quality standards that staff uses as a basis for determining project significance are health-based standards. They are set at levels to adequately protect the health of all members of the public, including those most sensitive to adverse air quality impacts, such as the aged, people with existing illnesses, and infants and children, while providing a margin of safety.

In general, the inputs for the modeling include stack information (exhaust flow rate, temperature, and stack dimensions), specific turbine emission data and meteorological data, such as wind speed, atmospheric conditions, and site elevation. For this project, the meteorological data used as inputs to the model included hourly wind speeds and directions measured a quarter mile north of the project site.

Construction Impacts

The results of the project's construction impacts analysis are presented in AIR QUALITY Table 4. The modeling analysis included both the fugitive dust and vehicle exhaust emissions, which include PM_{10}, NO_x, and CO. In AIR QUALITY Table 4, the first and second columns list the air contaminant, i.e., NO_2, PM10, and CO, and the averaging time for each air contaminant analyzed. The third column presents the project emission impacts, and the fourth column presents the highest measured concentration of the criteria air contaminants in the ambient air (background). The

fifth column presents the total impact, i.e., the sum of project emission impact and background measured concentration.

As shown by the modeling results provided in AIR QUALITY Table 4, all of the worst-case emission impacts expected during the construction period, except PM10, are predicted to be lower than the most stringent ambient air quality standard and, therefore, are not significant. The construction PM_{10} impacts would contribute to existing violations of the area ambient air quality standards for PM10; therefore, the project construction impacts on the area's PM_{10} air quality are significant.

AIR QUALITY Table 4
Maximum Project Construction Impacts

Pollutants	Avg. Period	Impacts ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total Impact ($\mu g/m^3$)	State Standard ($\mu g/m^3$)	Percent of Standard
NO_2	1-hr.	260	180	440	470	94%
CO	8-hr.	886	8,131	9,017	10,000	90%
PM_{10}	24-hr.	44	406	450	50	**900%**

Source: Application for SPPE, Table 6.1-17 (IID2006a).

While the modeling results show that the worst-case 24-hour maximum fence line concentration would contribute to existing violations of the PM_{10} standards, the modeled PM_{10} concentrations are predicted to decrease quickly with distance and are predicted to be less than 0.5 $\mu g/m^3$ at the nearest residential receptor. Staff concludes that with appropriate mitigation, such as those from the District, those proposed by the applicant, and staff recommended mitigation measures (see the Construction Impact Mitigation section), the construction emission impacts would be less than significant.

Construction Impacts Mitigation

To mitigate the impacts due to construction of the facility, staff recommends the implementation of mitigation measures contained in Conditions of Exemption **AQ-SC1** to **AQ-SC5**. As mentioned earlier, these conditions are intended to supplement the District Regulation VIII requirements and include all of the applicant's proposed mitigation measures, and are listed below:

a) All unpaved roads and disturbed areas in the project and linear construction sites will be watered until sufficiently wet to ensure that no visible dust plumes leave the project site.

b) Vehicle speeds will be limited to 10 miles per hour within the construction site.

c) All construction equipment vehicle tires will be washed or cleaned free of dirt prior to entering paved roadways.

d) Gravel ramps will be provided at the tire washing/cleaning station.

e) All entrances to the construction site will be graveled or treated with water or dust soil stabilization compounds.

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

g) All paved roads within the construction site will be swept twice daily when construction activity occurs.

h) At least the first 500 feet of any public roadway exiting from the construction site will be swept at least twice daily on days when construction activity occurs, and twice daily on any other day when dirt or runoff from the construction site is visible on the public roadways.

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

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

k) Wind erosion control techniques such as windbreaks, water, chemical dust suppressants, and vegetation will be used on all construction areas that may be disturbed. Any windbreaks used will remain in place until the soil is stabilized or permanently covered with vegetation.

l) Any construction activities that may cause excessive fugitive dust will cease when the wind exceeds 25 miles per hour unless water, chemical dust suppressants, or other measures have been applied to reduce dust such that no visible dust leaves the project site.

m) All diesel-fueled construction equipment would use ultra-low sulfur diesel fuel, and would be equipped with low emission diesel engines and, if appropriate, soot filters.

Operation Impacts

The applicant has provided a modeling analysis using the EPA-approved ISCST3 model to estimate the impacts of the project's NOx, PM_{10}, CO, and SOx emissions resulting from project operation (IID2006a).

Similar to the assessment of construction impacts, staff added the modeled impacts to the available highest ambient background concentrations recorded during the previous five years from nearby monitoring stations to assess the project operational impacts.

Staff tabulated the results of the modeling analysis for turbines, black start engine, and fire pump engine, including steady state and start-up/maintenance events in AIR

QUALITY Table 5. The analysis shows that the project does not cause any new violations of NO_2, CO or SO_2 air quality standards, even combined with the worst case ambient concentrations recorded. The project, however, would contribute to existing violations of the state and the federal 24-hour and annual PM_{10} air quality standards. The project's impacts on the area's PM_{10} air quality are significant.

AIR QUALITY Table 5
Project Operation Emission Impacts

Pollutants	Avg. Period	Impacts ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total Impacts ($\mu g/m^3$)	Standard ($\mu g/m^3$)	Percent of Standard
NO_2	1-hour (worst case[1])	142	180	322	470[2]	69%
	1-hour (steady state)	14.2	180	194	470[2]	41%
	Annual	0.1	35.9	36	100[3]	36%
SO_2	1-hour	4.1	68.1	72.2	655[2]	11%
	24-hour	0.4	28.8	29.2	105[2]	28%
CO	1-hour (worst case)	198	18,400	18,598	23,000[2]	81%
	8-hour	17.4	8,131	8,148	10,000[2]	81%
PM_{10}	24-hour	1.3	406	407	50[2]	**800%**
	Annual	0.05	48	48	20[2]	**240%**
$PM_{2.5}$	24-hour	1.3	55.4	56.7	65[3]	87%
	Annual	0.1	N/A	N/A	12[2]	N/A

[1] Worst case emission impacts include two turbines running in maintenance mode, the black start engine and fire pumps are all running simultaneously.
[2] State standards
[3] Federal standards
Source: SPPE Section 6.1 (IID2006a)).

The project's gaseous emissions of NOx, SO_2, VOC and ammonia can contribute to the formation of the secondary pollutants, ozone and PM_{10}. There are air dispersion models that can be used to quantify ozone impacts, but they are used for regional planning efforts where hundreds or even thousands of sources are input into the modeling to determine ozone impacts. No regulatory agency models are approved for assessing single source ozone impacts. However, because of the known relationship of NOx and VOC emissions to ozone formation, it can be said that the emissions of NOx and VOC from the project have the potential (if left unmitigated) to contribute to higher ozone levels in the region.

Secondary PM_{10} formation is the process of conversion of gaseous reactants, or precursors, to particulate compounds. The process of gas-to-particulate conversion is complex and depends on many factors, including local humidity and the presence of other compounds. Currently, there are no agency (EPA or CARB) recommended models or procedures for estimating nitrate or sulfate formation. Nitrogen oxides first react to form nitric acid, which then reacts reversibly with ammonia to form ammonium nitrate. Sulfur oxides first react to form sulfuric acid, which then react irreversibly to form ammonium bisulfate and ammonium sulfate. Because of the

known relationship of NOx and SO_2 emissions to secondary PM10 formation, these emissions, if left unmitigated, will contribute to higher PM10 levels in the region.

The ammonia emissions from the project come from the SCR system, which controls the NOx emissions, as unreacted ammonia, or “ammonia slip,” that remains in the exhaust after passing through the SCR catalyst system. While the ammonia emissions are recognized as a necessary by-product of the NOx control system, staff still encourages the applicant to control their ammonia slip emissions to the lowest possible extent, while maintaining the guaranteed NOx emission limit. CARB has indicated that districts should consider recommending an ammonia limit of 5 ppm for gas turbines (CARB 1999). This is the level proposed by the applicant and the level expected to be required by District.

Staff believes that mitigating the project’s criteria PM_{10} and its precursors would mitigate the potential for significant secondary pollutant impacts. The applicants proposed offset package is discussed further in the following section.

Mitigation

Ozone Precursors

Because the project's expected ozone precursor emissions can contribute to violations of the ozone air quality standards, the applicant proposes to mitigate these contributions of 20.9 tons of NOx and VOC with 27.52 tons of NOx and VOC emission reduction credits. These credits, represented by certificate number 2030P, 2977P, 4277P, 3055 and 4088P, are all owned by the applicant. Staff recommends the adoption of Conditions of Exemption **AQ-SC7** to verify that adequate amount of emission reduction credits would be provided on a timely basis to offset the new ozone precursor emissions generated by the operation of the facility. In addition, staff also recommends the adoption of Condition of Exemption **AQ-SC6** for record keeping and tracking of the project construction and operation. Staff believes that the proposed emission reduction credits would mitigate the project contribution to the ozone concentration to a level of less than significance.

PM10, PM2.5 and Precursors

The applicant proposes to mitigate the project’s 9.68 tons of PM10 emissions and 2.65 tons of SOx (for a total of 12.33 tons of PM10 and its precursors) contribution to the area by surrendering 9.27 tons of combustion related PM10 emission reduction credits (certificate numbers 1030P, 4280P, 3054 and 4091P) and 4.7 tons of fugitive dust emission reduction credits (certificate number 4483P). Thus for PM_{10}, the total amount of the surrendered emission reduction credits would be 13.97 tons, which exceed the new PM_{10} emissions expected to be generated by the facility (see **AQ-SC7**). Therefore, the project contribution to the area PM_{10} air quality would be mitigated to a level of less than significance.

As for $PM_{2.5}$, staff believes that the 9.27 tons of combustion related emission reduction credits would offset most of the project's new PM2.5 emission liability of 9.68 tons. Assuming a conservative 15 percent $PM_{2.5}$ from the fugitive dust 4.7 tons of emission reduction certificate would give an equivalent 0.7 tons of $PM_{2.5}$ credit.

This would adequately mitigate the remaining (9.68 - 9.27= 0.4, which is < 0.7) tons of $PM_{2.5}$ emissions liability of the project. Therefore, the project's $PM_{2.5}$ contribution to existing air quality in the area would be mitigated to a level of less than significance.

C. Will the Facility Result in Considerable Cumulative Increase: Less Than Significant with Mitigation Incorporated

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

This analysis is concerned with "criteria" air pollutants. Such pollutants have impacts that are usually (though not always) cumulative by nature. Rarely will a project cause a violation of a federal or state criteria pollutant standard. However, a new source of pollution may contribute to violations of criteria pollutant standards because of the existing background sources or foreseeable future projects. Air districts attempt to attain the criteria pollutant standards by adopting attainment plans, which comprise a multi-faceted programmatic approach to such attainment. Depending on the air district, these plans typically include requirements for air "offsets" and the use of "Best Available Control Technology" for new sources of emissions, and restrictions of emissions from existing sources of air pollution.

The applicant, in consultation with the District, has conducted a survey of projects within six miles of the project site that are either under construction, or have received permits to be built or operate in the foreseeable future. The survey results indicate that no such sources exist within the six miles radius of the proposed project site. Therefore, no additional cumulative air quality impact modeling analysis was performed, and no significant cumulative impacts are expected.

D. Will the Facility Expose Sensitive Receptors to Substantial Air Contaminant Concentrations: Less Than Significant With Mitigation Incorporated

For purposes of this analysis, sensitive receptors are defined as groups of individuals that may be more susceptible to health risks due to exposure to the project's emissions. Schools (public and private), day care facilities, convalescent homes, parks, and hospitals are of particular concern. The nearest sensitive receptor is the Niland Family Health Center, located about 0.5 miles southwest of the Project. The nearest residence is approximately 1,560 feet due east of the Project fence line.

Temporary Construction Emissions

As described earlier under impact issue "B," the proposed project would generate short-term, unavoidable emissions during its construction. As a result, nearby residential may experience short-term adverse air quality impacts, if mitigation measures were not incorporated. However, through the implementation of the suggested mitigation measures and Conditions of Exemption (**AQ-SC1** to **AQ-SC5**) during construction, it is assumed that the project would not result in any significant air quality impacts.

Operational Emissions

As described earlier under impact issue "B," operation of the proposed project would emit a substantial level of criteria air contaminant emissions. However, these emissions of would be fully mitigated by the applicant's surrender of emission reduction credits through the District's NSR permitting program. The pollutant impact modeling did not show that any substantial pollutant concentrations would occur at any receptor location for any of the proposed operating scenarios. As a result, staff concludes that the criteria pollutant emissions generated from this project would not cause any significant air quality impacts to sensitive receptors.

E. Will the Project Create Objectionable Odors: Less than Significant Impact

In general, construction activities do not create strong or objectionable odors. There may be minor odors associated with the use or refueling of the diesel and gasoline powered equipment, or from painting or other surface treatments (i.e. building roofing or roadway paving). In addition, the closest residential receptor is located over one-quarter mile from the proposed site and the nearest sensitive receptor is located over three-quarter of a mile from the proposed site, which will allow any objectionable construction odors to disperse substantially before reaching residential or sensitive receptors. No significant impacts are expected from these temporary minor odor sources.

No odor impact is anticipated from the operation of the main power facilities, as no significant emissions of odorous compounds would result from the operation of the gas turbines, black start engine, or the fire pump engine under normal operations. The odor threshold for ammonia is approximately 5 to 10 ppm, and the stack emissions of ammonia for the gas turbine exhaust are expected to be limited to 5 ppm on a 1-hour basis. There is the potential for somewhat higher short-term ammonia emission concentrations (i.e. concentration spikes), particularly during startup, shutdown or during load swings. However, after dispersion the maximum ammonia concentrations at ground level will be well below the odor threshold. Odors resulting from accidents could occur; please see the **HAZARDOUS MATERIAL MANAGEMENT** section for further discussion of the consequence analysis of ammonia storage and handling accidents. No significant impacts are expected from the operation of the facility.

GREENHOUSE GAS REPORTING

In addition to regulated criteria pollutants, the combustion of fossil fuels produces air emissions known as greenhouse gases. These include carbon dioxide, nitric oxide and methane (e.g., unburned natural gas). Greenhouse gases are known to contribute to the warming of the earth's atmosphere. Climate change from rising temperatures represents a risk to California's economy, public health, and environment (CEC 2003). In 1998, the Energy Commission identified a range of strategies to prepare for an uncertain climate future, including a need to account for the environmental impacts associated with energy production, planning, and procurement (CEC 1998, p.5). In 2003, the Energy Commission recommended that the state should require reporting of greenhouse gas emissions as a condition of state licensing of new electric generating facilities (CEC 2003, p. 42). Staff recommends Condition of Exemption **AQ-SC8**, which requires the project owner to report the quantities of relevant greenhouse gases emitted as a result of electric power production. Such reporting would be done in accordance with accepted reporting protocols as specified.

The calculations specified in Condition of Exemption **AQ-SC8** are based on standard protocols developed by the Intergovernmental Panel on Climate Change, an international scientific body that is responsible for developing a common methodology for developing greenhouse gas inventories for all world governments to follow. The calculations are for those emissions associated with on-site fuel storage; all fuel combustion associated the power plant; and the associated emissions of the on-site power transformer equipment. The greenhouse gas emissions to be reported in Condition of Exemption **AQ-SC8** are carbon dioxide, methane, nitric oxide and sulfur hexafluoride emissions that are directly associated with the production and transmission of electric power.

The Intergovernmental Panel on Climate Change-approved methodology for calculating the greenhouse gas emissions in an inventory is particular to the type of fossil fuel burned. The oxidation factors, fuel-based emission factors and global warming potential factors are established by the Intergovernmental Panel on Climate Change in their Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual (IPCC 1996).

RESPONSES TO PUBLIC AND AGENCY COMMENTS

No comments have been received as of this writing.

CONCLUSIONS

- Staff concludes that with appropriate mitigation the proposed Niland small power plant project would not result in significant air quality impacts.
- The applicant is proposing to fully mitigate all of the project's new emissions with banked emission reduction credits, which would be in place prior to construction of the facility.

- In order to mitigate potentially significant PM_{10} construction emission impacts, staff recommends the Conditions of Exemption **AQ-SC1** through **AQ-SC5** to mitigate the project's construction equipment emissions and fugitive dust emissions to less than significant levels.
- Staff recommends Conditions of Exemption **AQ-SC6** and **AQ-SC7** to enhance staff ability to verify that all permits and emission reduction credits are properly provided.
- Staff recommends the addition of Condition of Exemption **AQ-SC8** to require greenhouse gas reporting.

CONDITIONS OF EXEMPTION

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

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

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

Verification: At least 60 days prior to the start of any ground disturbance, the project owner shall submit the AQCMP to the District for approval. The District will notify the project owner of any necessary modifications to the plan within 30 days from the date of receipt.

AQ-SC3 Construction Fugitive Dust Control: The AQCMM shall submit documentation to the District in each Monthly Compliance Report (MCR) that demonstrates compliance with the following mitigation measures for the purposes of preventing all fugitive dust plumes from leaving the Project. Any deviation from the following mitigation measures shall require prior District notification and approval.

a) All unpaved roads and disturbed areas in the project and linear construction sites shall be watered as frequently as necessary to comply

with the dust mitigation objectives of AQ-SC4. The frequency of watering can be reduced or eliminated during periods of precipitation.

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

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

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

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

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

g) All construction vehicles shall enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the District.

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

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

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

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

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

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

Verification: The project owner shall include in the Monthly Compliance Report (MCR):

(1) a summary of all actions taken to maintain compliance with this condition,

(2) copies of any complaints filed with the District in relation to project construction, and

(3) any other documentation deemed necessary by the District and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC4 Dust Plume Response Requirement: The AQCMM or an AQCMM Delegate shall monitor all construction activities for visible dust plumes. Observations of visible dust plumes that have the potential to be transported (1) off the project site or (2) 200 feet beyond the centerline of the construction of linear facilities or (3) within 100 feet upwind of any regularly occupied structures not owned by the project owner indicate that existing mitigation measures are not resulting in effective mitigation. The AQCMP shall include a section detailing how the additional mitigation measures will be accomplished within the time limits specified. The AQCMM or Delegate shall implement the following procedures for additional mitigation measures in the event that such visible dust plumes are observed:

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

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

Step 3: The AQCMM or Delegate shall direct a temporary shutdown of the activity causing the emissions if step 2 specified above fails to result in effective mitigation within one hour of the original determination. The activity shall not restart until the AQCMM or Delegate is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes will not result upon restarting the shutdown source. The owner/operator may appeal to the District any directive from the AQCMM or Delegate to shut down an activity, provided that the shutdown shall go into effect within one hour of the original determination, unless overruled by the District before that time.

Verification: The project owner shall include in the Monthly Compliance Report (MCR):

(1) a summary of all actions taken to maintain compliance with this condition,

(2) copies of any complaints filed with the air district in relation to project construction, and

(3) any other documentation deemed necessary by the District and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

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

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

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

c) All construction diesel engines, which have a rating of 100 hp or more, shall meet, at a minimum, the Tier 2 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, section 2423(b)(1) unless certified by the on-site AQCMM that such engine is not available for a particular item of equipment. In the event a Tier 2 engine is not available for any off-road engine larger than 100 hp, that engine shall be equipped with a Tier 1 engine. In the event a Tier 1 engine is not available for any off-road engine larger than 100 hp, that engine shall be equipped with a catalyzed diesel particulate filter (soot filter), unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types. For purposes of this condition, the use of such devices is "not practical" if, among other reasons:

(1) There is no available soot filter that has been certified by either the California Air Resources Board or U.S. Environmental Protection Agency for the engine in question; or

(2) The construction equipment is intended to be on-site for ten (10) days or less.

(3) The District may grant relief from this requirement if the AQCMM can demonstrate that they have made a good faith effort to comply with this requirement and that compliance is not possible.

d) The use of a soot filter may be terminated immediately if one of the following conditions exists, provided that the District is informed within ten (10) working days of the termination:

(1) The use of the soot filter is excessively reducing normal availability of the construction equipment due to increased downtime for

maintenance, and/or reduced power output due to an excessive increase in backpressure.

(2) The soot filter is causing or is reasonably expected to cause significant engine damage.

(3) The soot filter is causing or is reasonably expected to cause a significant risk to workers or the public.

(4) Any other seriously detrimental cause which has the approval of the District prior to the termination being implemented.

e) All heavy earthmoving equipment and heavy duty construction related trucks with engines meeting the requirements of (c) above shall be properly maintained and the engines tuned to the engine manufacturer's specifications.

f) All diesel heavy construction equipment shall not remain running at idle for more than five minutes, to the extent practical.

Verification: The project owner shall include in the MCR:

(1) a summary of all actions taken to maintain compliance with this condition,

(2) copies of all diesel fuel purchase records,

(3) a list of all heavy equipment used on site during that month, including the owner of that equipment and a letter from each owner indicating that equipment has been properly maintained, and

(4) any other documentation deemed necessary by the District and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC6 The project owner shall provide the Energy Commission Compliance Project Manager (CPM) copies of all District issued Authority-to-Construct (ATC) and Permit-to-Operate (PTO) for the facility.

The project owner shall submit to the CPM for review and approval any modification proposed by the project owner to any project air permit. The project owner shall submit to the CPM any modification to any permit proposed by the District or U.S. EPA, and any revised permit issued by the District or U.S. EPA, for the project.

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

AQ-SC7 The project owner shall surrender 26.24 tons of NOx ERC, 1.28 tons of VOC ERC, 9.27 tons of combustion-derived PM_{10} ERC, and 4.7 tons of general PM_{10} ERC, prior to start of construction of the project.

Verification: The project owner shall submit to the CPM a copy of all ERC to be surrendered to the District at least 30 days prior to start construction.

AQ-SC8 If the project owner does not participate in the voluntary California Climate Action Registry, then the project owner shall report on a quarterly basis to the CPM the quantity of greenhouse gases (GHG) emitted as a direct result of facility electricity production as follows:

The project owner shall maintain a record of fuel use in units of million-Btus (mmBtus) for all fuels burned on site for the purpose of power production. These fuels shall include but are not limited to: (1) all fuel burned in the combustion turbines, (2) HRSGs (if applicable) or auxiliary boiler (if applicable), and (3) all fuels used in any capacity for the purpose of turbine startup, shutdown, operation or emission controls.

The project owner may perform annual source tests of CO_2 and CH_4 emissions from the exhaust stacks while firing the facility's primary fuel, using the following test methods or other test methods as approved by the CPM. The project owner shall produce fuel-based emission factors in units of lbs GHG per mmBtu of fuel burned from the annual source tests. If a secondary fuel is approved for the facility, the project owner may also perform these source tests while firing the secondary fuel.

Pollutant	Test Method
CO_2	EPA Method 3A
CH_4	EPA Method 18 (VOC measured as CH_4)

As an alternative to performing annual source tests, the project owner may use the Intergovernmental Panel on Climate Change (IPCC) Methodologies for Estimating Greenhouse Gas Emissions (MEGGE). If MEGGE is chosen, the project owner shall calculate the CO_2, CH_4 and N_2O emissions using the appropriate fuel-based carbon content coefficient (for CO_2) and the appropriate fuel-based emission factors (for CH_4 and N_2O).

The project owner shall convert the N_2O and CH_4 emissions into CO_2 equivalent emissions using the following IPCC Global Warming Potentials (GWP): 310 for N_2O (1 pound of N_2O is equivalent to 310 pounds of CO_2) and 21 for CH_4.

The project owner shall maintain a record of all SF_6 that is used for replenishing on-site transformers. At the end of each reporting period, the project owner shall total the mass of SF_6 used and convert that to a CO_2 equivalent emission using the IPCC GWP of 23,900 for SF_6.

On a quarterly basis, the project owner shall report the CO_2 and CO_2 equivalent emissions from the described emissions of CO_2, N_2O, CH_4 and SF_6.

Verification: Any greenhouse gas emissions that are reported by the project owner to the California Climate action Registry or pursuant to this condition shall be reported to the CPM as part of the fourth Quarterly or the annual Air Quality Report.

REFERENCES

IID2006a – Imperial Irrigation District/j. federowicz (tn:36510). Submittal of the Application for Small Power Plant Exemption for the Niland Gas Turbine Plant Dated 03/13/06. Submitted to CEC/B.B. Blevins,/Dockets on 03/13/06.

IID2006f – Imperial Irrigation District/Niland–URS (tn:36630) Submittal of Application for Authority to Construct Dated 3/01/06. Submitted to Dockets on 3/23/06.

IID2006g – Imperial Irrigation District/URS (tn:36849) First Round Data Responses Dated 04/25/06. Submitted to Dockets on 04/26/2006.

CEC 1998 - California Energy Commission 1997 Global Climate Change, Greenhouse Gas Emissions Reduction Strategies for California, Volume 2, Staff Report. 1998.

CEC 2003 - California Energy Commission 2003 Integrated Energy Policy Report. December.

IPCC 1996 - Intergovernmental Panel on Climate Change Revised 1996 IPCC Guide lines for National Greenhouse Gas Inventories: Reference Manual. September 10, 1996.

BIOLOGICAL RESOURCES

Testimony of Joanna Reinhardt

INTRODUCTION

This section of the Final Initial Study analyzes the potential impacts to biological resources from the construction and operation of the proposed Niland Gas Turbine Plant (NGTP) located in Imperial County, California. The primary focus is on potential impacts to state and federally listed species, species of special concern, riparian areas, wetlands, and other areas of critical biological concern. This document presents information regarding the affected biotic community, the potential environmental impacts associated with the construction and operation of the proposed project, and where necessary, specific mitigation planning and compensation measures to reduce potential impacts to less than significant levels.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

The applicant will need to abide by the following laws, ordinances, regulations, and standards during project construction and operation as listed in **BIOLOGICAL RESOURCES Table 1**.

BIOLOGICAL RESOURCES Table 1
Laws, Ordinances, Regulations, and Standards

Applicable Law	Description
Federal	
Federal Endangered Species Act	Title 16, United States Code, section 1531 *et seq.*, and Title 50, Code of Federal Regulations, part 17.1 *et seq*., designates and provides for protection of threatened and endangered plant and animal species, and their critical habitat.
Migratory Bird Treaty Act	Title 16, United States Code, sections 703 through 711, makes it unlawful to take or possess any migratory nongame bird (or any part of such migratory nongame bird) as designated in the Migratory Bird Treaty Act.
Clean Water Act	Title 33, United States Code, sections 1251 through 1376, and Code of Federal Regulations, part 30, section 330.5(a)(26), requires the permitting and monitoring of all discharges to surface water bodies. Section 404 requires a permit from the U.S. Army Corps of Engineers for a discharge from dredged or fill materials into waters of the U.S., including wetlands. Section 401 requires a permit from a regional water quality control board for the discharge of pollutants.
State	
California Endangered Species Act of 1984	Fish and Game Code, sections 2050 through 2098, protects California's rare, threatened, and endangered species.
California Code of Regulations	California Code of Regulations Title 14, Division 1, Subdivision 3, Chapter 3 sections 670.2 and 670.5, lists the plants and animals of California that are declared rare, threatened, or endangered.
Fully Protected Species	Fish and Game Code, sections 3511, 4700, 5050, and 5515, designates certain species as fully protected and prohibits the take of such species or their habitat unless for scientific purposes (see also California Code of Regulations Title 14, Division 1, Subdivision 3, Chapter 3, section 670.7).
Nest or Eggs	Fish and Game Code section 3503 protects California's birds by making it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird.
Migratory Birds	Fish and Game Code section 3513 protects California's migratory birds by making it unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame birds.
Significant Natural Areas	Fish and Game Code section 1930 *et seq.* designates certain areas such as refuges, natural sloughs, riparian areas, and vernal pools as significant wildlife habitat.
Native Plant Protection Act of 1977	Fish and Game Code section 1900 et *seq.* designates state rare, threatened, and endangered plants.
Local	
Imperial County General Plan	Imperial County adopted the Conservation and Open Space Element of the County General Plan in 2003. The purpose of the biological resources portion of this element is to conserve

	environmental resources, including biological resources, while encouraging economic development and growth (Imperial County 2003). The intent of the document is to ensure that the range of environmental resources (Biological Resources, Cultural Resources, Soils; Minerals, Energy, Regional Aesthetics; Air Quality and Open Space) available to future generations is not limited.

SETTING

The proposed NGTP will be located approximately one mile northeast of the town of Niland in Imperial County. The region has very hot summers and mild winters. It is located in the Salton Trough, which is as much as 105 feet below sea level and extends from the Coachella Valley southward into Mexico. The project site has agricultural lands to the south and west. Two areas that support sensitive resources are the Salton Sea (approximately five miles west) and the Imperial State Wildlife Refuge – Wister Unit (five miles northwest). Approximately 10 miles east of the project site is natural desert habitat. The surrounding areas are fragmented by a series of irrigation canals (Coachella Canal and East Highline Canal) and drainage ditches. Other land disturbance activities occurring in the surrounding areas include off-road vehicle use and military activities.

Due to the variety of land disturbances, much of the natural vegetation has been eliminated or greatly reduced in the region. Conversion to agricultural crops and urbanization has fragmented much of the historic habitat and eliminated native species from much of their historical ranges. Although agricultural areas replaced native habitats over a century ago, habitat opportunities for a variety of sensitive species such as the burrowing owl (*Athene cunicularia*), desert pupfish (*Cyprinodon macularius*), Colorado River toad (*Bufo alvarius*), and two birds, the California black rail (*Laterallus jamaicensis coturniculus*) and Yuma clapper rail (*Rallus longirostris yumanensis*), still exist in the region (IID2006a) and are the subject of our attention in the following analysis. A complete list of the sensitive species that are known to occur within the vicinity of the proposed NGTP is contained in **BIOLOGICAL RESOURCES Table 2**.

BIOLOGICAL RESOURCES Table 2
Potentially Occurring Special-Status Species in the Site Vicinity

Common Name	Scientific Name	STATUS*
PLANTS		
Abrams's spurge	*Chamaesyce abramsiana*	--/--/List 2
Sand food	*Pholisma sonorae*	--/--/List 1B
Munz's cholla	*Opuntia munzii*	--/--/List 1B
Peirson's milk-vetch	*Astragalus magdalenae* var. *peirsonii*	FT/SE/List 2
Giant Spanish-needle	*Palafoxia arida* var. *gigantea*	--/--/List 1B
Wiggin's croton	*Croton wigginsii*	--/--/List 2
Slender woolly-heads	*Nemacaulis denudate* var. *gracilis*	--/--/List 2
Algodones Dunes sunflower	*Helianthus niveus* ssp. *tephrodes*	--/SE/List 1B
Crown-of-thorns	*Koeberlinia spinosa* ssp. *tenuispina*	--/--/List 2
Coves' cassina	*Senna covesii*	--/--/List 2
Chaparral sand-verbena	*Abronia villosa* var. *aurita*	--/--/List 1B
BIRDS		
Mountain plover	*Charadruis montanus*	--/CSC
Yellow warbler	*Dendroica petechia brewsteri*	--/CSC
Southwestern willow flycatcher	*Empidonax traillii traillii*	--/SE
Yellow-breasted chat	*Icteria virens*	--/CSC
Crissal thrasher	*Toxostoma crissale*	--/CSC
Burrowing owl	*Athene cunicularia*	--/CSC
Yuma clapper rail	*Rallus longirostris yumanensis*	FE/ST
California black rail	*Laterallus jamaicensis*	--/ST
Ferruginous hawk	*Buteo regalis*	--/CSC
FISH		
Desert pupfish	*Cyprinodon macularius*	FE/SE
AMPHIBIANS		
Colorado River toad	*Bufo alvarius*	--/CSC
REPTILES		
Desert tortoise	*Gopherus agassizii*	FT/ST
Flat-tailed horned lizard	*Phrynosoma mcalli*	--/CSC

* Status Legend (Federal/State/CNPS lists, CNPS (California Native Plant Society) list is for plants only): FE = Federally-listed Endangered; FT = Federally-listed Threatened; FSC = Federal Species of Concern; FC = Candidate Species for Listing; SE = State-listed Endangered; ST = State-listed Threatened; CSC = California Species of Special Concern; FP = State Fully Protected; List 1B = CNPS rare or endangered in California and elsewhere; List 2 = CNPS rare or endangered in California, more common elsewhere; -- = not listed in that category.

Sources: California Natural Diversity Database (CNDDB 2006) and IID2006a

POWER PLANT FACILITY AND RELATED FACILITIES

The 26-acre project site will consist of a 22-acre permanent plant site and a four-acre temporary storage and lay-down area. The property is somewhat disturbed native soil and is relatively flat, having a gradual one percent gradient from northeast to southwest. The project site has existing swales and channels incised by past surface stormwater runoff that are generally less than one foot in depth (IID2006a).

Stormwater runoff from the property is not controlled and naturally flows in a southwesterly direction during storm events. Site grading and earthwork activities will be

designed to direct stormwater on the project site away from equipment and buildings. Excavation of stormwater swales along the north and east borders of the facility will intercept surface flows and direct them through channels to new stormwater retention basins on site (IID2006a).

The habitat on site is somewhat disturbed, but has components of mixed Sonoran creosote bush scrub and desert saltbush scrub. The dominant species include creosote bush (*Larrea tridentata*), shadscale (*Atriplex confertifolia*), allscale (*A. polycarpa*), desert thorn (*Lycium* sp.), and burro-weed (*Ambrosia dumosa*). Within the open areas between the shrubs, annual plantain (*Plantago ovata*), red-stemmed filaree (*Erodium cicutarium*), and Mediterranean grass (*Schismus* sp.) are the dominant low-growing herb and grass species. A stand of salt cedar (*Tamarix* sp.) occurs along Cuff Road, located on the eastern edge of the project site. Other species observed include red brome (*Bromus rubens*), bush encelia (*Encelia frutescens*), and annual sowthistle (*Sonchus oleraceus*) (IID2006a).

A burrowing owl, which is a California species of special concern, was observed on IID property, approximately 150 feet away from the eastern border of the project site on March 31, 2005. Visual confirmation of the owl presence was conducted on April 4, 2005, using a fiber optic scope. The burrow was occupied by a breeding pair and at least one egg was observed. No other sensitive species were observed during reconnaissance level surveys of the project site (IID2006a). Staff visited the proposed project site on March 28, 2006, and was unable to make any independent observations regarding the presence of burrowing owls.

Natural Gas Pipeline

A new natural gas pipeline will be constructed along an existing right-of-way on the southern edge of the project site along Beal Road. The new pipeline will be approximately 1,800 feet in length and connect to an existing Southern California Gas pipeline. The habitat along the construction corridor is similar to that present on the project site - relatively natural mixed Sonoran creosote bush scrub and desert saltbush scrub (IID2006a).

Water Pipeline

Treated Colorado River water for power plant cooling will be supplied by Golden State Water Company, via a 12-inch mainline water pipe running diagonally northeast to southwest across the northern portion of the proposed power plant site. Water will be delivered to the project site through a new, buried eight-inch pipeline lateral that will connect to the 12-inch pipeline. By using treated water, and not groundwater, the project is not likely to negatively affect sensitive habitats, including nearby riparian areas.

Electric Transmission line

The project will connect to the 92-kilovolt bus at the adjacent Niland Substation, located in the southwestern corner of the project site. A new switchyard will be constructed to gather the output from the project and provide a point of interconnection to the Niland Substation. Existing transmission lines extend out from the substation along the south

and west sides of the property. The existing east-west distribution line, which runs along the south border of the project site, will be partially placed underground for the portion that is adjacent to the project site. A new interconnection between the new switchyard and existing substation will be accomplished via an overhead transmission line, approximately 520 feet in length (for more information refer to the **Transmission Systems Engineering** section).

IMPACTS

The following Environmental Checklist identifies potential impacts to biological resources. Following the table is a discussion of the potential impacts and a discussion of proposed mitigation measures, as necessary.

ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
BIOLOGICAL RESOURCES -- Would the project:				
A) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
B) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?				X
C) Have a substantial adverse effect on federally protected or jurisdictional wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X
D) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?		X		
E) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
F) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

A. Effect on Sensitive Species: Less than Significant With Mitigation Incorporated

The sensitive species listed in **BIOLOGICAL RESOURCES Table 2** are potentially found within five miles of the NGTP project site and at least one occupied burrowing owl burrow was on IID property, approximately 150 feet away from the eastern border of the project site (IID2006a, section 6.3). Staff visited the proposed project site on March 28, 2006, and was unable to make any independent observations regarding the presence of burrowing owls.

Although the proposed project site is degraded from its natural state, it still serves as foraging habitat for the burrowing owl and other raptors such as red-tailed hawks that have been observed overhead (IID2006a). During the site visit staff was unable to make any conclusions regarding the suitability of the proposed project site as foraging habitat.

The U.S. Fish and Wildlife Service (USFWS) communicated to Energy Commission staff that loud construction noise and activities could affect burrowing owls (USFWS 2006a). Thirty days prior to the start of initial ground disturbance activities, a preconstruction survey for burrowing owls should be completed. If any owls are encountered, measures should be taken to minimize impacts. Although the applicant proposed a 500-foot barrier from active burrowing owl burrows (Mitigation Measure BIO 1, IID2006a, pg. 6.3-40), USFWS recommends additional noise/visual barriers (e.g., haystacks or plywood fencing). An increase in noise levels due to construction could result in the abandonment of a nest or brood, therefore, a noise/visual barrier would provide additional protection. With the setback and noise/visual barriers in place, burrowing owls are less likely to be impacted by construction noise. Initial disturbance of the site should also occur outside the burrowing owl breeding season (September 1 through January 31) to ensure that no breeding birds, eggs, or chicks are harmed by construction activities. The applicant has proposed a schedule for construction activities for both the proposed power plant and linear facilities to occur outside the breeding season within the established areas (Mitigation Measure BIO 1, IID2006a, pg. 6.3-40) and staff concurs with their recommendation.

The state and federally protected desert tortoise (*Gopherus agassizii*) would not be impacted by the construction or operation of the NGTP. The closest occupied habitat is in the Chocolate Mountains, located approximately 10 miles east of the proposed project site. Historically, suitable habitat existed on the proposed project site, yet no desert tortoise occupies the area presently. The project site is separated from any currently occupied habitat by agricultural land uses, which are undesirable desert tortoise habitat. The project site is also isolated from the Chocolate Mountains by the East Highline Canal (located 0.2 miles northeast of the project site) and the Coachella Canal (located two miles east). The canals, which were both built in the 1940s (URS 2006), act as physical barriers for tortoise movement because they do not have any crossings that would allow for passage of individuals from the occupied habitat areas. Although desert tortoise may have inhabited the project site at one time, it is unlikely that a self-sustaining population is still in existence due to the canal system (CDFG 2006a, USFWS 2006a).

A California species of special concern, the flat-tailed horned lizard (*Phrynosoma mcalli*) is also not likely to be impacted by the construction and operation of the NGTP. Similar to the desert tortoise, the East Highline Canal is now a geographic barrier that separates the project site from the current population. If lizard populations did exist on the project site at one time, it is unlikely that they persist today due to the age of the canal systems and the barrier it poses to the species (CDFG 2006a, USFWS 2006a).

Other special-status species (**BIOLOGICAL RESOURCES Table 2**) have a low potential to occur on the project site. Suitable habitat is lacking on the project site to support sensitive plant and amphibian species. Many of the bird species are transients and will be only present during migration. Staff concludes these other special-status species would not be impacted by the construction and operation of the NGTP.

The applicant has suggested (IID 2006A) and staff agrees with the following incidental take minimization and avoidance measures:

- Preconstruction surveys prior to ground disturbing activities to ensure clearance of sensitive species.
- Environmental awareness training of all construction personnel to recognize sensitive habitat areas and sensitive species.
- Species-specific measures would be implemented if burrowing owls are encountered on site or if other sensitive species are found on site in preconstruction surveys that were not previously encountered.
- Burrowing owl species-specific measures include relocation following the CDFG guidelines (CDFG 1995). If one-way doors are used to exclude owls, the burrows will be monitored and hand excavated to ensure the individual has evacuated the burrow prior to ground disturbing activities. At least two artificial burrows would be constructed around the site for each active burrow used by a wintering or nesting burrowing owl.
- The applicant would prepare construction monitoring and compliance reports that analyze the effectiveness of the mitigation measures.

Implementing these mitigation (take minimization and avoidance) measures would reduce potential significant impacts of the proposed project and related linear facilities on sensitive species and are included in staff's Biological Resources Condition of Exemption (**BIO-1**).

B. Effect on Riparian Habitat or other Sensitive Natural Community: No Impact

Various habitat types exist within five miles of the proposed project site including an intricate system of drainage systems that are part of the Salton Sea watershed. The year-round availability of water and long growing season in the Imperial Valley have promoted and sustained aquatic, marsh, and riparian habitats in the valley, including the Imperial State Wildlife Area – Wister Unit and the East Highline Canal. However, the overall project would not affect any riparian habitat in the region. Stormwater runoff, when it does occur, is expected to be minimal and would be contained within

the stormwater retention basins (see **Water Resources**) (IID2006a). Staff, therefore, concludes there would be no impacts to any riparian habitats or other sensitive communities from the construction and operation of the proposed project.

C. Effect on Wetlands: No Impact

The applicant describes (IID 2006a) that the proposed project site does display hydrologic features that are likely continuous with watercourses that occur within watersheds to the east and north of the Coachella Canal and the Chocolate Mountains Gunnery Range. The Coachella and East Highline Canals have altered the natural drainage patterns of the project region; therefore, the drainages on site represent relics of historic hydrology and are not a current source of water that supports wetlands. Since no wetlands exist on the proposed project site or proposed natural gas pipeline route, staff concludes that the construction and operation of the proposed power plant would not have any impacts on wetlands.

D. Interference with Wildlife Movement: Less than Significant With Mitigation Incorporated

A breeding pair of burrowing owls was observed on IID property, approximately 150 feet away from the eastern border of the NGTP project site. The site is, therefore, used at least part of the year as a breeding ground. The applicant proposed mitigation measures that are consistent with the CDFG burrowing owl guidelines (1995) to reduce significant impacts (IID2006a). The measures include, but are not limited to, exclusion and relocation of any owls and the construction of two artificial burrows for each occupied burrow removed. Artificial burrows would be constructed adjacent to the site in berms (IID2006g, Data Response 3b). Both CDFG (2006b) and USFWS (2006a) agree with the proposed mitigation measures.

Without the incorporation of mitigation measures, the proposed NGTP could interfere with the movement of resident and migratory wildlife. By incorporating the mitigation measures, NGTP would have a less than significant impact.

E. Conflict with Local Biological Resource Policies or Ordinances: No Impact

The Imperial County General Plan (Imperial County 2003) includes a discussion of biological resources that focuses on conservation of environmental resources while encouraging economic development and growth. Staff concludes that the proposed project would not conflict with any local biological resources policies or ordinances.

F. Conflict with Adopted Habitat Protection Plans: No Impact

Staff identified the following habitat protection plans in Imperial County that may potentially affect the proposed project.

<u>California Desert Conservation Area (CDCA)</u> – The CDCA was created by the U.S. Department of the Interior to manage 25-million acres of desert habitat located on Bureau of Land Management (BLM) managed public lands (BLM 1980). The goal of the plan is to provide for the use of public lands and resources of the CDCA, including economic, educational, scientific, and recreational uses, in a manner that enhances whenever possible and does not diminish the environmental, cultural, and

aesthetic values of the desert and its productivity. Although the proposed power plant would be located within the CDCA boundaries, it would be built on private land and therefore not under BLM jurisdiction. Staff concludes the CDCA would not be applicable to this project and there will be no impact.

Imperial Irrigation District Habitat Conservation Plan (IID HCP) – The IID HCP is being developed for the water transfer project that is being implemented in its draft form as a condition for the State Water Resources Control Board permit that allows for water transfer with San Diego. Although the HCP is a work in progress, accomplishments to date include vegetation surveys of drains and desert right-of-ways and avoidance measures for burrowing owls. The general requirements of an Implementation Biologist and Implementation Team are in place. Other mitigation measures are still in the planning phases (USWFS 2006b). Since the project applicant has already indicated that they intend to implement mitigation procedures for burrowing owls (IID 2006g, Data Responses 3a & b), staff concludes that the proposed power plant project will not conflict with the IID HCP and there would be no impact.

Flat-tailed Horned Lizard (FTHL) Rangewide Management Strategy – The FTHL Rangewide Management Strategy would provide guidance for the conservation and management of sufficient habitat to maintain existing populations of FTHLs within five management areas located only on BLM managed public lands within Imperial County (FTHLICC 2003). Since the proposed power plant will be located on private land, and because no FTHLs have been observed at the project site, this management strategy would not be applicable to the project and there will be no impact.

CUMULATIVE IMPACTS

Cumulative impacts result from the incremental impacts of an action added to other past, present, and reasonably foreseeable future action, regardless of who is responsible for such actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time.

Sensitive species such as the desert tortoise and the flat-tailed horned lizard occur in the region and continual loss of habitat could be a cumulative impacts concern. The only additional project in the NGTP area is a proposed 244 single-family residential development on West 4th Street in the community of Niland. The proposal is in the early stages of environmental review and there is no estimate of when construction may begin (Imperial County 2006). Similar to the NGTP project site, suitable habitat is lacking on the proposed residential development to support sensitive biological resources so staff does not anticipate any cumulative impacts to biological resources from the proposed combination of the housing project and the construction and operation of the new power plant.

RESPONSE TO PUBLIC AND AGENCY COMMENTS

No comments were received.

CONCLUSION

Implementing the following Condition of Exemption, would result in less than significant impacts to biological resources from the proposed project or associated linear facilities.

CONDITION OF EXEMPTION

TAKE AVOIDANCE AND MINIMIZATION MEASURES

BIO-1 The project owner shall implement the following measures for the burrowing owl:

1. Complete a preconstruction survey for burrowing owls on the project site and linear facilities 30 days prior to the start of initial ground disturbance activities. If burrowing owls are present within 500 feet of the site or linear facilities, then the California Department of Fish and Game burrowing owl guidelines (1995) shall be implemented;

2. Establish a 500-foot set back from any active burrow and construct additional noise/visual barriers (e.g., haystacks or plywood fencing) to shield the active burrow from construction activities. Post signs (in both English and Spanish) designating presence of sensitive area;

3. If one-way doors are used to exclude burrowing owls, the burrows shall be monitored and hand excavated to ensure the individual has evacuated the burrow prior to ground disturbing activities, and

4. If a burrowing owl is occupying an active burrow within the project site or natural gas pipeline right-of-way and requires passive relocation, mitigation in the form of artificial burrows should be mitigated at a 2:1 ratio. Newly constructed artificial burrows should be installed in an adjacent protected area that provides a minimum of 6.5 acres per pair or solitary owl around the site (CDFG 2006b). Construction and installation of burrows should be done in consultation with CDFG.

For other sensitive species:

1. Complete a preconstruction survey immediately prior to any ground disturbing activities to ensure clearance of any sensitive species;

2. Provide environmental awareness training to all construction personnel to recognize sensitive habitat areas and sensitive species; and

3. Implement species specific avoidance and take minimization measures if a sensitive species is found on site. Measures that could be taken by a qualified biologist could include relocation of the animal as advised by CDFG and the U.S. Fish and Wildlife Service.

The project owner shall prepare an end of construction report that discusses sensitive species encountered, monitoring performed, mitigation measures implemented, and the success of those measures.

Verification: The project owner shall submit a report at least 14 days prior to the start of site mobilization to CDFG and USFWS that describes when surveys were completed, what was observed, mitigation measures, and the results of the measures. If artificial burrows need to be installed, the project owner shall coordinate with and report to CDFG on the number of new burrows, their locations and how the new wildlife will be protected for the life of the project. The end of the construction report shall be provided to the Energy Commission Compliance Project Manager, CDFG, and USFWS at least 30 days prior to commercial operation.

REFERENCES

BLM (Bureau of Land Management/U.S. Department of the Interior). 1980. California Desert Conservation Area. (www.blm.gov/ca/cdd)

CDFG (California Department of Fish and Game). 1995. Staff Report on Burrowing Owl Mitigation. 9 pp.

CDFG (California Department of Fish and Game). 2005. Proposed Planning Agreement by and among Imperial Irrigation District, The California Department of Fish and Game, and the United States Fish and Wildlife Service regarding the Imperial Valley Natural Community Conservation Plan and Habitat Conservation Plan, Planning Agreement No. 2810-2004-001-06.

CDFG (California Department of Fish and Game). 2006a. Personal communication by phone between Joanna Reinhardt and Jim Sheridan. May 2, 2006.

CDFG (California Department of Fish and Game). 2006b. Comment letter written by Kimberly Nicol in response to Application for Small Power Plant Exemption for the Niland Gas Turbine Plant. May 10, 2006.

CDFG (California Department of Fish and Game). 2006c. California Natural Diversity Data Base RAREFIND data base search results for Niland USGS 7.5-minute quadrangle. January 2006 government edition.

FTHLICC (Flat-tailed Horned Lizard Interagency Coordinating Committee). 2003. Flat-tailed horned lizard rangewide management strategy, 2003 revision. 78 pp.

IID2006a – Imperial Irrigation District/j. federowicz (tn:36510). Submittal of the Application for Small Power Plant Exemption for the Niland Gas Turbine Plant Dated 03/13/06. Submitted to CEC/B.B. Blevins/Dockets on March 13, 2006.

IID2006g – Imperial Irrigation District/URS (tn:36849) First Round Data Responses Dated 04/25/06. Submitted to Dockets on April 26, 2006.

Imperial County. 2003. *Conservation and Open Space Element*, Imperial County General Plan, Adopted 2003.

Imperial County2006a – Planning And Development Services/J. Heuberger (tn:36654) Response to CEC's 3/17/06 Facsimile Questions Dated 3/28/06. Submitted to CEC/Dockets 4/4/06.

URS (URS Corporation). 2006. Personal communication by email between Douglas Hahn and Joanna Reinhardt. May 22, 2006.

USFWS (U.S. Fish and Wildlife Service). 2006a. Personal communication by email between Joanna Reinhardt and Carol Roberts. May 5, 2006.

USFWS (U.S. Fish and Wildlife Service). 2006b. Personal communication by email between Joanna Reinhardt and Carol Roberts. May 15, 2006.

CULTURAL RESOURCES

Testimony of Dorothy Torres

INTRODUCTION

The purpose of the cultural resources analysis is to ensure that all potential impacts are identified, and that Conditions of Exemption are set forth that ensure impacts to eligible cultural resources are mitigated below a level of significance under the California Environmental Quality Act (CEQA). The term “cultural resources” as defined in law includes buildings, sites, structures, objects, and historic districts. The term “cultural resources” includes the technical areas of historic/prehistoric archaeology, built environment, and heritage areas. If it appears that a project cannot avoid a potential cultural resource, the cultural resources must be evaluated for eligibility to the California Register of Historic Resources (CRHR). If there would be a significant impact to a significant cultural resource, then Conditions of Exemption would mitigate the impact to below the level of significance.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

The following laws, ordinances, regulations, standards, and policies (LORS) have been identified by staff as relevant to assessing the significance of the impacts from the proposed project.

STATE

- California Code of Regulations, Title 14, section 4852 defines the term "cultural resource" to include buildings, sites, structures, objects, and historic districts.
- Public Resources Code, Section 5024.1 establishes a California Register of Historic Places; determines significance of and defines eligible resources.
- Public Resources Code section 5097.5 identifies any unauthorized removal or destruction of historic resources on sites located on public land as a misdemeanor. Public Resources Code section 5097.99 also prohibits obtaining or possessing Native American artifacts or human remains taken from a grave or cairn and establishes the penalty for possession of such artifacts with intent to sell or vandalize them as a felony. Public Resources Code Section 5097.98 defines procedures for the notification of discovery of Native American artifacts or remains. Public Resources Code section 5097.991 states that it is the policy of the State that Native American remains and associated grave artifacts shall be repatriated.
- Public Resources Code section 21083.2 states that the lead agency determines whether a project may have a significant effect on “unique” archaeological resources; if so, an EIR shall address these resources. If a potential for damage to unique archaeological resources can be demonstrated, the lead agency may require reasonable steps to preserve the resource in place. Otherwise, mitigation measures shall be required as prescribed in this section. The section discusses excavation as mitigation; limits the Applicant’s cost of mitigation; sets time frames for excavation;

defines “unique and non-unique archaeological resources”; and provides for mitigation of unexpected resources.

- Public Resources Code section 21084.1 indicates that a project may have a significant effect on the environment if it causes a substantial adverse change in the significance of a historic resource. The section further defines a “historic resource” and describes what constitutes a “significant” historic resource.
- Government Code section 37361 (b) allows the legislative body of a city to make special provisions for cultural resources identified as having special character or special historical or aesthetic interest or value.
- CEQA Guidelines, Title 14, California Code of Regulations, section 15126.4(b) prescribes the manner of maintenance; repair, stabilization, restoration, conservation, or reconstruction as mitigation of a project’s impact on a historical resource; discusses documentation as a mitigation measure; and discusses mitigation through avoidance of damaging effects on any historical resource of an archaeological nature, preferably by preservation in place, or by data recovery through excavation if avoidance or preservation in place is not feasible. Data recovery must be conducted in accordance with an adopted data recovery plan.
- CEQA Guidelines, section 15064.5 defines the term “historical resources,” explains when a project may have a significant effect on historic resources, describes CEQA’s applicability to archaeological sites, and specifies the relationship between “historical resources” and “unique archaeological resources.” Subsection (f) requires that the lead agency make provisions for historical or unique archaeological resources accidentally discovered during construction.

LOCAL

Imperial County adopted the Conservation and Open Space Element of the County General Plan in 2003. The purpose of the cultural resources portion of this element is to conserve environmental resources, including cultural resources, while encouraging economic development and growth (Imperial County 2003). The Conservation and Open Space Element provides a discussion of cultural resources and their importance to the citizens of Imperial County. The intent of the document is to ensure that the range of environmental resources (Biological Resources, Cultural Resources, Soils, Minerals, Energy, Regional Aesthetics, Air Quality, and Open Space) available to future generations is not limited.

SETTING

The area of the proposed NGTP is approximately five miles east of the Salton Sea. The proposed plant would be located in the geomorphic province identified as the Colorado Desert Salton Trough (Moratto 1984, p. 17-18). Ancient Lake Cahuilla previously covered much of this area. Lake Cahuilla formed several times in the geologically recent past when the Colorado River flooded the Salton Basin. During the era that Lake Cahuilla was present, the desert area became an environment lush with plants and animals and the lake receded gradually and refilled creating a lakeshore environment over a very wide area (IID2006d, pp. 4-2 to 4-3).

Authorities differ regarding the names of the groups of Native Americans that lived in the vicinity of the NGTP. It appears that the area was at times occupied by a group of people who share the Yuman Lauguage Family, Hokan stock with the Ipai and Tipai Native American groups (Luomala 1978, p. 592). The early name given to the people residing in the area was often pronounced as Kamia (Luomala 1978, p. 608). They interacted with the Southern Diegueno from the peninsular ranges to the west of the Colorado Desert and with the Quechan who resided primarily in the Colorado River Valley.

It is likely that the Kamia were affiliated with the Tipai, if Kamia was not simply a name for a band of Tipai (Luomala 1978, p. 592). As Lake Cahuilla dried up, the semi-sedentary Kamia moved to locations along the New and Alamo Rivers (IID2006a, p. 4-7 to 4-8). The Kamia gathered wild plant food, hunted small mammals, and fished. There may have been some overlapping of territory with the Cahuilla and because the environment was similar, subsistence activities were likely to have been similar (IID 2006d, p. 4-7). Anthropologists have hazily defined divisions of the people living in the far southern part of California causing the cultural and environmental differences to shade into one another (Luomala 1978, p. 592).

In the project area, contact with European explorers began for most of the Native American groups late in the 1700s, although it is possible that the Kamia may have encountered Europeans as early as the 1500s (Luomala 1978, p. 594). The Tipai and Ipai violently resisted the development of the Franciscan Missions. Despite the resistance in 1779, the San Diego mission had 1,405 neophytes living nearby. In 1834, Mexico secularized the missions and only a few mission Indians secured land grants (Luomala 1978, p. 595).

In 1848, Mexico ceded California to the United States and gold was discovered, causing a dramatic population increase in the Western United States (IID2006d, p. 4-10). White settlers seized Indian land, and gold was discovered in the town of Julian, in San Diego County in 1870. In 1849, Dr. Oliver M. Wozencraft passed through Imperial Valley and realized its potential for agriculture and the feasibility of using Colorado River water for irrigation. An 1853 scientific expedition, ordered by Jefferson Davis, U.S. Secretary of the War Department, was headed by William Phipps Blake. Using scientific information from Blake's expedition, Wozencraft attempted to convince Congress and several different individuals that irrigation was feasible. He was not successful, but his efforts led to future development (IID2006d, pp. 4-10 to 4-11).

In 1901, building upon Wozencraft's early suggestions, George Chaffey and Charles R. Rockwood established a canal from the Colorado River using an ancient overflow channel known as the Alamo River. The irrigated Imperial County, including the Imperial Valley, was established in 1901.

Water levels in the canal that irrigated Imperial County fluctuated and in 1905, an extremely wet year caused the Colorado River to change course flooding the Alamo River Channel and Salton Sink. A variety of endeavors attempted to control the flooding and water flow, but only Hoover Dam was effective in controlling the Colorado for irrigation purposes. The Holt Power Company was formed and by developing

hydroelectric power was able to supply the energy needs of the Imperial Valley by 1916 (IID2006d, p. 4-12).

In 1911, IID acquired the land rights to the defunct California Development Company and its Mexican subsidiary. By the 1920s, IID was able to supply water to over 500,000 acres of arable land. The Boulder Canyon Act, passed in 1928, provided for construction of Boulder Dam and the All American Canal.

The All American Canal made it possible to provide controlled irrigation to much of Imperial County. However, as important as irrigation was to the development of the Niland area, railroads were also very important. The Southern Pacific between Los Angeles and Yuma with a stop at Niland was constructed in the1870s. In 1903, the Imperial and Gulf Branch railroad was constructed to extend from Niland to Imperial. In 1904, the railroad branch was extended to Calexico. At times, towns were established primarily because the railroad needed a depot. Niland (formerly called Old Beach, Imperial Junction, and Hopgood) was named for the Nile Valley in Egypt and was established prior to the existence of any roads linking Niland with other towns (Fitzurka 2005, p. 6-7). The town did not prosper as fast its originators thought it would. Growth and expansion, however, are still occurring.

PROJECT FACILITIES

The proposed power plant, water lines, gas line and electrical transmission line will be located approximately one mile northeast of the town of Niland in Imperial County. The primary source of potable water for the project will be the Golden State Water Company (GSWC). The GSWC line is located across Cuff Road northeast of the proposed plant site. An 8-inch pipeline will extend approximately 700 feet from the existing line to the new power plant project. The proposed transmission interconnection will extend approximately 520 feet south to the existing adjacent Niland Substation (IID2006a, p. 2-4). The interconnection will not cause any ground disturbance outside the boundaries of the proposed project. The proposed 1,800-foot gas line, running south of Beal Road, will interconnect to a Southern California Gas Company (SCGC) line that runs along the eastern boundary of the IID property (IID2006a, p. 2-3).

IMPACTS

Below is the Environmental Checklist that identifies potential impacts to cultural resources. Following the checklist is a discussion of each impact, and an explanation of staff's conclusions.

ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
CULTURAL RESOURCES – Would the project:				
A. Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?				X
See B & C Checklist next page				
B. Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?		X		
C. Disturb any human remains, including those interred outside of formal cemeteries?		X		

DISCUSSION OF IMPACTS

A. Cause a Substantial Adverse Change in the Significance of Historical Resources: No Impact

For the purpose of a historic assessment, the following buildings, structures, and linear features have been determined to be within the potential impact area of the NGTP. The Area of Potential Effect, determined to be a 0.5-mile radius area around the proposed power plant site, was researched during the applicant's literature search (IID2006d, p. ES-1).

The Southern Pacific Railroad (Union Pacific)

The Southern Pacific Railroad was constructed in the 1870s and is within the 0.5-mile radius area examined by the applicant. The standard gauge track railroad ran between Los Angeles and Yuma, Arizona. Union Pacific purchased the Southern Pacific railroad in the 1990s, and the line is now known as the Union Pacific Railroad. Portions of this railroad are additions to the first transcontinental railroad and are associated with people important in California history. The railroad is recommended as eligible to the National Register of Historic Places (NRHP) by S. Ashkar of Jones and Stokes Environmental firm, and includes the segment that runs through Niland. It is recommended under NRHP criteria A and B because it helped to build the economy and to populate southern California and is associated with historic figures Mark Hopkins, Collis P. Huntington, Leland Stanford, and Charles Crocker (IID2006d, pp. 7-5 and DPR 523 p. 1-3).

There are modern buildings and structures within approximately 50 feet of the railroad tracks and the NGTP would be approximately 200 feet away from the railroad track. Therefore, the setting of the historic railroad is already modern.

Project linears will not cross over or under the railroad track so there would not be any physical impacts to the railroad track from the project. Staff concludes that NGTP would not adversely impact the characteristics that convey the Southern Pacific railroad's historic significance.

The Imperial and Gulf Branch Railroad (Southern Pacific)

The Imperial and Gulf Branch Railroad was constructed in 1903 to connect the main Southern Pacific line with the cities of Imperial County and Mexico. The first leg of the railroad connected Niland with Imperial. In 1904, this standard gauge track railroad line was extended south to Calexico. The line extends from sea level at Calexico to 125 feet below sea level at Niland (IID2006d, p. 7-5). There are modern buildings within approximately 50 feet of the railroad tracks and the NGTP would be approximately 300 feet away from the railroad track. Therefore, the setting of the historic railroad already appears modern. Project linear facilities will not cross over or under the railroad track so there would not be any physical impacts to the historic resource. Staff concludes that NGTP would not adversely impact the Imperial and Gulf Branch Railroad.

The applicant did not provide a recommendation regarding eligibility to the California Register of Historic Resources (CRHR) for this historic resource. However, railroads in general were essential to the development of Southern California and this railroad branch line was and still is important to the economic development of Imperial County. Thus, it is in all likelihood eligible for the CRHR. The railroad was purchased by Union Pacific and is still in use (IID2006d, p. 5-1 and DPR 523 p.1).

The applicant asserts that the historic railroads (the Southern Pacific and the Imperial and Gulf Branch Railroad lines) within the 0.5-mile impact area will not be impacted by the project and therefore no mitigation is needed. Staff agrees with this assessment.

The First National Bank – Niland

The First National Bank - Niland building, currently abandoned, is located approximately 0.5-mile southwest of the project site. It is slightly outside the area identified as the area of potential impacts of the project, but impacts to the setting of a historic resource may occur from some distance away from the resource. The bank was chartered in 1920 and illustrates the growth and development of Niland as an agricultural and commercial center during the early to mid-twentieth century. Two ancillary buildings are attached to the bank building. The building is located at the intersection of Main Street and Niland Avenue. Niland Avenue is the only diagonal roadway within the gridiron pattern of Niland. At present recreational vehicles, modular homes, and commercial buildings surround the bank. The presence of the bank and its predecessor, the Bank of Italy, illustrate the past economic growth and stability of Niland (IID2006a, pp. 6.14 to 6.21).

The applicant retained the services of a qualified architectural historian who asserts that the bank is eligible to the NRHP because it is important to the history of Niland and it possesses high artistic value and embodies distinctive characteristics of the Neoclassical Style of architecture (IID2006a, p. 6.4-18 to 19).

Since the bank was important in Niland history and is exemplary of a particular style, staff agrees that it is likely the bank is eligible to the NRHP under Criterion (A) importance in history, and Criterion (C) embodying a particular style, design, representative of the work of a master, or possessing high artistic values.

The applicant also contends that the bank retains a high degree of integrity. California Register criteria 1 and 3 are very similar to NRHP criteria A and C; therefore, in addition to eligibility for the NRHP, the bank will also be eligible to the CRHR. The applicant asserts that the construction of a new combustion turbine will directly impact (as defined under CEQA) the First National Bank-Niland (IID2006d, p. 6-9). Staff agrees with the applicant that the bank is important in local history and probably meets the criteria for possessing high artistic value, embodies distinctive characteristics of the Neoclassical Style of architecture, and retains a significant amount of its original integrity (IID2006d, p. 7-5).

The applicant asserts that the direct impact to First National Bank – Niland will occur because construction of the project will cause the resource and its immediate surroundings to be "materially impaired." The impact will occur due to a direct physical change in the environment due to increased traffic, dust, and noise (IID2006a, p. 6.4-24).

The applicant proposes to mitigate impacts from the project by completing a more in-depth historical research and site evaluation including a thorough historical context and field survey. In addition, the applicant proposes that a Historic American Building Survey (HABS) Level 1 recording be completed. The applicant also proposes completion of a Historic Structure Report (HSR) to determine a possible Secretary of Interior recommended treatment for the buildings and possible adaptive uses for the building. While staff would certainly encourage the applicant to conduct a public service by completing the recommended mitigation measures for the building, we will not require them.

Staff asserts that the NGTP will not impact the historic First National Bank – Niland. The proposed project is over 0.5-mile away, and modern structures are present between the bank and the project so, the modern buildings and structures have already considerably changed the setting of the bank.

The applicant's consultant specified that project-related noise could materially impact the First National Bank. Noise might impact the bank by causing vibration. However, there are two railroad tracks approximately 200 to 300 feet from the bank. These railroads have been a source of noise, dust, and vibration for over 50 years. Moreover, Conditions of Exemption in the Noise section of this document will mitigate any impacts from noise below the level of significance.

The applicant also identified dust as a construction related impact that could materially impair the significance of the bank. Dust is a normal part of the desert environment. Dust generated by the project will be mitigated by Air Quality Conditions of Exemption to below the level of significance.

Vibrations from construction traffic will not impact the bank. Conditions of Exemption in the Traffic and Transportation section of this Initial Study will encourage the applicant to route construction traffic along roads that will not pass the bank. **TRANS-1** recommends that heavy vehicles and vehicles transporting hazardous materials use a route that would avoid the First National Bank-Niland. Traffic would proceed from State Route 111 to Niland Road and then from Niland Road, the route would continue north to Noffsinger Road. Traffic would then proceed east on Noffsinger Road to Commercial Avenue, and north on Commercial Avenue to Beal Road. At Beal Road vehicles would proceed east to the project site. Use of this route would ensure that there are no impacts from vibrations to the First National Bank-Niland.

Staff concludes that since there will be no impacts from noise, dust, or traffic, no mitigation for impacts to the First National Bank - Niland are needed.

Camp Robert H. Dunlap

The plaque commemorating the historic Marine camp is located in the town of Niland, but the former Marine camp is situated three miles east of Niland and less than three miles east of NGTP. Construction of Camp Dunlap was completed in 1942, and the camp consisted of 30 buildings on approximately 631 acres. The largest volume of training occurred during World War II when 185,000 Marines received training over three years at the camp. A contingent of troops remained at the base until 1949, and a skeleton crew remained until 1956 to dismantle it. All the buildings have been removed with only foundation slabs remaining, thus the current informal name, Slab City (Fitzurka 2006, p. 9-12). All the buildings at the camp have been removed and at a distance of three miles, the setting would not be affected by the proposed power plant project. Staff concludes that NGTP would not affect historic characteristics that make Camp Robert H. Dunlap significant.

At present, thousands of people living in their recreational vehicles (RV) visit Slab City each year and stay anywhere from a few days to six months. The visitors are campers who live in any style of traveling home, from the back seat of cars, tents or any style of motor home. The campers “Snowbirds” come from all over the United States and Canada to enjoy good weather and the companionship of other RV residents (Fitzurka 2006, p. 26).

B. Cause a Substantial Adverse Change in the Significance of an Archaeological Resource: Less than Significant with Mitigation Incorporated

Two previous cultural resource surveys were conducted within the 0.5-mile radius of the project. The previous surveys did not identify any archaeological sites within 0.5-mile of the project site (IID2006d, p. 5-1). The applicant’s recent survey of the project footprint identified one archaeological site within the proposed site boundaries of NGTP. The site appears to be a historic trash scatter consisting of sanitary cans, transfer-printed whiteware plates, porcelain plates, iron barrel bands, and machine-made glass bottle fragments from the 1940s and 1950s (IID2006a, p. 6.4-14). The surface artifact scatter is roughly 10’ by 10’. Two shovel test pits were used to determine that the deposit only extended a few inches below the surface. The historic trash scatter has been subject to sheetwash and erosion.

The applicant recorded the site on a DPR 523 form. Staff agrees with the applicant's recommendation that the site is not eligible to the NRHP or the CRHR. The surface trash scatter is located on the NGTP site and would be destroyed by ground disturbance when the plant is constructed (IID2006a, p. 6.4-24). Staff agrees with the recommendation that no mitigation is necessary. The proposed gas line was not subject to a cultural resources survey within the last five years (IID2006d, Fig. 6.1).

Since prehistoric sites are often discovered near lakes and rivers, it is possible that buried archaeological sites could exist along the shore of ancient Lake Cahuilla. The applicant recommends cultural awareness training for workers and ground disturbance monitoring because there is a possibility that the ancient lake shoreline is present under the project site. Since a historic trash deposit was discovered during the surveys, it is possible that additional deposits perhaps associated with railroad construction or the early history of Niland might be buried under washed-in sediments.

Although disturbance has previously occurred at the plant site, it is possible that excavation may discover artifacts or archaeological sites (IID2006a, p. 6.4-20). Excavation that extends 15 feet below the present ground surface may encounter the ancient shore of Lake Cahuilla (IID2006h, CHRIS letter). Staff recommends that the Cultural Resources Specialist (CRS) or Cultural Resources Monitor (CRM) monitor once each day until excavation reaches 10 feet below the surface. Staff recommends full-time monitoring beginning when excavation reaches a depth of 10 feet to ensure that the project will not accidentally disturb the ancient lake shore without a cultural monitor on site. To ensure a complete analysis, staff is working with the applicant to determine the level of excavation at the project site. The gas line route is not likely to extend below six feet in depth (IID 2006y). However, since the gas line route was not recently surveyed for cultural resources, the appropriate mitigation along the gas line route is full-time monitoring for the duration of ground disturbance.

No significant known archaeological sites would be impacted by NGTP. However, Public Resources Code section 15064.5 (f) directs the lead agency to make provisions for historical or unique archaeological resources that are inadvertently discovered during project construction. According to Richard Cabanilla, Planner IV with Imperial County, NGTP would submit a request for a permit to Imperial County.

The applicant provided recommendations for mitigation (IID2006a, pp. 2.4-21 to 2.4-24). Staff concurs with most of the recommendations, but will expand upon or make additions to the applicant's suggested mitigation. Staff's additional recommendations will be sufficient to ensure that impacts to archaeological discoveries will be mitigated to a level of less than significant. Mitigation measures suggested by the applicant and endorsed by staff are provided as Conditions of Exemption, **CUL-1** through **CUL-6** included at the end of this Initial Study.

Native American Monitor

The applicant recommends that a Native American monitor be present during any cultural resources testing or data recovery if the discovered cultural resources

appear to have a prehistoric or ethnographic component. The monitor will be retained either by the project owner or by the sub-consultant directing the field work (IID2006a, p. 6.4-23). Twenty Native American individuals or groups are listed on the contact list provided by the Native American Heritage Commission (NAHC) to the applicant. The project contacted everyone on the list by letter and follow-up telephone calls.

The applicant received thirteen responses as of April 11, 2006. The Ramona Band of Cahuilla Indians responded that they are not aware of cultural resources that might specifically be impacted by this project. However, they are concerned because the project area is within the traditional use area of the Cahuilla people. They feel that it is necessary to have a Native American monitor assigned by the Ramona Band included in any further field studies and during construction. They would also like copies of all surveys of the project area, including survey information obtained during the records search. In addition, they would like to have a mitigation agreement in place to address the disposition of artifacts should any be discovered.

The applicant reported that a telephone response was received from Alvino Silva. Mr. Silva requested that Native American monitoring occur, if Native American burials are discovered. A telephone response was also received from Anthony Andreas. Mr. Andreas said that he did not have any concerns with the project area, but thought that Native American monitoring was appropriate, if Native American burials were identified. Sirirat Chullakorn, responded by letter for the Augustine Band of Mission Indians recommending Native American monitoring during construction. Judy Stapp of the Cabazon Band of Mission Indians responded via e-mail to the project stating that the project is located outside Cabazon reservation lands and they have no specific information regarding the project area and are not requesting any further consultation on the project. Maurice Chacon of the Cahuilla Band of Mission Indians provided the information by telephone that they would like to be notified if human remains are discovered (IID2006h, Summary of Native American Contacts). Staff recommends that a Native American monitor be retained to monitor in locations where Native American artifacts or Native American human remains may be discovered during ground disturbance at NGTP.

The Conditions of Exemption **CUL-1** through **CUL-6** require that the applicant develop procedures to address mitigation for impacts to a newly discovered significant resource. The Conditions of Exemption also require monitoring of the gas line route that was not surveyed prior to completion of this Initial Study. If a newly discovered cultural resource is determined to be significant and avoidance is not possible, then data recovery and curation will be required to ensure that impacts to the cultural resource are fully mitigated. At present, there is no federal involvement with this project, therefore, only compliance with CEQA is necessary.

C. Disturb Human Remains: Less than Significant with Mitigation Incorporated

There is no record of interred human remains that would be disturbed by the proposed project. Public Resources Code section 15064.5 (f) instructs lead agencies to make provisions for historical or unique archaeological resources that are discovered during construction. In the event that interred human remains are

encountered during project ground disturbance, mitigation will be achieved by following state law that requires notification of the county coroner and additional subsequent requirements. If the county coroner determines that human remains are Native American in origin, the county coroner and NAHC will be notified in accordance with Health and Safety Code, section 7050.5. Under Public Resources Code, section 5097.98, the NAHC will designate a Most Likely Descendant who may make recommendations to the property owner regarding the appropriate treatment of the human remains and associated grave goods. Public Resources Code, section 5097.99 provides penalties for inappropriate possession of Native American human remains or artifacts that have been inappropriately removed from a grave. Compliance with state law will provide sufficient mitigation if Native American human remains are discovered.

CUMULATIVE IMPACTS

Cumulative impacts to cultural resources in the project vicinity may occur if subsurface archaeological deposits (both prehistoric and historic) and the setting of historic structures are affected by other projects in the same area.

At present, the only planned development near Niland and the NGTP is a residential project. The proposed development will be located approximately 1.5-miles west of the project (IID 2006g, data response #12). Project proponents for the residential project and future projects can mitigate impacts to as yet undiscovered subsurface archaeological sites to less than significant levels. The expected and potential impacts from the NGTP will be mitigated. Staff assumes that potential impacts from the proposed residential development can be mitigated, and therefore, the incremental effect will not be cumulatively considerable. Impacts can be mitigated by requiring construction monitoring, evaluation of resources discovered during monitoring, and avoidance or data recovery for resources evaluated as significant (eligible for the CRHR or NRHP). Impacts to human remains can be mitigated by following state law.

RESPONSE TO PUBLIC COMMENTS AGENCY COMMENTS

At the public workshop held on July 12, 2006, the applicant, IID's representative requested that the Energy Commission's Compliance Unit coordinate cultural resources compliance activities for the NGTP project (IID2006m). Imperial County (IC) was consulted via telephone and e-mail and IC concurred with IID's suggestion for the Energy Commission's Compliance Unit to be the responsible agency for cultural resources compliance during construction of the NGTP (CEC2006as). The Conditions of Exemption have been changed to reflect the Commission's Compliance Project Manager (CPM) as the entity providing cultural resources compliance oversight.

CONCLUSIONS

Energy Commission staff conclude that two of the CEQA checklist items for cultural resources are "less than significant with mitigation incorporated." One checklist item is checked "no impact." Based on the discussion above, and in conjunction with the mitigation set forth and agreed to by the applicant and staff, the proposed project will

not cause any significant adverse impact to any known cultural resources. Potential impacts to cultural resources that may be discovered during ground disturbance will be mitigated to below a level of significance by mitigation measures outlined in this document and provided in the Conditions of Exemption.

PROPOSED CONDITIONS OF EXEMPTION

CUL-1 Prior to the start of ground disturbance, the project owner shall obtain the services of a **Cultural Resources Specialist (CRS)**, and one or more alternates, if alternates are needed, to manage all monitoring, mitigation, and curation activities. The CRS may elect to obtain the services of **Cultural Resource Monitors (CRMs)** and other technical specialists, if needed, to assist in monitoring, mitigation, and curation activities. The project owner shall ensure that the CRS evaluates any cultural resources that are newly discovered or that may be affected in an unanticipated manner for eligibility to the California Register of Historic Resources (CRHR). No ground disturbance shall occur prior to CPM approval of the CRS, unless specifically approved by The CPM.

CULTURAL RESOURCES SPECIALIST (CRS)

The resume for the CRS and alternate(s) shall include information demonstrating that the minimum qualifications specified in the U.S. Secretary of Interior Guidelines, as published in the Code of Federal Regulations, 36 CFR Part 61 are met. In addition, the CRS shall have the following qualifications:

1. The technical specialty of the CRS shall be appropriate to the needs of the project and shall include a background in anthropology, archaeology, history, architectural history or a related field; and

2. At least three years of archaeological or historic, as appropriate, resource mitigation and field experience in California.

   The resume of the CRS shall include the names and telephone numbers of contacts familiar with the work of the CRS on referenced projects, and shall demonstrate that the CRS has the appropriate education and experience to accomplish the cultural resources tasks that must be addressed during ground disturbance, grading, construction, and operation.

CULTURAL RESOURCES MONITOR (CRM)

CRMs shall have the following qualifications:

1. a BS or BA degree in anthropology, archaeology, historic archaeology or a related field and one year experience monitoring in California; or

2. an AS or AA degree in anthropology, archaeology, historic archaeology or a related field and four years experience monitoring in California; or

3. enrollment in upper division classes pursuing a degree in the fields of anthropology, archaeology, historic archaeology or a related field and two years of monitoring experience in California.

CULTURAL RESOURCES TECHNICAL SPECIALISTS
The resume(s) of any additional technical specialists, e.g. historic archeologist, historian, architectural historian, physical anthropologist shall be submitted to the CPM.

The project owner shall submit the resume for the CRS, and alternate(s) if desired, to the CPM for review and approval, prior to the start of ground disturbance.

Verification: At least 35 days prior to ground disturbance, the project owner shall submit the resume of the proposed CRS for review and approval to the CPM. At least 10 days prior to a termination or release of the CRS, the project owner shall submit the resume of the proposed new CRS to the CPM for review and approval.

At least 20 days prior to ground disturbance, the CRS shall provide resumes of anticipated CRMs for the project, at least five days prior to the CRM beginning on-site duties. At least 10 days prior to beginning tasks, the resume(s) of any additional technical specialists shall be provided to the CPM for review and approval.

At least 10 days prior to the start of ground disturbance, the project owner shall confirm in writing to the CPM, that the approved CRS will be available for on-site work and is prepared to implement the cultural resources Conditions of Exemption.

CUL-2 Prior to the start of ground disturbance, if the CRS has not participated in the preparation of the request for a Small Power Plant Exemption (SPPE), the project owner shall provide the CRS and the CPM with maps and drawings showing the footprint of the power plant and all linear facilities. The CPM shall review submittals and in consultation with the CRS approve those that are appropriate for use in cultural resources planning activities.

At a minimum, the CRS and CPM shall receive weekly up-dates via e-mail from the project construction manager to confirm area(s) to be worked during the next week, until ground disturbance is completed.

No ground disturbance shall occur prior to the CPM's approval of maps and drawings, unless specifically approved by the CPM.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall submit the subject maps and drawings to the CRS and the CPM for review and approval, if the CRS did not participate in preparation of the SPPE. Each week, during ground disturbance, the CPM shall be included on the construction schedule e-mail updates sent to the CRS.

CUL-3 The project owner shall ensure that:

1. All cultural resources encountered during project ground disturbance shall be recorded on a Department of Parks and Recreation (DPR) form 523 and mapped (may include photos). In addition, all archaeological materials collected (pursuant to the research design) as a result of the

archaeological investigations (survey, testing, and data recovery) shall be curated in accordance with State Historical Resources Commission "Guidelines for the Curation of Archaeological Collections," into a retrievable storage collection in a public repository or museum. The public repository or museum must meet the standards and requirements for the curation of cultural resources set forth at Title 36 of the Federal Code of Regulations, Part 79. Copies of any DPR forms shall be provided to the CPM.

2. All applicable curation fees are paid by the project owner, and any agreements concerning curation are retained and available for audit for the life of the project.

3. The CRS prepares and presents a training program (video or on-site presentation) to all employees hired during periods of ground disturbance. The training shall include a review of applicable laws and at minimum photos of artifacts that might be encountered in the local area.

4. The CRS writes a research design that includes a discussion of research questions and testable hypotheses (prehistoric and historic) applicable to the project area. The research design is the most relevant reference document for determining the significance of discovered cultural material. The research design shall contain lists of artifacts and other cultural materials that will be collected because they contribute information to answer the research questions posed in the research design and a discussion of artifact collection, retention/disposal, and curation policies as function of the research questions formulated in the research design. A prescriptive treatment plan may be included in the research design for limited resource types.

Verification: At least one week prior to initiating ground disturbance, the project owner shall provide a letter to the CPM that states the project owner's intention to comply with each of the four elements of this condition.

At least one week prior to beginning ground disturbance, the project owner shall submit a research design, prepared by the CRS to the CPM for review and approval.

CUL-4 After all ground disturbance has been completed, the project owner shall submit the Cultural Resources Report (CRR) to the CPM for approval. The CRR shall be written by the CRS and shall be provided in the Archaeological Resource Management Reports (ARMR) format. The CRR shall report on all field activities including dates, times and locations, findings, samplings and analysis. All survey reports, Department of Parks and Recreation (DPR) 523 forms, and additional research reports not previously submitted to the California Historic Resource Information System (CHRIS) and the State Historic Preservation Officer (SHPO) shall be included as an appendix to the CRR. If the ARMR reports were previously sent to the CHRIS, then the titles of the previous reports may be listed in the final report.

Verification: The project owner shall submit the CRR to the CPM for review and approval within 90 days after completion of ground disturbance (including landscaping). The project owner shall provide documentation to the CPM verifying that copies of the CRR have been provided to the SHPO, the CHRIS, the tribal chairperson of tribal groups listed by the NAHC who request information, and the curating institution (if archaeological materials were collected).

CUL-5 At the project site, the project owner shall ensure that the CRS, alternate CRS or CRMs shall monitor ground disturbance full-time wherever ground disturbance or excavation exceeds 10 feet deep. After examining the soils, if the CRS determines that full-time monitoring is not necessary in certain locations, a letter or e-mail providing a detailed justification for the decision to reduce the level of monitoring shall be provided to the CPM for review and approval at least 24 hours prior to any reduction in monitoring. Prior to reaching a depth of 10 feet, during ground disturbance, once daily monitoring checks shall be conducted by IID's Construction Project Manager, in locations where soil is being disturbed. IID's Construction Project Manger shall receive training in addition to the new employee training, to enable him/her to recognize archaeological artifacts or sites. If the once daily monitoring check identifies cultural material, additional monitoring or treatment for a discovery shall begin pursuant to the Conditions of Exemption. Monitoring shall occur until the cultural resource is successfully avoided or data recovery and collection pursuant to the research design has been completed to the satisfaction of the CPM.

Full time monitoring of the gas line route shall occur during ground disturbance. If there is a discovery of archaeological material and avoidance is not possible, mitigation shall be conducted pursuant to these Conditions of Exemption.

CRMs shall keep a daily log of any monitoring or cultural resource activities and the CRS shall prepare a weekly summary report on the progress or status of cultural resources-related activities. The CRS may informally discuss cultural resources monitoring and mitigation activities with the CPM.

Cultural resources monitoring activities are the responsibility of the CRS. Any interference with monitoring activities, removal of a monitor from duties assigned by the CRS or direction to a monitor to relocate monitoring activities by anyone other than the CRS shall be considered non-compliance with these Conditions of Exemption.

A Native American monitor(s) shall be obtained to monitor ground disturbance in locations where Native American artifacts may be discovered. Informational lists of concerned Native Americans and guidelines for monitoring shall be obtained from the Native American Heritage Commission. Preference in selecting a monitor shall be given to Native Americans with traditional ties to the area that shall be monitored. If more than one group of Native Americans claim traditional ties to an area and wish to provide a monitor, then Native

American monitoring shall occur in a manner (part-time or rotating etc.) that allows participation by concerned Native American groups.

If efforts to obtain the services of a qualified Native American monitor are unsuccessful, the project owner shall immediately inform the CPM regarding the status of Native American monitoring on the project. The CPM may resolve the issue by allowing the project to proceed without a Native American monitor.

Verification: During the ground disturbance phases of the project, the project owner shall ensure that the CRS provides to the CPM copies of the weekly summary reports prepared by the CRS regarding project-related cultural resources monitoring. The logs shall be provided at the beginning of the week following the monitoring. Copies of daily logs shall be retained and made available for audit, if the CPM requests the information.

CUL-6 The project owner shall grant authority to halt construction to the CRS, alternate CRS, and the CRMs in the event previously unknown cultural resource sites or materials are encountered, or if known resources may be impacted in a previously unanticipated manner (discovery). Redirection of ground disturbance shall be accomplished under the direction of the construction supervisor in consultation with the CRS.

In the event cultural resources are found or impacts are anticipated, construction shall be halted or redirected and shall remain halted or redirected until all of the following have occurred:

1. The CRS has notified the project owner, and the CPM has been notified within 24 hours of the discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning, including a description of the discovery (or changes in character or attributes), the action taken (i.e. work stoppage or redirection), a recommendation of eligibility and recommendations for mitigation of any cultural resources discoveries whether or not a determination of significance has been made;

2. The CRS and the project owner have consulted with the CPM and the CPM has concurred with the recommended eligibility of the discovery and the proposed data recovery or other mitigation; and

3. Any necessary data recovery and mitigation have been completed.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall provide the CPM and the CRS with a letter confirming that the CRS, alternate CRS, and CRMs have the authority to halt construction activities in the vicinity of a cultural resource discovery, and that the project owner shall ensure that the CRS notifies the CPM within 24 hours of a discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning.

REFERENCES

Cabanilla, Richard 2006a, Imperial County, Planner IV. Telephone conversation 6/20/06.

Fitzurka 2006-Fitzurka, Martin. *Camp Robert H. Dunlap*. Booklet prepared to accompany the dedication of the Imperial County Historical Landmark on March 25, 2006. Distributed by E Clampus Vitus, John P. Squibob Chapter #1853.

CEC2006as – CEC/J. Caswell, E-mail reporting telephone conversation with Richard Cabanilla, Planner with Imperial County. Dated 7/31/2006.

IID2006a – Imperial Irrigation District/j. federowicz (tn:36510). Submittal of the Application for Small Power Plant Exemption for the Niland Gas Turbine Plant Dated 03/13/06. Submitted to CEC/B.B. Blevins/Dockets on 03/13/06.

IID2006d – Imperial Irrigation District (tn:36617) Cultural Resources Technical Report Dated 3/14/06. Submitted to CEC/Dockets 3/20/06.

IID2006h – Imperial Irrigation District/URS (tn:36850) Data Responses for Cultural Resources Dated 04/25/06. Submitted to Dockets on 04/26/06.

IID2006m – Imperial Irrigation District (tn:37376) Niland Gas Turbine Plant Workshop. Dated 7/12/2006. Submitted to CEC/Dockets on 7/12/2006.

IID2006y-Imperial Irrigation District/URS D. Hahn/J. Caswell. Report of Conversation – Depth of Linears. Dated 6/1/06

Imperial County 2003 – *Conservation and Open Space Element*, Imperial County General Plan, Adopted 2003.

Luomala, Katherine. Tipai and Ipai in *Handbook of North American Indians Vol. 8*. ed Robert F Heizer, ed. Smithsonian Institution, Washington 1978.

Moratto, Michael. *California Archaeology* 1984: Academic Press Inc. Orlando, Florida.

OHP - Office of Historic Preservation 1989, *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format:* Preservation Planning Bulletin, Number 4(a) – 1989.

ENERGY RESOURCES

Testimony of Shahab Khoshmashrab

INTRODUCTION

The Energy Commission makes findings as to whether energy use by the Niland Gas Turbine Plant (NGTP) will result in significant adverse impacts on the environment, as defined in the California Environmental Quality Act (CEQA). If the Energy Commission finds that the NGTP's consumption of energy would create a significant adverse impact, it must determine whether there are any feasible mitigation measures that could eliminate or minimize the impacts. In this analysis, staff addresses the issue of inefficient and unnecessary consumption of energy.

In order to support the Energy Commission's findings, this analysis will:

- examine whether the facility will likely present any adverse impacts upon energy resources;
- examine whether these adverse impacts are significant; and if so,
- examine whether feasible mitigation measures exist that would eliminate the adverse impacts, or reduce them to a level of insignificance.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS

No Federal, State or local/county laws, ordinances, regulations and standards (LORS) apply to the efficiency of this project.

SETTING

Imperial Irrigation District (IID) proposes to construct and operate the 93 MW (nominal net output) simple cycle NGTP power project, providing peaking power for the IID service territory during periods of peak electrical demand. (Note that this nominal rating is based upon preliminary design information and generating equipment manufacturers' guarantees. The project's actual maximum generating capacity will differ from, and may exceed, this figure.) Power from the facility will provide reliable and flexible peaking generation capacity within both Imperial and parts of Riverside counties (IID 2006a, SPPE § 2.1). The NGTP will consist of two General Electric LM6000PD NxGen Sprint combustion turbine generators (CTGs). Each CTG will utilize an air-cooled mechanical chiller at its air inlet to maintain output and efficiency during periods of high ambient temperatures. The CTGs will utilize water injection for power augmentation and to reduce the formation of NOx (IID 2006a, SPPE §§ 1.2.2, 2.1, 2.4, 2.4.1). The exhaust stacks will incorporate a selective catalytic reduction system (SCR) to further control the emissions of NOx from the plant (IID 2006a, SPPE §§ 1.2.2, 2.4.1, 2.5).

ASSESSMENT OF IMPACTS

METHOD AND THRESHOLD FOR DETERMINING SIGNIFICANCE OF ENERGY RESOURCES

CEQA Guidelines state that the environmental analysis"…shall describe feasible measures which could minimize significant adverse impacts, including where relevant, inefficient and unnecessary consumption of energy (Cal. Code Regs., tit. 14 § 15126.4(a)(1)). Appendix F of the Guidelines further suggests consideration of such factors as the project's energy requirements and energy use efficiency; its effects on local and regional energy supplies and energy resources; its requirements for additional energy supply capacity; its compliance with existing energy standards; and any alternatives that could reduce wasteful, inefficient and unnecessary consumption of energy (Cal. Code regs., tit. 14, § 15000 et seq., Appendix F).

The inefficient and unnecessary consumption of energy, in the form of non-renewable fuels such as natural gas, constitutes an adverse environmental impact. An adverse impact can be considered significant if it results in:

- adverse effects on local and regional energy supplies and energy resources;
- a requirement for additional energy supply capacity;
- noncompliance with existing energy standards; or
- the wasteful, inefficient and unnecessary consumption of fuel or energy.

PROJECT ENERGY REQUIREMENTS AND ENERGY USE EFFICIENCY

Any power plant large enough to fall under Energy Commission jurisdiction will consume large amounts of energy. Under normal conditions, the NGTP will burn natural gas at a nominal rate of up to 792 million Btu (MMBtu) per hour Lower Heating Value (LHV) (IID 2006a, SPPE §§ 2.6, 2.6.2, Figures 2.5-1A through 2.5-1E). This is a substantial rate of energy consumption, and holds the potential to impact energy supplies.

Under expected project conditions, electricity will be generated at a full load efficiency of approximately 39.9 percent LHV with the combustion turbines operating at full load (IID 2006a, SPPE §§ 2.1, 2.4, Table 2.4-1, Figure 2.5-1B).

ADVERSE EFFECTS ON ENERGY SUPPLIES AND RESOURCES

The applicant has described its source of natural gas for the NGTP (IID 2006a, SPPE § 2.6, Appendix J). The project will burn natural gas delivered to the site by Southern California Gas Company (SCGC) via new connections to SCGC's gas transmission lines that run along the eastern boundary of the project site (IID 2006a, SPPE §§ 2.2.1, 2.6.2). The SCGC system is capable of delivering the required quantity of gas to the NGTP (IID 2006a, Appendix J). Furthermore, the SCGC natural gas system has access to gas from the Rocky Mountains, Canada and the Southwest. This represents a resource of considerable capacity. It is therefore highly unlikely that the project could pose a significant adverse impact on natural gas supplies in California.

ADDITIONAL ENERGY SUPPLY REQUIREMENTS

Natural gas fuel will be supplied to the project by new natural gas service lines connected to SCGC's existing transmission pipelines (IID 2006a, SPPE §§ 2.2.1, 2.6.2). This interconnection can be expected to adequately serve the project. There is no real likelihood that the NGTP will require the development of additional energy supply capacity.

COMPLIANCE WITH ENERGY STANDARDS

No standards apply to the efficiency of the NGTP or other non-cogeneration projects.

ALTERNATIVES TO REDUCE WASTEFUL, INEFFICIENT AND UNNECESSARY ENERGY CONSUMPTION

The NGTP could be deemed to create significant adverse impacts on energy resources if alternatives existed that would reduce the project's use of fuel. Evaluation of alternatives to the project that could reduce wasteful, inefficient or unnecessary energy consumption first requires examination of the project's energy consumption. Project fuel efficiency, and therefore its rate of energy consumption, is determined by the configuration of the power producing system and by the selection of equipment used to generate power.

Project Configuration

The project objective is to generate peaking power for IID service territory during periods of high electrical demand (IID 2006a, SPPE § 2.1). The NGTP will be configured as a simple cycle power plant , in which electricity is generated by two natural gas-fired turbine generators (IID 2006a, SPPE §§ 1.1, 1.2.2, 2.1, 2.4, 2.4.1, 3.1). This configuration, with its short start-up time and fast ramping[1] capability, is well suited to providing peaking power. Further, when reduced output is required, one turbine generator can be shut down, allowing the remaining machine to produce 50 percent of full power at optimum efficiency, rather than operating a single, larger machine at less efficient part load output.

Equipment Selection

Modern gas turbines embody the most fossil fuel-efficient electric generating technology available today. The applicant will employ two General Electric LM6000PD NxGen Sprint gas turbine generators (IID 2006a, SPPE §§ 1.2.2, 2.1, 2.4.1, 3.1). The LM6000PD NxGen Sprint gas turbine to be employed in the NGTP represents one of the most modern and efficient such machines now available. The Sprint version of this machine is nominally rated at 50 MW and 40.5 percent efficiency LHV at ISO[2] conditions (GTW 2005). The LM6000 machine used for the NGTP will be equipped with inlet guide vanes to improve performance at part load (IID 2006a, SPPE § 3.1). The NGTP will actually produce 92.8 MW (46.4 MW per machine) at a site rated fuel efficiency of 39.9 percent LHV, based on average annual weather conditions (IID 2006a, SPPE §§ 2.1, 2.4, Table 2.4-1, Figure 2.5-1B). This site rating differs from

[1] Ramping is increasing and decreasing electrical output to meet fluctuating load requirements.

[2] International Standards Organization (ISO) standard conditions are 15°C (59°F), 60 percent relative humidity, and one atmosphere of pressure (equivalent to sea level).

nominal figures due to power losses from parasitic loads, and to reduced system output due to flow losses caused by the inlet air cooling system and by the SCR unit installed on the exhaust of each turbine.

Efficiency of Alternatives to the Project

Alternative Generating Technologies

The applicant addresses alternative generating technologies in its application (IID 2006a, SPPE § 7.4). Fossil fuels, fuel cells, solar, wind, hydroelectric, biomass and biodiesel technologies are all considered. Biomass and fossil fuels other than natural gas cannot meet air quality limitations. Renewables require more physical area and are not always available when peaking power is needed. Given the project objectives, location and air pollution control requirements, staff agrees with the applicant that only natural gas-burning technologies are feasible at this time.

Natural Gas-Burning Technologies

Fuel consumption is one of the most important economic factors in selecting an electric generator; fuel typically accounts for over two-thirds of the total operating costs of a fossil-fired power plant (Power 1994). Under a competitive power market system, where operating costs are critical in determining the competitiveness and profitability of a power plant, the plant owner is thus strongly motivated to purchase fuel-efficient machinery.

Capital cost is also important in selecting generating machinery. Recent progress in the development of gas turbines, incorporating technological advances made in the development of aircraft (jet) engines, combined with the cost advantages of assembly-line manufacturing, has made available machines that not only offer the lowest available fuel costs, but at the same time sell for the lowest per-kilowatt capital cost.

Combined cycle natural gas-burning technology does not meet the requirements and flexibility the project will demand, as peaking power is required during hot summer months experienced in IID service territory. Therefore, the most suitable natural-gas burning technology is considered to be the simple cycle.

Alternative machines that can meet the project's objectives are the GTX100, FT8 TwinPac and LMS100. Like the LM6000, the GTX100 and FT8 TwinPac are aeroderivative machines adapted from Siemens Demag Delaval Turbomachinery (Siemens) and Pratt & Whitney aircraft engines, respectively. The LMS100 is a brand new machine from General Electric that is a hybrid of aircraft and industrial gas turbine engine technology.

The Siemens GTX100 gas turbine generator in a simple cycle configuration is nominally rated at 45 MW and 37 percent LHV at ISO conditions (GTW 2005).

Another alternative is the Pratt & Whitney FT8 TwinPac gas turbine generator in a simple cycle configuration that is nominally rated at 51 MW and 38.4 percent LHV at ISO conditions (GTW 2005).

The LMS100 is a combination of the aeroderivative and heavy industrial turbine technologies. This machine as currently designed requires water injection, and uses an off-machine intercooler, both of which require significant amounts of water. In addition, as of the SPPE filing date, there were no LMS100 turbines in commercial operation.

Though the project may operate at full load, it is designed for part load operation (IID 2006a, SPPE § 3.1). So, there would be times at which the project would operate at half load. The fuel efficiency of the NGTP operating at half load, with only one LM6000PD Sprint operating at full load (40.5 percent at 50 MW, ISO rated) is near that of the LMS100 operating at half load (approximately 40-41 percent at 51.5 MW, ISO rated). Therefore, though the rated efficiency of the LMS100 is higher than that of the LM6000PD Sprint at full load, under expected load requirements and actual operating conditions, the difference between these figures would be relatively insignificant.

Machine	Generating Capacity (MW)	ISO Efficiency (LHV)
GE LM6000PD Sprint	**50**	**40.5 %**
GE LMS100	103	43.8 %
SIEMENS	45	37.0 %
P & W FT8 TwinPac	51	38.4 %

Source: GTW 2005

The LM6000PD NxGen Sprint is further enhanced by the incorporation of spray intercooling (thus the name, SPRay INTercooling). This takes advantage of the aeroderivative machine's two-stage compressor.[3] By spraying water into the airstream between the two compressor stages, the partially compressed air is cooled, reducing the amount of work that must be performed by the second stage compressor. This reduces the power consumed by the compressor, yielding greater net power output and higher fuel efficiency. The benefits in generating capacity and fuel efficiency increase with rising ambient air temperatures. At temperatures above 90°F, the Sprint machine enjoys a four percent increase in both power output and efficiency (GTW 2000).

While the LM6000 enjoys a slight advantage in fuel efficiency over the GTX100 and FT8 TwinPac machines, any differences among the three in actual operating efficiency will be relatively insignificant.

Staff believes IID has selected machines that provide optimum fuel efficiency while satisfying the project's objectives.

Inlet Air Cooling

A further choice of alternatives involves the selection of gas turbine inlet air-cooling methods.[4] The two commonly used techniques are the evaporative cooler or fogger, and the chiller; both devices increase power output by cooling the gas turbine inlet air. A mechanical chiller can offer greater power output than the evaporative cooler on hot, humid days, but consumes electric power to operate its refrigeration process, thus slightly reducing overall net power output and, thus, overall efficiency. An absorption

[3] The larger industrial type gas turbines typically are single-shaft machines, with single-stage compressor and turbine. Aeroderivatives are two-shaft (or, in some cases, three-shaft) machines, with two-stage (or three-stage) compressors and turbines.

[4] A gas turbine's power output decreases as ambient air temperatures rise. The LM6000 Sprint produces peak power at 50°F; this peak output can be maintained in much hotter weather by cooling the inlet air.

chiller uses less electric power, but necessitates the use of a substantial inventory of ammonia. An evaporative cooler or a fogger boosts power output best on dry days; it uses less electric power than a mechanical chiller, possibly yielding slightly higher operating efficiency. The difference in efficiency among these techniques is relatively insignificant.

NGTP proposes to employ electric chilling to cool the combustion turbine inlet air (IID 2006a, SPPE §§ 2.1, 2.4.1, Table 2.4-2). Given the climate at the project site, the need to minimize water consumption, and the relative lack of clear superiority of one system over the other, staff agrees that the applicant's approach will yield no significant adverse energy impacts.

In conclusion, the project configuration (simple-cycle) and generating equipment (LM6000PD NxGen Sprint gas turbines) chosen appear to represent an effective means of satisfying the project objectives. Short start-up time and fast ramping capability associated with this configuration will serve the project in meeting its objective of providing peaking power to IID customers. Energy Commission staff believes the NGTP does not constitute a significant impact on energy resources because there are no feasible alternatives that could satisfy the project's objectives and significantly reduce energy consumption.

CUMULATIVE IMPACTS

Staff knows of one other nearby project, the El Centro Unit 3 Repower power plant project that, like the NGTP, would receive natural gas fuel from the SCGC natural gas system. The combined fuel supply quantities required for both of these projects would not likely create cumulative impacts on natural gas resources, due to the vast quantities of natural gas available to, and deliverable by, the SCGC system. Therefore, the SCGC natural gas supply system is adequate to supply the NGTP without adversely impacting its other customers.

NOTEWORTHY PUBLIC BENEFITS

The applicant proposes to enhance power supply reliability in the Southern California electricity market by providing peaking power during periods of high demand (hot summer days) and by increasing the overall efficiency of the IID generation resources (IID 2006a, SPPE §§ 1.1, 2.1). By doing so in this most fuel-efficient manner, i.e., employing the most modern peaking gas turbine generator available, the NGTP will provide a benefit to the electric customers within the IID service territory.

RESPONSES TO PUBLIC AND AGENCY COMMENTS

No comments have been received as of this writing.

CONCLUSIONS

The NGTP, if constructed and operated as proposed, would generate a nominal 93 MW of electric power with a high project fuel efficiency of 39.9 percent LHV under average annual weather conditions. While it will consume substantial amounts of energy, the NGTP will do so in an efficient manner. It will not create significant adverse effects on energy supplies or resources, will not require additional sources of energy supply, and will not consume energy in a wasteful or inefficient manner. No energy standards apply to the project. Staff therefore concludes that the NGTP would present no significant adverse impacts upon energy resources.

PROPOSED CONDITIONS OF EXEMPTION

No conditions of exemption are proposed.

REFERENCES

GTW (Gas Turbine World). 2005. *Gas Turbine World 2005-2006 Handbook*, volume 24, p. 73.

GTW (Gas Turbine World). 2000. ”LM6000 Sprint design enhanced to increase power and efficiency”, *Gas Turbine World*, July-August 2000, pp. 16-19.

IID (Imperial Irrigation District). 2006a. J. Federowicz (tn:36510). Submittal of the Application for Small Power Plant Exemption for the Niland Gas Turbine Plant Dated 03/13/06. Submitted to CEC/B.B. Blevins/Dockets on 03/13/06.

Power (Power Magazine). 1994. “Operating and maintaining IPP/cogen facilities,” *Power*, September 1994, p. 14.

GEOLOGY, MINERAL RESOURCES, AND PALEONTOLOGY

Testimony of Patrick Pilling, Ph.D., P.E., G.E.

INTRODUCTION

In the geology, geologic and mineral resources, and paleontology section, staff discusses potential impacts of the proposed IID project regarding geologic hazards, geologic (including mineralogic), and paleontologic resources. Energy Commission staff's objective is to ensure that there will be no substantial adverse impacts to significant geological and paleontological resources during project construction, operation and closure. A brief geological and paleontological overview of the project is provided. The section concludes with staff's proposed monitoring and mitigation measures with respect to geologic hazards and geologic, mineralogic, and paleontologic resources, with the inclusion of Conditions of Exemption.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS

The applicable Laws, Ordinances, Regulations and Standards (LORS) are listed in the Small Power Plant Exemption (SPPE) Application in Sections 6.5.5 and 6.6.1 (IID2006a). Staff has identified the following LORS for geologic hazards and resources, and paleontologic resources, as useful as significance criteria for evaluating whether the project as proposed will have a substantial adverse impact on the environment.

FEDERAL

The proposed IID facility is not located on federal land and does not involve any federal actions; as such, the National Environmental Policy Act (NEPA) does not apply to the proposed project. In addition, there are no other federal LORS for geological hazards and resources or grading that apply to the proposed project.

STATE AND LOCAL

The project shall be designed and constructed to the 2001 edition of the California Building Standards Code (CBSC). The CBSC includes a series of standards that are used in project investigation, design, and construction (including grading and erosion control).

SETTING

The proposed power plant project site is located in the northern end of the Imperial Valley region of the Salton Trough, a topographic and structural depression within the Colorado Desert physiographic province in Southern California. Tectonically, the Salton Trough appears to lie on the boundary between the western edge of the North American Plate and the eastern edge of the Pacific Plate, with relative plate motion being transferred to the regional San Andreas Fault system via at least three more localized fault zones. This province is characterized by broad alluvium filled valleys and plains and is bounded to the west by the northwest trending granitic mountains of the Peninsular Ranges physiographic province and on the east by the southern portion of the Basin and Range physiographic province.

The SPPE application (IID2006a) provides documentation of potential geologic hazards at the plant site. Review of the SPPE and preliminary plant site geotechnical report (IID2006a), coupled with staff's independent research, indicate potential geologic hazards at the site are minimal. Staff's independent research included review of available geologic maps, reports, and related data of the proposed IID power plant site and associated linear facility areas. Geological information was available from the California Geological Survey (CGS), U. S. Geological Survey (USGS), and other governmental organizations.

SITE GEOLOGY

The project site is located east of the southeast margin of the Salton Sea, a large saline lake with a surface elevation of approximately 227 feet below sea level. Most of the site surface is composed of a thin veneer of Holocene alluvial sand which is underlain by a thick sequence of lacustrine silts and clays attributed to the ancient Lake Cahuilla. Lacustrine clay forms the surface in the southeast corner of the site. Lacustrine sediments in the Imperial Valley are thought to vary between approximately 100 to 300 feet thick. The surface alluvium is generally 1 to 2 feet thick, and is classified as dry and very loose. The underlying clay and interbedded silt soils are classified as dry to moist, hard, and as exhibiting moderate to high expansion potential.

The project geotechnical consultant conducted 12 borings and 6 cone penetration tests at the proposed power plant site to characterize the subsurface conditions. No bedrock or groundwater was encountered to the maximum depth explored of 91 feet (IID2006a). Staff concurs with the exploration and testing approach, and the results of this program.

FAULTING AND SEISMICITY

Energy Commission staff reviewed the California Geological Survey (CGS) publication "Fault Activity Map of California and Adjacent Areas (Jennings, 1994), Geologic Map of California – Salton Sea Sheet (Jennings, 1967), Fault Rupture Hazard Zones in California (Hart and Bryant, 1999), the Simplified Fault Activity Map of California (Jennings and Saucedo, 2002), Epicenters of and Areas Damaged by M≥ 5 California Earthquakes, 1800 – 1999 (Toppozada *et al*, 2000), and Maps of Known Active Fault Near-Source Zones in California and Adjacent Parts of Nevada (International Conference of Building Officials [ICBO], 1998). The project is located within Seismic Zone 4 as delineated on Figure 16-2 of the CBSC.

No active or potentially active faults are known to cross the proposed power plant footprint. The closest known active (Holocene age) fault is the Brawley Seismic Zone, approximately 8 miles southwest of the IID plant site. The Brawley Seismic Zone is a linear zone of seismicity, up to 6 miles wide, associated with right-step adjustment between the Imperial and San Andreas faults. Other faults with potential to induce ground shaking at the site include the San Andreas fault located approximately 14 miles west of the site, the Imperial fault located approximately 19 miles to the southeast, the Elmore Ranch fault zone located about 19 miles to the west, the Superstition Hills fault which is approximately 25 miles southwest of the site, and the San Jacinto fault zone which is approximately 32 to 40 miles west of the project site. More distant faults with potential to generate shaking at the site are the Laguna Salada fault located approximately 42 miles southwest, the Elsinore fault zone located approximately

44 miles west, and the Earthquake Valley fault located approximately 54 miles to the west of the site. Between July 1986 and May 2006, there have been 28 earthquakes of magnitude 5.0 or greater within 100 miles of the site. The earthquake with the maximum magnitude recorded was a magnitude 7.6 event on June 28, 1992. Staff has calculated the approximate deterministic peak ground acceleration at the site for each of the four closest active faults (Boore et al., 1997).

Fault Name	Moment Magnitude	Distance from Site	Calculated Peak Ground Acceleration
Brawley Seismic Zone	6.4	8 miles	0.21g
San Andreas	7.7	14 miles	0.25g
Elmore Ranch	6.1	19 miles	0.1g
Imperial	7.0	19 miles	0.14g
Superstition Hills	6.6	25 miles	0.11g
San Jacinto – Borrego	6.6	32 miles	0.09g
San Jacinto – Anza	7.2	36 miles	0.11g
San Jacinto – Coyote Creek	6.8	40.3 miles	0.08g
Laguna Salada	7.0	42.4 miles	0.09g
Elsinore – Coyote Mountain	6.8	43.7 miles	0.08g
Elsinore – Julian	7.1	53.6 miles	0.08g
Earthquake Valley	6.5	54 miles	0.06g

The CSBC requires a facility design for this site that would withstand a much higher ground acceleration.

LIQUEFACTION, SUBSIDENCE, HYDROCOMPACTION, AND EXPANSIVE SOILS

Liquefaction is a nearly complete loss of soil shear strength that can occur during an earthquake. During the seismic event, cyclic shear stresses cause the development of excessive pore water pressure between the soil grains, effectively reducing the internal strength of the soil. This phenomenon is generally limited to unconsolidated, clean to silty sand (up to 35 percent non-plastic fines) and very soft silts lying below the ground

water table. The higher the ground acceleration caused by a seismic event, the more likely liquefaction is to occur. Severe liquefaction can result in catastrophic settlements of overlying structural improvements and lateral spreading of the liquefied layer when confined vertically but not horizontally. Because the proposed plant site is underlain by unsaturated, primarily clayey soil to a depth greater than 91 feet, liquefaction is not possible.

Dynamic compaction of soils results when relatively unconsolidated granular materials experience vibration associated with seismic events or even large, vibrating machinery. The vibration causes a decrease in soil volume, as the soil grains tend to rearrange into a more dense state (an increase in soil density). The decrease in volume can result in settlement of overlying structural improvements. Since the site is underlain by hard, cohesive soils, dynamic compaction of site soils is not possible.

Dry to moist soils can possess weak cementation that is a result of chemical precipitates accumulating under semi-arid conditions. Such cementation provides the soil with cohesion and rigidity; however, these cementing agents can be dissolved upon wetting. When they are dissolved, a substantial decrease in the material's void ratio is experienced even though the vertical pressure does not change (hydrocompaction). Materials that exhibit this decrease in void ratio and corresponding decrease in volume with the addition of water are defined as collapsible soils. Collapsible soils are typically limited to true loess, fine flash flood deposits, clayey loose sands, loose sands cemented by soluble salts, and windblown silts. Because the proposed plant site is characterized by a thin veneer of sandy soil overlying generally hard clay, the potential for hydrocompaction is considered negligible.

Ground subsidence is typically caused when ground water is drawn down by irrigation activities, municipal wells, or by oil extraction, such that the effective unit weight of the soil mass is increased, which in turn increases the effective stress on underlying soils, resulting in consolidation/settlement of the underlying soils. Subsidence may also be caused by regional tectonic processes. Typically, these forms of subsidence affect a large area. The proposed IID power plant will obtain cooling water from the Golden State Water company municipal water supply system and, as a result, subsidence due to ground water withdrawal by project components is not expected.

Soil expansion occurs when clay-rich soils, with an affinity for water, exist in-place at a moisture content below their plastic limit. The addition of moisture from irrigation, capillary tension, water line breaks, etc. causes the clay soils to collect water molecules in their structure, which, in turn, causes an increase in the overall volume of the soil. This increase in volume can correspond to movement of overlying structural improvements. As reported in the geotechnical report, most of the site is characterized by a thin veneer of sandy soil overlying clay soils with a medium to high expansion potential. Therefore, mitigation measures such as are specified in the applicant's geotechnical report will be necessary to minimize movement of structures due to soil expansion.

LANDSLIDES

The project is to be located on relatively flat terrain, distant from steep slopes which might be susceptible to landslides. Consequently, the potential for damage due to landslides is considered negligible.

TSUNAMIS AND SEICHES

Tsunamis and seiches are earthquake-induced waves, which can inundate low-lying areas adjacent to large bodies of water. The proposed IID plant site is situated approximately 90 to 100 feet below mean sea level. The nearest extension of the Pacific Ocean is the Sea of Cortez, lying within the Gulf of California, more than 100 miles to the south. This distance and topographically higher terrain between the project site and the coast should preclude damage to the project due to tsunami activity. The closest body of water to the proposed project is the Salton Sea, approximately 5 miles to the west. The Salton Sea is more than 100 feet lower in elevation than the proposed project site and no other large bodies of water are present near the plant site. As a result, the potential for tsunamis and seiches to affect the site is considered negligible.

GEOLOGIC, MINERALOGIC AND PALEONTOLOGIC RESOURCES

The project site is located on Pleistocene and Holocene-age alluvial deposits of the ancient Lake Cahuilla and Brawley Formation. Energy Commission staff have reviewed applicable geologic maps and reports for this area (Jennings, 1967; DOGGR, 1982; Tooker and Beeby, 1990; and Larose et al., 1999). Based on this information and the information contained in the application, there are no known geologic or mineralogic resources located at or immediately adjacent to the proposed IID plant site. However, the proposed IID power plant site is considered likely to contain fossil remains which may include invertebrates, fishes, birds, and/or mammals of various sizes.

The applicant's consultant conducted a paleontologic resources field survey and a sensitivity analysis for the proposed IID project. The Pleistocene and Holocene alluvial deposits have been assigned a "high" sensitivity rating with respect to potentially containing paleontological resources, and several known fossil sites are located in and around the project area (IID2006e). Paleontologic sites serve as indicators in the sedimentary unit or formation in which they are found. Based on the recommendations in the guidelines provided by the Society of Vertebrate Paleontology (SVP, 1995), if an area is determined to have a high potential for containing paleontologic resources, a program for mitigation is developed. Based on a review of available information and since locally the geologic units may exhibit a "high" sensitivity with respect to potential paleontologic resources, staff concludes that the proposed IID project has high potential to expose significant paleontologic resources locally during ground disturbance activities and, therefore, requires a mitigation plan.

IMPACTS

The California Environmental Quality Act (CEQA) Guidelines Appendix G provides a checklist of questions that a lead agency should normally address if relevant to a project's environmental impacts.

- Section (V) (c) asks if the project will directly or indirectly destroy a unique paleontological resource or site or unique geological feature.
- Sections (VI) (a), (b), (c), (d), and (e) pose questions that are focused on whether or not the project would expose persons or structures to geologic hazards.
- Sections (X) (a) and (b) pose questions about the project's effect on mineral resources.

The "Measures for Assessment and Mitigation of Adverse Impacts to Non-renewable Paleontologic Resources: Standard Procedures" (SVP, 1995) is a set of procedures and standards for assessing and mitigating impacts to vertebrate paleontological resources. They were adopted in October 1995 by the SVP, a national organization of professional scientists.

Following is the Environmental Checklist that identifies potential impacts in this issue area. Below the checklist is a discussion of each impact, and an explanation of the impact conclusion.

ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
GEOLOGY - Would the project:				
A. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving				
I. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				X
II. Strong seismic ground shaking?		X		
III. Seismic-related ground failure, including liquefaction?				X
IV. Landslides?				X
B. Result in substantial soil erosion or the loss of topsoil?				NA
C. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse the loss of topsoil?				X
D. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?		X		
E. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				NA
MINERAL RESOURCES - Would the project:				
A. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
B. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X
PALEONTOLOGICAL RESOURCES - Would the project:				
A. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		

DISCUSSION OF IMPACTS

Geology and Soils

A. Risk of Loss, Injury, or Death from Geologic Hazards: Less than Significant with Mitigation Incorporated

I. Rupture of Known Earthquake Fault: No Impact

The proposed IID plant site and related linear facilities are not located on or across an active fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Maps issued by the State Geologist.

II. Strong Seismic Ground Shaking: Less than Significant with Mitigation Incorporated

The IID project will be designed and constructed to conform to the CBSC (2001) requirements for Seismic Zone 4 and a horizontal peak ground acceleration value of at least 0.40g; with these measures serving as mitigation.

III. Seismic Ground Failure or Liquefaction: No Impact

The site is located on unsaturated fine grained, cohesive sediments which are not subject to liquefaction.

IV. Landslides: No Impact

Since the project facilities are located on a relatively flat alluvial plain, landslide potential is not considered to be a potential impact.

B. Soil Erosion: See Soil and Water Resources Section

Information about soil erosion and the loss of topsoil can be found in the **Soil and Water Resources** section of this report.

C. Unstable Soils: No Impact

The site is underlain by unsaturated, soils which are too clayey to liquefy. Differential settlement of site soils is expected to have no impact if appropriate mitigation measures are employed.

D. Expansive Soils: Less Than Significant with Mitigation Incorporated

Expansive soils identified beneath the site should have minimal impact if the mitigation measures that are specified in the applicant's geotechnical report are employed during project construction.

E. Wastewater: See Soil and Water Resources Section

Project wastewater will be collected and hauled away from the site to an appropriate treatment facility. Additional information about wastewater can be found in the **Soil and Water Resources** section of this report.

Mineral Resources

A. Loss of Mineral Resources: No Impact

There are no known geological or mineralogical resources located at or immediately adjacent to the proposed IID plant site or the linear facilities.

B. Loss of Identified Mineral Resource Recovery Sites: No Impact

There are no known geological or mineralogical resources recovery sites located at or immediately adjacent to the proposed IID plant site or the linear facilities.

Paleontology

A. Destruction of Paleontological Resource or Geologic Feature: Less Than Significant With Mitigation Incorporated

Based upon the literature search and field surveys performed by the applicant for the project, the presence of known fossil sites in and around the project area, and the high potential to encounter such resources during construction, the applicant has proposed monitoring and mitigation measures to be followed during the construction of the plant. Energy Commission staff agrees with the applicant that the scientific value of any fossils encountered during construction of the plant and related features would be recovered with the implementation of a mitigation plan per the guidelines of the SVP (1995). As stated in the IID application, impacts to potentially significant paleontological resources are expected to be primarily construction-related, rather than related to plant operation. The applicant has committed to retaining a qualified paleontologist to design and implement a Paleontological Resources Monitoring and Mitigation Program (PRMMP) during construction activities. With the implementation of a scientifically valid and accepted monitoring and mitigation program that includes curation of recovered paleontological resources, impacts to paleontologic resources will be mitigated to less than significant.

CUMULATIVE IMPACTS

The IID site lies in an area that exhibits minimal geologic hazards and no known geologic or mineralogic resources at the plant site or linear facilities. The geologic units that underlie the site do, however, exhibit a high potential to contain significant paleontological resources, but the potential impact to such resources can be mitigated to a less than significant level with the adoption of the recommended Conditions of Exemption. Based on this information and the proposed Conditions of Exemption to mitigate potential project specific impacts, it is staff's opinion that the potential for significant adverse cumulative impacts to the project from geologic hazards, and to potential geologic, mineralogic, and paleontologic resources from the proposed project is low.

RESPONSE TO PUBLIC AND AGENCY COMMENTS

No comments on geology and paleontology have been received for the IID project.

CONCLUSION AND RECOMMENDATIONS

The proposed Conditions of Exemption are to allow the Energy Commission Compliance Project Manager (CPM) and the applicant to adopt a compliance monitoring scheme that will ensure no substantial adverse impacts to paleontological resources due to construction of the project. In addition, the adoption of these Conditions of Exemption should ensure compliance with applicable LORS for paleontological resources.

PROPOSED CONDITIONS OF EXEMPTION

The proposed Paleontological Conditions of Exemption are as follows:

PAL-1 Prior to construction, the project owner shall retain a Paleontological Resource Specialist (PRS) to both design and implement a monitoring and mitigation program. The proposed PRS shall meet the minimum qualifications for a vertebrate paleontologist as described in the SVP guidelines (1995). During construction, earth moving construction activities shall be monitored by the PRS where these activities will potentially disturb previously undisturbed sediment. Monitoring shall not be conducted in areas where the ground has been previously disturbed or in areas where exposed sediment will be buried, but not otherwise disturbed.

Verification:

(1) At least 60 days prior to the start of ground disturbance, the project owner shall submit a resume and statement of availability of its designated PRS for on-site work to the CPM.

(2) At least 20 days prior to ground disturbance, the PRS or project owner shall provide a letter to the CPM with resumes naming anticipated monitors for the project and stating that the identified monitors meet the minimum qualifications for paleontological resource monitoring required by the condition. If additional monitors are obtained during the project, the PRS shall provide additional letters and resumes to the CPM. The letter shall be provided to the CPM no later than one week prior to the monitor beginning on-site duties.

(3) Prior to the termination or release of a PRS, the project owner shall submit the resume of the proposed new PRS to the CPM for review and approval.

PAL-2 The Paleontological Resource Monitoring and Mitigation Program (PRMMP) shall include preconstruction coordination; construction monitoring only during earthwork activities; emergency discovery procedures; sampling and data recovery, if needed; preparation, identification, analysis, and museum curation of any fossil specimens and data recovered; and reporting. This monitoring and mitigation plan shall be consistent with SVP (1995) standard guidelines for the mitigation of construction-related adverse impacts on paleontological resources, as well as the requirements of the designated museum repository for any fossils collected (SVP 1996).

Verification: At least 30 days prior to ground disturbance, the project owner shall provide a copy of the PRMMP to the CPM. The PRMMP shall include an affidavit of authorship by the PRS, and acceptance of the PRMMP by the project owner evidenced by a signature.

PAL-3 Prior to start of construction, all personnel who will be involved with earth-moving activities will be informed that fossils may be encountered, on the appearance of common fossils, and on proper notification procedures. This Worker Environmental Awareness Program (WEAP) training shall be prepared and presented in an environmental awareness video.

Verification: At least 30 days prior to ground disturbance, the project owner shall submit the proposed WEAP including the script and final video to the CPM for approval.

Certification of Completion
Worker Environmental Awareness Program
Imperial Irrigation District Project (Docket 06-SPPE-01)

This is to certify these individuals have completed a mandatory California Energy Commission-approved Worker Environmental Awareness Program (WEAP). The WEAP includes pertinent information on Cultural, Paleontology and Biological Resources for all personnel (i.e., construction supervisors, crews and plant operators) working on-site or at related facilities. By signing below, the participant indicates that they understand and shall abide by the guidelines set forth in the Program materials. Include this completed form in the Monthly Compliance Report.

No.	Employee Name	Title/Company	Signature
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
23.			
24.			
25.			

Cultural Trainer: _____ Signature:_____Date: ___/___/____

Paleo Trainer: _____ Signature:_____Date: ___/___/____

Biological Trainer: _____

REFERENCES

Boore, D. M., Joyner, W. B., and Fumal, T. E., 1997. *Equations for Estimating Horizontal Response Spectra and Peak Ground Acceleration from Western North American Earthquakes: A Summary of Recent Work,* Seismological Research Letters, Vol. 68, No. 1, pp. 128-153.

CBSC (California Building Standards Commission), 2001, *California Building Code.*

Division of Oil, Gas, and Geothermal Resources (DOGGR), 1982. *California Oil & Gas Fields*, Volume III.

Hart, E. W. and Bryant, W. A., 1999. *Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning with Index to Earthquake Fault Zones Maps:* California Division of Mines and Geology Special Publication 42.

ICBO (International Conference of Building Officials), 1998. *Map of Known Active Fault Near-Source Zones in California and Adjacent Portions of Nevada.*

IID2006a – Imperial Irrigation District/j.federowicz (tn:36510). Submittal of the Application for Small Power Plant Exemption for the Niland Gas Turbine Plant Dated 03/13/06. Submitted to CEC/B.B. Blevins,/Dockets on 03/13/06.

IID2006e – Imperial Irrigation District (tn:36618) Paleontological Resource Technical Report Dated 3/17/06. Submitted to CEC/Dockets 3/20/06.

Jennings, C. W. *Fault Activity Map of California and Adjacent Areas* (with appendices), California Geological Survey Geologic Data Map No. 6.

Jennings, C. W., 1967. *Geologic Map of California – Salton Sea Sheet*, Sheet 1:250,000.

Jennings, C. W. and Saucedo, G. J., 2002. *Simplified Fault Activity Map of California*, California Geological Survey Map Sheet 54.

Larose, K., Youngs, L., Kohler-Antablin, S., and Garden, K., 1999. *Mines and Mineral Producers Active in California*: California Division of Mines and Geology Special Publication 103.

SVP (Society of Vertebrate Paleontology). 1995. *Measures for Assessment and Mitigation of Adverse Impacts to Non-renewable Paleontologic Resources: Standard Procedures*, Vol. 163, pp. 22-27.

SVP 1995. *Conditions of Receivership for Paleontologic Salvage Collections: Society of Vertebrate Paleontology News Bulletin,* Vol. 166, p. 31-32.

Tooker, E. W. and Beeby, D. J., 1990. *Industrial Minerals in California: Economic Importance, Present Availability, and Future Development*, California Geological Survey Special Publication 105.

Toppozada, T., Branum, D., Petersen, M., Hallstrom, C., Cramer, C., and Reichle, M., 2000, *Epicenters of and Areas Damaged by M≥5 California Earthquakes, 1800 – 1999*, CDMG Map Sheet 49.

HAZARDOUS MATERIALS MANAGEMENT

Testimony of Geoff Lesh, P.E. and Rick Tyler

INTRODUCTION

This section provides a discussion of staff's evaluation of the potential impacts of the proposed Niland Gas Turbine Plant (NGTP) associated with the handling of hazardous materials. Energy Commission staff's objective is to ensure that there will be no significant adverse impacts attributed to materials use or hazardous conditions during project construction, operation and closure. Energy Commission staff has determined that all California Environmental Quality Act (CEQA) checklist items for hazardous materials are either "less than significant impact" or "no impact." A brief hazards and hazardous materials overview of the project is provided, as are comments regarding selected CEQA checklist items with respect to hazards and hazardous materials. The section concludes with staff's proposed monitoring and mitigation measures with respect to hazards and hazardous materials, with the inclusion of three Conditions of Exemption.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

A framework, based on environmental laws, ordinances, regulations and standards (LORS), exists to reduce risks of accidents and reduce routine hazards. The following federal, state, and local laws generally apply to the protection of public health and the environment. Their provisions have established the basis for staff's determination regarding the significance of potential impacts and acceptability of the NGTP project.

FEDERAL

Superfund Amendments and Reauthorization Act of 1986

The Superfund Amendments and Reauthorization Act of 1986 (Pub. L. 99 - 499, §301,100 Stat. 1614 [1986]), also known as SARA Title III, and Clean Air Act (CAA) of 1990 (42 U.S.C. §7401 *et seq*. as amended), established a nationwide emergency planning and response program, and imposed reporting requirements for businesses which store, handle, or produce significant quantities of extremely hazardous materials. Section 112(F) of the CAA, 42 U.S.C. §7412(F) requires the states to implement a comprehensive system to inform local agencies and the public when a significant quantity of such materials is stored or handled at a facility through preparation of Risk Management Plans. These requirements of the CAA are reflected in the California Health and Safety Code, section 25531 *et seq*.

STATE

California Health and Safety Code, Sections 25534 and 25535.1

California Health and Safety Code, Sections 25534 and 25535.1, direct owners of a stationary source, as defined in 40 C.F.R. §68.3, who store or handle acutely hazardous materials in reportable quantities, to develop a Risk Management Plan (RMP). The

owners are required to submit the RMP to appropriate local authorities, the United States Environmental Protection Agency (USEPA), and the designated local administering agency for review and approval. The plan must include an evaluation of the potential impacts associated with an accidental release, the likelihood of an accidental release occurring, the magnitude of potential human exposure, any pre-existing evaluations or studies of the material, the likelihood of the substance being handled in the manner indicated, and the accident history of the material. Imperial County Environmental Health Department, Department of Toxic Substances Control is the local administering agency to determine the requirement for an RMP.

California Health and Safety Code, Section 41700

California Health and Safety Code, Section 41700, requires that "No person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."

California Government Code, Section 65850.2

California Government Code, Section 65850.2, restricts the issuance of an occupancy permit to any new facility involving the handling of acutely hazardous materials until the facility has submitted an RMP to the administering agency with jurisdiction over the facility. Imperial County Environmental Health Department, Department of Toxic Substances Control is the local administering agency.

LOCAL

Uniform Fire Code

The Uniform Fire Code (UFC) contains provisions regarding the storage and handling of hazardous materials. These provisions are contained in Articles 79 and 80. These articles contain minimum setback requirements for the outdoor storage of ammonia.

California Building Code

The California Building Code also contains requirements regarding the storage and handling of hazardous materials. The Chief Building Official must inspect and verify compliance with these requirements prior to issuance of an occupancy permit.

SETTING

The Project Site is located on a 160-acre property in Imperial County, California, northeast of the town of Niland. The southern half of the Property is zoned for manufacturing and light industrial uses. The Project site is situated within an undeveloped portion of the Property already owned by IID. The land use within a 3-mile radius of the Project consists primarily of cultivated farmlands.

The power plant and associated administration buildings will occupy approximately 22 of the 160 acres in the southwestern portion of the Property. No hazardous materials are currently stored or used at the proposed facility site.

The primary fuel source for the NGTP Project is natural gas. Selective Catalytic Reduction (SCR) is to be used to reduce nitrogen oxide (NO_x) emissions from the combustion of natural gas in the combustion turbine. Aqueous ammonia will be used in the SCR process to convert the NO_x into nitrogen and water vapor, requiring the installation of one above-ground storage tank for aqueous ammonia. A number of other hazardous chemicals will also be used at the new NGTP facility in small quantities.

Proposed safeguards and measures to greatly reduce the opportunity for, or the extent of, exposure to hazardous materials or other hazards would be put in place.

IMPACTS

Following is the Environmental Checklist that identifies potential impacts in this issue area. Below the checklist is a discussion of each impact, and an explanation of the impact conclusion.

ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
HAZARDS AND HAZARDOUS MATERIALS – Would the project:				
A) Create a significant hazard to the public or the environment through the routine transport or use of hazardous materials?		X		
B) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?		X		
C) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
D) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
E) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X
F) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
G) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
H) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X
I) Exceed an applicable Long Range Development Plan or Program EIR standard of significance?				X
PUBLIC SERVICES – Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered facilities, the construction of which could cause significant environmental impacts, or result in an inability to maintain acceptable service ratios, response times, or other performance objectives for the following:				
J) Impact on Fire Protection Services?				X

DISCUSSION OF IMPACTS

The basis for the impact determinations in the checklist is discussed below.

A. Transport or Use of Hazardous Materials: Less than Significant with Mitigation Incorporated

A variety of hazardous materials are proposed for storage and use during the construction of the project and for routine plant operation and maintenance. A list of the hazardous materials to be used during operation of the facility is included in Table 6.14-1 of the SPPE application (and reproduced in Appendix A of this section) (NGTP2006a). One of these materials, aqueous ammonia, plus natural gas, are addressed below. This list must be approved by the Commission Staff as noted in the Condition of Exemption **HAZ-2.**

The hazard characteristics of ammonia and natural gas and their proposed use in substantial amounts during the operation of the plant pose the principal risk of off-site impacts. The potential threats from the other hazardous materials are not as significant as they are to be stored, handled or used for routine purposes in relatively smaller quantities at the facility and also have lower toxicity and/or environmental mobilities.

Aqueous Ammonia

Selective Catalytic Reduction (SCR) is proposed to reduce the NGTP's nitrogen oxide (NO_x) emissions to meet the facility's air quality permit requirements. Aqueous ammonia reacts with a catalyst to convert the NO_x into inert water vapor and nitrogen in the SCR process. The aqueous ammonia proposed for use is a solution of approximately 19% ammonia and 81% water. Solutions containing more than 20% ammonia are considered regulated materials exceeding reportable quantities defined in the California Health & Safety Code section 25532(j). The proposed use of aqueous ammonia significantly reduces the risks that would otherwise be associated with use of the more hazardous anhydrous form of ammonia. The aqueous form eliminates the high internal energy associated with the more lethal anhydrous form, which is stored as a liquefied gas at elevated pressure. The high internal energy associated with the anhydrous form of ammonia can act as a driving force in an accidental release that can rapidly introduce large quantities of the material to the ambient air, where it can be transported in the atmosphere and result in high down-wind concentrations. Spills associated with the aqueous form are also much easier to contain than those associated with the anhydrous form. In addition, relatively slow mass transfer from the free surface of the spilled aqueous solution limits emissions from a spill of aqueous ammonia.

Aqueous ammonia is typically transported and handled safely and without incident. However, mishandling can result in impacts on public health, particularly during transfer from a delivery vehicle to a storage tank. It is during this transfer operation that the greatest risk of an accidental spill and release could occur. Thus, measures to prevent accidental releases and mixing with incompatible materials during transfer are extremely important and will be required as part of a Safety Management Plan for delivery of aqueous ammonia (see Condition of Exemption **HAZ-3**).

A significant number of modern power plants routinely use aqueous ammonia and the Energy Commission has licensed many such plants. Much of the risks associated with using ammonia are already reduced through NGTP's proposed use of the aqueous form of ammonia. Project compliance with LORS and staff's Conditions of Exemption make it unlikely that the use of aqueous ammonia will result in a significant threat to public health and the environment.

The transportation of hazardous materials including aqueous ammonia, particularly on California freeways, is routinely regulated and controlled by various federal and state laws, ordinances, regulations, and standards as discussed in the section titled Traffic and Transportation. There are a number of transportation accident studies that support the fact that such incidents and corresponding chances are highly dependent on the type of roadway and surroundings. It has been reported that the accident frequency for all types of trucks, not exclusively for trucks transporting hazardous materials, is highest for an undivided multilane road at 5.44 accidents per million miles compared to 0.93 accidents per million miles for a freeway in rural California (Davies et. al., 1992).

A recent study went even further by concluding that releases of hazardous materials on freeways rarely play a role in deaths or injuries (FMCSA, 2000). It is therefore reasonable to say that the likelihood of an accident involving a release of ammonia is probably higher on local roads than on freeways. This is supported in a report that observed that accident rates in general are typically much higher for two-lane rural roads compared to multilane highways (USDOT, 1998).

Staff has evaluated available routes for shipment of hazardous materials to the facility and concludes that the risk to the public from transportation of aqueous ammonia is less than significant with mitigation incorporated. Most of the transportation route would be along interstate freeway. Because the facility is located within 35 miles of Interstate 8 (I-8), it is very unlikely that a serious release would occur in the project area, due to the limited number of annual loaded tanker truck travel miles on local roads. Beyond I-8, the anticipated travel routes for hazardous materials deliveries will be along State Route 110, then Niland Avenue or Main St. An at-grade rail crossing at Beale Road is controlled by automated traffic-control arms and signal, so the potential for an accident involving a train and a hazardous materials tanker truck is low.

Staff concludes that with the limited off-freeway distance and improved roads in the vicinity of the project, any potential adverse impacts from the transport of aqueous ammonia can be easily limited to a level of insignificance through the applicant's conformance to applicable standards and laws, in conjunction with staff's proposed Condition of Exemption **Haz-1**.

Natural Gas

The primary fuel source for the proposed project is natural gas. Natural gas poses a fire and/or explosion risk as a result of its flammability. While natural gas will be used in significant quantities, it will not be stored on-site. The risk of a fire and/or explosion from natural gas can be reduced to insignificant levels through adherence to applicable codes and the development and implementation of effective safety

management practices. The National Fire Protection Association (NFPA) Code 85A requires: 1) the use of double block and bleed valves for gas shut-off; 2) automated combustion controls; and 3) burner management systems (NFPA 1987). These measures will significantly reduce the likelihood of an explosion in gas-fired equipment. Additionally, facility start-up procedures will require air purging of the gas turbines prior to start-up, thus precluding the presence of an explosive mixture.

The facility will also require the installation of 1800 feet of new natural gas pipeline routed to the west to connect to the existing Southern California Gas Company (SCGC) gas transmission line. This new line will provide the service line to connect from the SCGC gas line to the gas meter station located just outside the project fence. This line could result in accidental release of natural gas. In order to detect an accidental release of natural gas, both SCGC's main pipeline and the gas in the proposed pipeline will be odorized. The existing U.S. Department of Transportation (DOT) requirements will require the owner to prepare an operations and maintenance plan that addresses both normal procedures and conditions, and any upset or abnormal conditions that could occur. The pipeline segments will be under a continuous cathodic protection system and the owner will perform periodic cathodic protection surveys. There will be markers to identify the pipeline locations, as well as a posting of the toll-free number to call prior to any excavation that may occur around the pipeline

The proposed new pipeline segment will be designed, constructed, owned and operated by SCGC in accordance with national safety codes and the safety standards for new gas pipelines stated in the California Public Utility Commission's General Order (G.O.) 112-E.

It is staff's belief that design and operation of these pipelines in accordance with applicable standards will result in an insignificant risk of impact to the public as a result of accidental release of natural gas from the new pipelines.

B. Accidental Release of Hazardous Materials: Less than Significant with Mitigation Incorporated

Aqueous ammonia is being proposed for use in controlling NO_x emissions created during the combustion of natural gas at the facility. As stated in section A) above, the preparation of an aqueous ammonia Safety Management Plan will address potential impacts which may occur during the transfer of aqueous ammonia from the delivery vehicle to the storage tank.

To assess the potential impacts associated with an accidental release of aqueous ammonia, staff uses the four "bench mark" exposure levels of ammonia gas occurring off-site. These include: 1) the lowest concentration posing a risk of lethality, 2,000 ppm; 2) the Immediately Dangerous to Life and Health (IDLH) level of 300 ppm; 3) the Emergency Response Planning Guideline (ERPG) level 2 of 150 ppm, which is also the RMP level 1 criterion used by EPA and California; and 4) the level considered by the Energy Commission staff to be without serious adverse effects on the public for a one-time exposure of 75 ppm (considered by staff to be a level of significance). If the potential exposure associated with a potential release exceeds 75 ppm at any public receptor, staff will presume that the potential release

poses a risk of significant impact. However, staff will also assess the probability of occurrence of the release and/or the nature of the potentially exposed population in determining whether, the likelihood and extent of potential exposure are sufficient to support a finding of potentially significant impact. A detailed discussion of the exposure criteria considered by staff and their applicability to different populations and exposure-specific conditions is provided in **Hazardous Materials Appendices B** and **C**.

Staff reviewed the applicant's proposal to use aqueous ammonia. The applicant modeled a potential worst-case release of the full contents of the ammonia tank using the SCREEN-3 program. The results indicated that there is a potential for the ERPG-2 (see Appendix A of this section) concentration level (200 ppm) to be reached at a distance of 0.15 miles downwind from the release point. This distance would be beyond the site's fence line, as would be the downwind distance to the CEC's de minimus concentration level of 75 ppm. There are no sensitive receptors within the 0.15 mile radius potential reached by an ERPG-2 concentration. The nearest residence is at a distance of 0.3 mile to the east of the facility, and is beyond the reach of any ERPG-2 concentrations.

Staff considers this analysis to be conservative in that it is likely to be over-predicting of the downwind distance that a potential spill plume might travel for the following reasons:

- Applicant plans to use floating balls in the bermed area surrounding the ammonia storage tank to drastically reduce the exposed surface area of any potential spill. The initial and subsequent rates of ammonia evaporation into the atmosphere would be similarly reduced. This mitigation effect was not included in the release modeling.

- The solution of ammonia in water will rapidly deplete and cool, reducing the duration of significant release of ammonia to approximately ten to fifteen minutes, although release durations used in modeling were 60 minutes. Any downwind concentrations would exist for shorter durations and at shorter distances than the models predict.

Staff expects that the 75 ppm concentration limit would fall short of reaching any sensitive receptors. Compliance with applicable LORS, existing safeguards, and staff's Conditions of Exemption will greatly reduce the opportunity for, or extent of, exposure of the public to ammonia vapors.

C. Emission or Handling Hazardous Substances near a School: No Impact

There are no known schools within a ¼ mile radius of the proposed project. The nearest public school is approximately at 0.6 mile southwest of the NGTP. At this distance, there is virtually no risk of a hazardous plume causing an off-site impact.

D. Site Listed as Hazardous: No Impact

The NGTP project is not located on a hazardous waste site.

E. Airport Hazard Area: No Impact

There are no airports within five miles of the site, nor is the NGTP project located within an airport land use plan area.

F. Private Airstrip Hazard Area: No Impact

There are no private airstrips in the vicinity of the project. Therefore, there are no impacts anticipated to a private airstrip.

G. Impair Emergency Response Plan: No Impact

It appears that the construction and operation of the project would improve upon the reliability of the local power system and therefore benefit the local emergency response capabilities. No interference with emergency response plans or emergency evacuation plans is anticipated.

H. Exposure to Wildland Fires: No Impact

The proposed site would be mostly paved and hence clear of substantial vegetation. The immediate area around the site would be landscaped with limited brush, shrubs, or trees and maintained and irrigated so as to minimize the potential for dry vegetation to fuel a wildfire.

I. Exceed an applicable Long Range Development Plan (LRDP) or Program EIR standard of significance: No Impact

The proposed site falls under, and its development and use is consistent with the Imperial County General Plan and the Niland Urban Area Plan.

J. Impact on Fire Protection Services: No Impact

The proposed site would not store large volumes of fuel or flammable materials. Although natural gas is used as a fuel, it is not stored on-site, resulting in an insignificant risk of fire or explosion. The fire protection system will comply with City underwriters requirements, and the local Fire Marshal. Equipment will be listed and approved by the California Fire Marshal. Fire water reserve supply will meet the requirements of the National Fire Protection Association and the California Fire Code. Similarly, the need for hazmat response services also should be infrequent. Compliance with applicable LORS, existing safeguards, and staff's Conditions of Exemption will ensure that local fire protection services are not impacted.

CUMULATIVE IMPACTS

The primary potential cumulative effect would require consideration of the possibility any one chemical release from the site would create an additive risk to the public when combined with other releases from surrounding chemical-use facilities. This is highly unlikely, considering the nature of the land uses and low level of industrialization in the local surrounding area. Therefore, Staff considers the scenario of simultaneously occurring releases, under meteorological conditions which allow their respective plumes to merge, and travel downwind without significant dispersion, to be extremely unlikely.

Although the presence of the NGTP facility will increase the amounts of hazardous materials in the local project area, the quantities present and mitigating measures proposed are not expected to result in any significant cumulative impacts.

RESPONSES TO PUBLIC AND AGENCY COMMENTS

No comments have been received as of this writing.

CONCLUSIONS

By incorporating the appropriate Conditions of Exemption, the routine transport to and use of hazardous materials at the NGTP project site will not result in significant impacts to the public or the environment. Analysis shows that there will be no significant direct or cumulative impact to an environmental justice population.

PROPOSED CONDITIONS OF EXEMPTION

HAZ-1 The project owner shall direct all vendors delivering aqueous ammonia to the site to use only tanker truck transport vehicles, which meet or exceed the specifications of DOT Code MC-307.

Verification: At least 30 days prior to receipt of aqueous ammonia onsite, the project owner shall submit copies of the notification letter to supply vendors indicating the transport vehicle specifications to the CPM for review and approval.

HAZ-2 The project owner shall not use any hazardous material in reportable quantities, as specified in Title 40, Code of Federal Regulations, section 355.50, not listed in Table 2.9-1 of the SPPE application (NGTP2006a), unless approved in advance by the CPM.

Verification: The project owner shall provide to the CPM, in the Annual Compliance Report, a list of hazardous materials contained at the facility in reportable quantities.

HAZ-3 The project owner shall develop and implement a Safety Management Plan for delivery of aqueous ammonia and submit the plan to the CPM for review and approval. The plan shall include procedures, protective equipment requirements, training and a checklist. It shall also include a section describing all measures to be implemented to prevent mixing of aqueous ammonia with incompatible hazardous materials.

Verification: At least thirty days prior to the delivery of aqueous ammonia to be used at the facility, the project owner shall provide a safety management plan as described above to the CPM for review and approval.

REFERENCES

AIChE (American Institute of Chemical Engineers). 1989. Guidelines for Technical Management of Chemical Process Safety, AIChE. New York, NY 10017.

____. 1994. Guidelines for Implementing Process Safety Management Systems, AIChE. New York, NY 10017.

____. 1996. Guidelines for Use of Vapor Cloud Dispersion Models, AIChE. New York, NY 10017.

____. 1998. Guidelines for Design Solutions for Process Equipment Failures, AIChE. New York, NY 10017.

API (American Petroleum Institute). 1990. Management of Process Hazards, API Recommended Practice 750. American Petroleum Institute, First Edition, Washington, DC, 1990.

Baumeister, T. and L.E. Marks. 1967. Standard Handbook for Mechanical Engineers. McGraw-Hill, New York, NY. (Tables 24 and 43).

Calabrese, E.J. 1978. Pollutants and High Risk Groups. John Wiley and Sons, New York.

Davies, P.A. et al. 1992. The assessment of major hazards: The road transport environment for conveyance of hazardous materials in Great Britain. Journal of Hazardous Materials, Amsterdam Elsevier Scientific Publishing Co, 32.

EPA (Environmental Protection Agency). 1987. Technical Guidance for Hazards Analysis, U.S. Environmental Protection Agency, Washington, D.C.

____. 1988. Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Environmental Protection Agency, Research Triangle Park, NC, 1988.

____. 2001. RMP*Comp program. Website at: http://yosemite.epa.gov/oswer/CeppoWeb.nsf/content/rmp-comp.htm

FEMA (Federal Emergency Management Agency). 1989. Handbook of Chemical Hazard Analysis Procedures, Federal Emergency Management Agency, Washington, DC, 1989.

FMCSA (Federal Motor Carrier safety Administration). 2000. Large Truck Crash Profile : The 1998 National Picture, 2000.

Harwood W. et al. 1990. Truck Accident Rate for Hazardous Materials Routing, National Research Council, 2000.

Lees, F.P. 1998. Loss Prevention in the Process Industries, Vols. I, II and III. Second Edition, Butterworths.

NFPA (National Fire Protection Association). 1987. NFPA 85A, Prevention of Furnace Explosions in Fuel Oil and Natural Gas Fired Single Burner Boiler Furnaces, National Fire Protection Association, Batterymarch Park, Quincy, MA, 1987.

NRC (National Research Council). 1979. Ammonia. Subcommittee on Ammonia. Committee on Medical and Biologic Effects of Environmental Pollutants. Division of Medical Sciences, Assembly of Life Sciences, National Research Council (NRC), Baltimore, Maryland, University Park Press (NTIS No. PB 278-027).

Perry. 1973. Perry's Chemical Engineers' Handbook, Sixth Edition, McGraw-Hill, USA.

Pijawka D. et al. 1995. Flows and Regional Risk Assessment of Transporting Hazardous Waste in the US-Mexico Border Region, Center for Environmental Studies, Arizona State University, 1995.

NGTP2006a (Niland Gas Turbine Plant) 2006a: Application for Small Power Plant Exemption. Submitted to the California Energy Commission on March 13, 2006.

USDOT (US Department of Transportation), 1998. Hazardous Materials Shipment, The Office of Hazardous Materials Safety, Research and Special Programs Administration, 1998.

USOSHA (United States Occupational Safety and Health Administration). 1993. Process Safety Management / Process Safety Management Guidelines For Compliance. U.S. Department of Labor, Washington, DC.

Appendix A
TABLE 6.14-1 (From Application for Exemption)

ANTICIPATED HAZARDOUS MATERIALS USAGE

Chemical	Use	Storage	Location	Delivery	Notes
Aqueous ammonia (19% solution)	~600 gallons/ 24- hour operating day (400/16-hour day)	12,000 gallons	Outdoor tank	Biweekly	8,000 gallons delivery quantity
Transformer mineral insulating oil	NA	~12,100 gallons	Equipment skid Generation Switchyard	NA	<5,000 gallons per GSU transformer (2 total) <500 gallons per auxiliary transformer (4 total) <25 gallons per voltage transformer (2 total) <50 gallons per metering unit (1 total)
SF6 Natural Gas	N/A	N/A	Generation Switchyard Niland Substation	N/A	<60 lbs per circuit breaker (4-total)
CTG synthetic lubricating oil	NA	~300 gallons	Equipment skid	NA	<150 per CTG turbine lube oil tank
CTG mineral lubricating oil	NA	~1,000 gallons	Equipment skid	NA	<500 per CTG generator lube oil tank
BOP equipment lubricating oil	NA	<100 gallons	Equipment skid	NA	3 natural gas compressors 2 air compressors
Diesel fuel oil #2	NA	<250 gallons	Indoor tank	NA	Diesel fire pump fuel

Notes:
% = percent
~ = approximately
< = less than
BOP = balance of plant
CTG = combustion turbine generator
GSU = generator step-up
NA = not applicable
NOx = nitrogen oxide(s)
SCR = selective catalytic reduction

Hazardous Materials
Appendix B

Basis for Staff's Use of 75 PPM Ammonia Exposure Criteria

BASIS FOR STAFF'S USE OF 75 PPM AMMONIA EXPOSURE CRITERIA

Staff uses a health-based airborne concentration of 75 PPM to evaluate the significance of impacts associated with potential accidental releases of ammonia. While this level is not consistent with the 200-ppm level used by EPA and Cal/EPA in evaluating such releases pursuant to the Federal Risk Management Program and State Accidental Release Program, it is appropriate for use in staff's analysis of the proposed project. The Federal Risk Management Program and the State Accidental Release Program are administrative programs designed to address emergency planning and ensure that appropriate safety management practices and actions are implemented in response to accidental releases. However, the regulations implementing these programs do not provide clear authority to require design changes or other major changes to a proposed facility. The preface to the Emergency Response Planning Guidelines (ERPGs) states that "these values have been derived as planning and emergency response guidelines, **not** exposure guidelines, they do not contain the safety factors normally incorporated into exposure guidelines. Instead they are estimates, by the committee, of the thresholds above which there would be an unacceptable likelihood of observing the defined effects." It is staff's contention that these values apply to healthy adult individuals and are levels that should not be used to evaluate the acceptability of avoidable exposures for the entire population. While these guidelines are useful in decision making in the event that a release has already occurred (for example, prioritizing evacuations), they are not appropriate for and are not binding on discretionary decisions involving proposed facilities where many options for mitigation are feasible. CEQA requires permitting agencies making discretionary decisions to identify and mitigate potentially significant impacts through feasible changes or alternatives to the proposed project.

Staff has chosen to use the National Research Council's 30-minute Short Term Public Emergency Limit (STPEL) for ammonia to determine the potential for significant impact. This limit is designed to apply to accidental unanticipated releases and subsequent public exposure. Exposure at this level should not result in serious effects but would result in "strong odor, lacrimation, and irritation of the upper respiratory tract (nose and throat), but no incapacitation or prevention of self-rescue." It is staff's opinion that exposures to concentrations above these levels pose significant risk of adverse health impacts on sensitive members of the general public. It is also staff's position that these exposure limits are the best available criteria to use in gauging the significance of public exposures associated with potential accidental releases. It is, further, staff's opinion that these limits constitute an appropriate balance between public protection and mitigation of unlikely events, and are useful in focusing mitigation efforts on those release scenarios that pose real potential for serious impacts on the public. Table 1 provides a comparison of the intended use and limitations associated with each of the various criteria that staff considered in arriving at the decision to use the 75-ppm STPEL. **Hazardous Materials Appendix C** provides a summary of adverse effects, which might be expected to occur at various airborne concentrations of ammonia.

Hazardous Materials Appendix B Table-1
Acute Ammonia Exposure Guidelines

Guideline	Responsible Authority	Applicable Exposed Group	Allowable Exposure Level	Allowable* Duration of Exposures	Potential Toxicity at Guideline Level/Intended Purpose of Guideline
IDLH[2]	NIOSH	Workplace standard used to identify appropriate respiratory protection.	300 ppm	30 min.	Exposure above this level requires the use of "highly reliable" respiratory protection and poses the risk of death, serious irreversible injury or impairment of the ability to escape.
IDLH/10[1]	EPA, NIOSH	Work place standard adjusted for general population factor of 10 for variation in sensitivity	30 ppm	30 min.	Protects nearly all segments of general population from irreversible effects
STEL[2]	NIOSH	Adult healthy male workers	35 ppm	15 min. 4 times per 8 hr day	No toxicity, including avoidance of irritation
EEGL[3]	NRC	Adult healthy workers, military personnel	100 ppm	Generally less than 60 min.	Significant irritation but no impact on personnel in performance of emergency work; no irreversible health effects in healthy adults. Emergency conditions one time exposure
STPEL[4]	NRC	Most members of general population	50 ppm 75 ppm 100 ppm	60 min. 30 min. 10 min.	Significant irritation but protects nearly all segments of general population from irreversible acute or late effects. One time accidental exposure
TWA[2]	NIOSH	Adult healthy male workers	25 ppm	8 hr.	No toxicity or irritation on continuous exposure for repeated 8 hr. Work shifts
ERPG-2[5]	AIHA	Applicable only to emergency response planning for the general population (evacuation) (not intended as exposure criteria) (see preface attached)	200 ppm	60 min.	Exposures above this level entail** unacceptable risk of irreversible effects in healthy adult members of the general population (no safety margin)

1) (EPA 1987) 2) (NIOSH 1994) 3) (NRC 1985) 4) (NRC 1972) 5) (AIHA 1989)

* The (NRC 1979), (WHO 1986), and (Henderson and Haggard 1943) all conclude that available data confirm the direct relationship to increases in effect with both increased exposure and increased exposure duration.

** The (NRC 1979) describes a study involving young animals, which suggests greater sensitivity to acute exposure in young animals. The (WHO 1986) warns that the young, elderly, asthmatics, those with bronchitis and those that exercise should also be considered at increased risk based on their demonstrated greater susceptibility to other non-specific irritants.

References for Hazardous Materials Appendix B, Table 1

AIHA. 1989. American Industrial Hygienists Association, Emergency Response Planning Guideline, Ammonia, (and Preface) AIHA, Akron, OH.

EPA. 1987. U.S. Environmental Protection Agency, Technical Guidance for Hazards Analysis, EPA, Washington, D.C.

NRC. 1985. National Research Council, Criteria and Methods for Preparing Emergency Exposure Guidance Levels (EEGL), short-term Public Emergency Guidance Level (SPEGL), and Continuous Exposure Guidance Level (CEGL) Documents, NRC, Washington, D.C.

NRC. 1972. Guideline for short-term Exposure of The Public To Air Pollutants. IV. Guide for Ammonia, NRC, Washington, D.C.

NIOSH. 1994. National Institute of Occupational Safety and Health, Pocket Guide to Chemical Hazards, U.S. Department of Health and Human Services, Washington D.C., Publication numbers 94-116.

WHO. 1986. World health Organization, Environmental Health Criteria 54, Ammonia, WHO, Geneva, Switzerland.

Abbreviations for Hazardous Materials Appendix B, Table 1

ACGIH, American Conference of Governmental and Industrial Hygienists
AIHA, American Industrial Hygienists Association
EEGL, Emergency Exposure Guidance Level
EPA, Environmental Protection Agency
ERPG, Emergency Response Planning Guidelines
IDLH, Immediately Dangerous to Life and Health Level
NIOSH, National Institute of Occupational Safety and Health
NRC, National Research Council
STEL, Short Term Exposure Limit
STPEL, Short Term Public Emergency Limit
TLV, Threshold Limit Value
WHO, World Health Organization

Hazardous Materials
Appendix C

Summary of Adverse Health Effects of Ammonia

638 PPM
WITHIN SECONDS:

- Significant adverse health effects;
- Might interfere with capability to self rescue;
- Reversible effects such as severe eye, nose and throat irritation.

AFTER 30 MINUTES:

- Persistent nose and throat irritation even after exposure stopped;
- irreversible or long-lasting effects possible: lung injury;
- Sensitive people such as the elderly, infants, and those with breathing problems (asthma) experience difficulty in breathing;
- Asthmatics will experience a worsening of their condition and a decrease in breathing ability, which might impair their ability to move out of area.

266 PPM
WITHIN SECONDS:

- Adverse health effects;
- Very strong odor of ammonia;
- Reversible moderate eye, nose and throat irritation.

AFTER 30 MINUTES:

- Some decrease in breathing ability but doubtful that any effect would persist after exposure stopped;
- Sensitive persons: experience difficulty in breathing;
- Asthmatics: may have a worsening condition and decreased breathing ability, which might impair their ability to move out of the area.

64 PPM

WITHIN SECONDS:

- Most people would notice a strong odor;
- Tearing of the eyes would occur;
- Odor would be very noticeable and uncomfortable.
- Sensitive people could experience more irritation but it would be unlikely that breathing would be impaired to the point of interfering with capability of self rescue
- Mild eye, nose, or throat irritation
- Eye, ear, & throat irritation in sensitive people
- Asthmatics might have breathing difficulties but would not impair capability of self rescue

22 or 27 PPM

WITHIN SECONDS:

- Most people would notice an odor;
- No tearing of the eyes would occur;
- Odor might be uncomfortable for some;
- Sensitive people may experience some irritation but ability to leave area would not be impaired;
- Slight irritation after 10 minutes in some people.

4.0, 2.2, or 1.6 PPM

- No adverse effects would be expected to occur;
- Doubtful that anyone would notice any ammonia (odor threshold 5 - 20 PPM);
- Some people might experience irritation after 1 hr.

LAND USE, RECREATION, AND AGRICULTURE RESOURCES

Testimony of Amanda Stennick

INTRODUCTION

The land use analysis of the Imperial Irrigation District's (IID) Niland Gas Turbine Project (NGTP) focuses on the project's compatibility with existing and planned land uses and its consistency with applicable land use plans, ordinances, and policies.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

STATE

California Land Conservation Act of 1965

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space uses. The landowner commits the parcel to an annually renewing ten-year period wherein no conversion out of agricultural use is permitted. In return, the land is taxed at a rate based on the actual use of the land for agricultural purposes, as opposed to its unrestricted market value. Participation in the Williamson Act program is dependent on county adoption and implementation of the program, and is voluntary for landowners.

The Farmland Security Zone is additional agricultural land conservation legislation that went into effect August 24, 1998. This program allows local governments and landowners to rescind a Williamson Act contract and simultaneously place the farmland under a Farmland Security Zone contract, which has an initial term of at least 20 years. A Farmland Security Zone contract offers landowners greater property tax reduction than the Williamson Act by valuing enrolled real property at 65 percent of its Williamson Act valuation, or 65 percent of its Proposition 13 valuation, whichever is lower.

Farmland Mapping and Monitoring Program

The California Department of Conservation established the Farmland Mapping and Monitoring Program (FMMP) in 1982 in response to a critical need for assessing the location and quantity of agricultural lands and conversion of these lands to other uses. The Program regularly updates Important Farmland Inventory Maps of the counties activities. The FMPP is the only statewide land use inventory conducted on a regular basis that identifies the conversion of agricultural land to urban and other uses. Every even numbered year, FMMP issues a Farmland Conversion Report. FMMP data is used in elements of some county and city general plans, in environmental documents as a way of assessing project impacts on Prime Farmland and in regional studies on agricultural land conversion, and in assessing impacts of proposed projects reviewed through the Commission's siting, licensing, and exemption processes.

LOCAL

Imperial County Zoning Ordinance

The project site would be located to the northeast of Niland, California, an unincorporated community in Imperial County. Land use laws, ordinances, regulations and standards (LORS) applicable to the proposed project are contained in Imperial County's General Plan and Zoning Ordinance and Niland Urban Area Plan.

Zoning is the specific administrative tool used by a jurisdiction to regulate land use and development and is one of the primary tools for implementing the goals and policies of the general plan. Zoning is typically more specific than the general plan and includes detailed land use regulations and development standards. Imperial County's Zoning Ordinance consists of text and maps that divide all unincorporated lands in the county into zoning districts that specify allowable uses and development standards. The southern half of the 160-acre project site is zoned Light Industrial (M-1) and the northern half is zoned General Agriculture (A-2). According to the application, the project would need a conditional use permit to allow the proposed project in the M-1 zone.

Imperial County General Plan

Land use is controlled and regulated by a system of plans, policies, goals, and ordinances that are adopted by the various jurisdictions with land use authority over the area encompassed by the proposed project. The general plan is a broadly scoped planning document and defines large-scale planned development patterns over a relatively long period of time.

The Imperial County General Plan includes specific policies to preserve and enhance existing development and to provide for orderly and appropriate new development of Imperial County. Actions and approvals required by Imperial County Planning and Development Services must be consistent with the Imperial County General Plan.

The project site is designated by the Imperial County General Plan as "Urban". The general plan characterizes "Urban" as areas with "…full level of urban services, in particular public water and sewer systems, and contain or propose a broad range of residential, commercial, and industrial uses…"

Niland Urban Area Plan

The project site is located within the "Urban" area of the unincorporated community of Niland, and is part of the Niland Urban Area Plan. The Niland Urban Area Plan implements the Land Use Element of the Imperial County General Plan, and identifies the goals, standards, and policies that will guide the physical growth of the community of Niland.

The Niland Urban Area Plan designates the southern half of the 160-acre project site Light/Medium Industrial and designates the northern half Medium Agriculture. According to the application and the letter from Imperial County Planning and Development Services (Heuberger 2006), the project would need a general plan amendment for the Niland Urban Area Plan. The resulting general plan land use designation would be Government/Special Public to reflect IID's ownership and the governmental use of the

site (Minnick 2006). The land use designation “Government/Special Public” is defined in the Niland Urban Area Plan as “A land use that depicts existing governmental land uses including but not limited to schools, fire department, sheriff’s substation, churches, community buildings, lands, and other public related facilities.”

SETTING

PROJECT LOCATION AND DESCRIPTION

The project site is located near the unincorporated community of Niland, in Imperial County on a 160-acre parcel owned by IID. The total disturbed area of the NGTP and temporary construction areas would be about 26 acres. Permanent site improvements and features associated with the final NGTP would comprise a total of about 22 acres. The project would be situated in the southwest portion of the site adjacent to the existing Niland Substation, in the industrial designated portion of the parcel.

Based on aerial photographs submitted in Appendix K of the SPPE application, the subject parcel has not been farmed since 1945 and is currently vacant. The 1996 (most recent) aerial photographs depict the subject property as relatively unchanged, except for the construction of a radio tower on the southwestern portion adjacent to the north of the existing substation.

The NGTP would be owned and operated by IID, a provider of electrical power, non-potable water, and farm drainage services to the lower southeastern portion of the California desert, primarily in Imperial County. IID’s NGTP is intended to serve the growing electrical load demands of the region.

SURROUNDING LAND USE

Existing land uses in the immediate vicinity of the project site include agriculture to the north and east and industrial to the south; the Niland Substation and the unincorporated community of Niland are west of the project site.

IMPACTS

The Environmental Checklist identifies potential impacts in this issue area. Following the checklist is a discussion of each impact and an explanation of the impact conclusion.

ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
LAND USE AND PLANNING -- Would the project:				
A. Physically divide an established community?				X
B. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?		X		
C. Conflict with any applicable habitat conservation plan or natural community conservation plan?				X
RECREATION				
A. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
B. Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?				X
AGRICULTURE RESOURCES -- In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
A. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
B. Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
C. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?				X

DISCUSSION OF IMPACTS

Land Use and Planning

A. Division of an Established Community: No Impact

The proposed NGTP would be located in an area within Imperial County designated for industrial development and agricultural use. Neither the size nor nature of the project would result in a physical division of an established community. No new

physical barriers would be created by the project, and no existing roadways or pathways would be blocked.

B. Conflict with Land Use Plans or Policies: Less than Significant with Mitigation Incorporated

In a July 25, 2006 email the Imperial County Planning and Development Services staff states a general plan amendment will not be required should the project footprint of the NGTP be within the boundaries of the site that is designated Light/Medium Industry M-1(IID2006n). According to Imperial County Planning and Development Services, the project requires a conditional use permit under the M-1 zoning. Once IID submits a formal application to Imperial County and the County finds the application complete, the application will circulate to various County agencies for their comments on specific conditions required for project approval. The Imperial County Board of Supervisors will make the final decision on whether the conditional use permit is granted to IID.

C. Conflict with Habitat or Natural Community Conservation Plans: No Impact

There are no habitat conservation plans or natural community conservation plans adopted by the jurisdictions that would be affected by the proposed project. Therefore, the proposed project would not conflict with existing plans and there would be no impact.

Recreation

A. Increased Use of Recreational Facilities: No Impact

Physical impacts to public services and facilities such as recreational facilities are usually associated with population in-migration and growth in an area, which increase the demand for a particular service. An increase in population in any given area may result in the need to develop new, or alter existing, government facilities in order to accommodate increased demand.

The proposed project is not expected to generate or result in an increase in the population of the area. Staff concludes that because the regional workforce will be able to accommodate the NGTP construction labor needs, the project will not increase the area's population (See the **SOCIOECONOMICS** section for an analysis of the construction workforce). Therefore, staff has concluded that the proposed project would not increase the use of existing recreational facilities or result in their deterioration. No impacts would occur.

B. Construction of Recreational Facilities: No Impact

As a power generation project, the proposed project does not include recreational facilities or require the construction or expansion of existing recreational facilities. As described above, the proposed project would not result in an increase in the area's population that would require new or expanded recreational facilities whose construction would in turn lead to an adverse physical effect on the environment. No impacts would occur.

Agricultural Resources

A. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance: No Impact

The project facility, adjacent construction parking and laydown areas, and associated pipelines are not located in any areas designated as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland on the California Department of Conservation's Important Farmland Inventory Map for Imperial County.

B. Conflict with Existing Zoning: No Impact

The southern half of the 160-acre project site is zoned Light Industrial (M-1) and General Agriculture (A-2) in the northern half. The proposed NGTP is consistent with the Imperial County's current zoning, but will require a conditional use permit in the M-1 zone. The proposed NGTP is not subject to the Williamson Act.

C. Conversion of Farmland: No Impact

The project site is located on a 160-acre parcel owned by IID. The total disturbed area of the NGTP and temporary construction areas would be about 26 acres. Permanent site improvements and features associated with the final NGTP would comprise a total of about 22 acres. The project would be situated in the southwest portion of the site adjacent to the existing Niland Substation, in the industrial designated portion of the parcel. There are currently no crops grown at the project site and as stated above, the parcel has no recent history of being farmed. The nearest agricultural usage is on parcels north and northwest of the project site. The project would not involve changes that could result in conversion of farmland to non-agricultural uses. The project would not impact agricultural lands or result in the conversion of any lands that are used for agricultural purposes.

CUMULATIVE IMPACTS

The NGTP project by itself and cumulatively would not adversely impact agricultural lands or result in the conversion of agricultural land to non-agricultural uses. Additionally, there are no other known development projects in the immediate vicinity of the proposed NGTP currently under review by Imperial County Planning and Development Services (Minnick 2006). Therefore, no cumulative land use impacts are expected to result from construction and operation of the proposed project.

RESPONSES TO PUBLIC AND AGENCY COMMENTS

No comments have been received as of this writing.

CONCLUSIONS

The project would not physically divide an established community and would not conflict with any applicable habitat conservation plan. The project would not increase the use of

public parks or recreational facilities, nor would it necessitate the construction or expansion of recreational facilities. The project would not impact agricultural lands or result in the conversion of any lands that are used for agricultural purposes.

The project requires a conditional use permit to meet local land use LORS. Once IID submits a formal application to Imperial County, the County will review the application and process the conditional use permit required for IID's project. If Imperial County issues the conditional use permit, the proposed project would be consistent with the provisions of the Imperial County zoning ordinance for the M-1 zone. Therefore, with the adoption of the conditional use permit, staff expects the project's land use impacts would be less than significant.

PROPOSED CONDITIONS OF EXEMPTION

To ensure the proposed NGTP complies with Imperial County land use LORS, staff proposes the following Condition of Exemption.

LAND-1 Prior to site mobilization**,** Imperial Irrigation District shall submit an application for a conditional use permit to Imperial County.

Verification: At least 15 days prior to the start of site mobilization, Imperial Irrigation District shall transmit to the Compliance Project Manager (CPM) verification that the conditional use permit for the proposed NGTP has been approved by Imperial County.

REFERENCES

Heuberger, Jurg, AICP. Planning and Development Services Director, Imperial County. March 28, 2006 letter to Amanda Stennick.

IID2006a – Imperial Irrigation District/j federowicz (tn:36510). Submittal of the Application for Small Power Plant Exemption for the Niland Gas Turbine Plant. Submitted to CEC/B.B. Blevins/Dockets on 03/13/06.

IID2006g – Imperial Irrigation District/URS (tn:36849) First Round Data Responses Dated 04/25/06. Submitted to Dockets on 04/26/2006.

Minnick, Jim. Planning Division Manager, Imperial County Planning and Development Services Department. April 7, 2006 email to Amanda Stennick.

IID2006n – Imperial Irrigation District/D. Hahn/R. Cabanilla (tn:37707) Comment on General Plan Amendment. Dated 8/25/2006. Submitted to CEC/Dockets on 8/28/2006.

NOISE AND VIBRATION

Testimony of Steve Baker

INTRODUCTION

The construction and operation of any power plant creates noise, or unwanted sound. The character and loudness of this noise, the times of day or night that it is produced, and the proximity of the facility to sensitive receptors combine to determine whether the facility would meet applicable noise control laws and ordinances, and whether it would cause significant adverse environmental impacts. In some cases, vibration may be produced as a result of power plant operation or construction practices, such as pile driving. The ground-borne energy of vibration has the potential to cause structural damage and annoyance.

The purpose of this analysis is to identify and examine the likely noise and vibration impacts from the construction and operation of the Niland Gas Turbine Plant (NGTP), and to recommend any procedures necessary to ensure that any resulting adverse noise and vibration impacts would be adequately mitigated. (Please see **NOISE APPENDIX A**, immediately following, for explanations of common noise terminology used herein.)

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS)

In this study, the discussion of compliance with applicable LORS is used only to determine impact under the California Environmental Quality Act (CEQA), as discussed below.

FEDERAL

Under the Occupational Safety and Health Act of 1970 (OSHA) (29 U.S.C. § 651 et seq.), the Department of Labor, Occupational Safety and Health Administration (OSHA) has adopted regulations (29 C.F.R. § 1910.95) designed to protect workers against the effects of occupational noise exposure. These regulations list permissible noise exposure levels as a function of the amount of time to which the worker is exposed (see **NOISE Appendix A**, **Table A-4**, immediately following this section). The regulations further specify a hearing conservation program that involves monitoring the noise to which workers are exposed, assuring that workers are made aware of overexposure to noise, and periodically testing the workers' hearing to detect any degradation.

There are no federal laws governing off-site (community) noise.

The Federal Transit Administration (FTA) has published guidelines for assessing the impacts of ground-borne vibration associated with construction of rail projects, which have been applied by other jurisdictions to other types of projects such as power plants. The FTA-recommended vibration standards are expressed in terms of the "vibration level", which is calculated from the peak particle velocity measured from ground-borne vibration. The FTA measure of the threshold of perception is 65 VdB (velocity expressed in terms of decibels), which correlates to a peak particle velocity of about 0.002 inches per second (in/sec). The FTA measure of the threshold of architectural

damage for conventional sensitive structures is 100 VdB, which correlates to a peak particle velocity of about 0.2 in/sec.

STATE

The California Occupational Safety and Health Administration (Cal-OSHA) has promulgated Occupational Noise Exposure Regulations (Cal. Code Regs., tit. 8, §§ 5095-5099) that set employee noise exposure limits. These standards are equivalent to the federal OSHA standards.

LOCAL

The noise levels generated by the NGTP would propagate to sensitive receptors within Imperial County, including the unincorporated community of Niland. Therefore, Imperial County noise LORS apply to this project.

Imperial County General Plan Noise Element

Section IV.C of the General Plan Noise Element (Imperial County 1998b) includes Land Use Compatibility Guidelines to be used to evaluate potential noise impacts and provide criteria for findings of environmental impact. These guidelines categorize noise levels at residential land uses as "normally acceptable" up to 60 dBA L_{dn} or CNEL, and as "conditionally acceptable" up to 70 dBA L_{dn} or CNEL.

Section IV.C.2 of the Noise Element sets Property Line Noise Limits. Noise received at the property line of a receptor in a residential zone is limited to 50 dBA L_{eq} in the daytime, and 45 dBA L_{eq} at night.[1]

Section IV.C.3 of the Noise Element sets Construction Noise Standards. In the case of construction noise impacts at a sensitive receptor lasting only days or weeks, noise levels at the receptor shall not exceed 75 dBA L_{eq} when averaged over eight hours. In the case of longer-term construction, noise levels at the receptor shall not exceed 75 dBA L_{eq} when averaged over a one-hour period.

Section IV.C.4 of the Noise Element states that if the projected noise level at a sensitive receptor, including the project noise, will be within the "normally acceptable" levels stated in the Land Use Compatibility Guidelines, but will result in an increase of 5 dBA CNEL or greater, such an impact would be considered potentially significant, and additional mitigation must be considered. If the projected noise level at a sensitive receptor, including the project noise, will exceed the "normally acceptable" levels stated in the Land Use Compatibility Guidelines, and will result in an increase of 3 dBA CNEL or greater, such an impact will be considered potentially significant, and additional mitigation must be considered.

Section IV.D.8.c of the Noise Element suggests that, in the case of significant noise impacts on a single isolated receptor, appropriate mitigation may consist of construction modifications to the receptor, such as door and window modifications and installation of mechanical ventilation.

[1] The limits are specified in terms of "average sound level," which is defined to be L_{eq} (Imperial County 1998a, § 90701.00 A).

Imperial County Land Use Ordinance

The Imperial County Land Use Ordinance (Imperial County 1998a) limits the level of any sound emanating from a property at the property line. For the NGTP, which would be built on land zoned Manufacturing Light Industrial (IID 2006a, SPPE § 1.2.3; Table 6.2-1), this limit is 70 dBA (one hour average) (Imperial County 1998a, § 90702.00 A).

SETTING

The NGTP would be a simple cycle peaking power plant. Noise-producing features include two General Electric LM6000 gas turbine generators equipped with inlet air chillers, selective catalytic reduction and three natural gas fuel compressors. Included in the project would be an approximately 1,800-foot natural gas interconnection line, and an approximately 700-foot water supply line from the adjacent Golden State Water Company main (IID 2006a, SPPE §§ 1.1, 1.2.2, 1.4, 2.1, 2.2.1, 2.2.5, 2.2.7, 2.4, 2.4.1, 2.6.1, 3.1). The project site lies adjacent to the IID Niland Substation, on property owned by IID.

EXISTING LAND USE

The NGTP would be located to the northeast of Niland, an unincorporated community to the east of the Salton Sea, on a parcel zoned Manufacturing/Light Industry. The IID Niland substation lies in the southwest corner of this parcel. Surrounding land is zoned General Agriculture (IID 2006a, SPPE §§ 1.2.1, 1.2.3, 2.2).

Sensitive noise receptors in the vicinity of the project include seven single-family residences and the J and H Trailer Park (IID 2006a, SPPE §§ 6.7.1, 6.7.1.2). The three residences at noise measurement location LT-1 (see below), approximately 1,600 feet (0.3 mile) east of the site, are the sensitive receptors of greatest interest in the following analysis, as they are the nearest residential community to the project site, and would thus be exposed to the greatest noise levels. The J and H Trailer Park, approximately 2,600 feet (0.5 mile) west of the project, is the next nearest sensitive receptor, exposed to the next greatest noise levels.

EXISTING NOISE LEVELS

Initial Measurement

In order to predict the likely noise effects of the project on nearby sensitive receptors, the applicant commissioned an ambient noise survey of the area. The survey was conducted on December 19 and 20, 2005, using commonly accepted techniques and equipment. The existing noise environment is composed of traffic noise from local roads, freight trains on the nearby rail line, aircraft overflights, and noises from animals (horses, birds, etc.) and the adjacent Niland substation (IID 2006a, SPPE § 6.7.1.2).

The applicant monitored ambient noise continuously for 25 hours in the front yard of three residences at 8130 Cuff Road, 1,600 feet to the east of the project site (location LT-1), representing the nearest residential receptor (IID 2006a, SPPE §§ 6.7.1, 6.7.1.2; Table 6.7-3). Short term measurements (daytime and nighttime, one hour duration each) were also conducted at the center of the project site (location ST-1) and at two

other residential locations, one the J and H Trailer Park 2,600 feet to the west across the rail lines (location ST-2), and one a pair of residences 2,100 feet (0.4 mile) to the southeast of the site (location ST-3) (IID 2006a, SPPE §§ 6.7.1, 6.7.1.2; Table 6.7-2).

Refer to **NOISE Figure 1** for the location of these monitoring sites.

NOISE Table 1 is the applicant's summary of the ambient noise measurement results (IID 2006a, SPPE Tables 6.7-2 and 6.7-3).

NOISE Table 1
Applicant's Summary of Measured Ambient Noise Levels

Measurement Site	Measured Noise Levels, dBA		
	L_{eq}	L_{90}	L_{50}
LT-1*	49	32	38
ST-1**	62/60	42/53	54/54
ST-2**	59/51	42/42	47/46
ST-3**	55/52	45/50	46/52

*25-hour average **Daytime/Nighttime Source: IID 2006a, SPPE Tables 6.7-2 and 6.7-3

In general, the background noise environment in the vicinity of the project site is fairly quiet, typical of a rural neighborhood. Due to the relatively constant nature of power plant noise, Energy Commission staff typically compares power plant noise to the ambient background (L_{90}) noise level, averaged over the quietest four consecutive hours of the night.[2] Staff could not determine this four-hour average nighttime background level at LT-1, however, as the application reported only a single 25-hour average value for L_{90}, L_{eq} and L_{50} (IID 2006a, SPPE § 6.7.1.2, Table 6.7-3). Staff therefore issued Data Request No. 13, asking for the hourly average values of L_{eq} and L_{90} at LT-1 (CEC 2006l).

[2] Nighttime noise is examined because that is when most people are sleeping, and noise impacts would be greatest. Background level is used as a comparison because power plant noise, being unusually constant and unvarying, will typically supplant the background level. A four-hour average is employed to smooth over short-term anomalies.

The applicant's Data Response No. 13 (IID 2006g) reported the following hourly values for LT-1. These values are summarized in **NOISE Table 2**:

NOISE Table 2
Hourly Noise Levels at LT-1 (December)

Hours	Leq (dBA)	L90 (dBA)
0700 – 0800	49	36
0800 – 0900	49	38
0900 – 1000	45	37
1000 – 1100	42	33
1100 - 1200	47	29
1200 – 1300	45	28
1300 – 1400	44	30
1400 – 1500	42	31
1500 – 1600	44	30
1600 – 1700	38	28
1700 – 1800	48	32
1800 – 1900	45	28
1900 – 2000	49	29
2000 – 2100	48	29
2100 – 2200	48	27
2200 – 2300	44	27
2300 – 0000	48	28
0000 – 0100	51	29
0100 – 0200	44	27
0200 – 0300	52	27
0300 – 0400	45	30
0400 – 0500	53	35
0500 – 0600	48	34
0600 – 0700	51	37

Source: IID 2006g, Data Response 13 Shaded = Nighttime Hours

Averaging these figures during the quietest four-hour period, from 10:00 p.m. to 2:00 a.m., yields an average L_{eq} of 46.7 dBA and an average L_{90}, or background level, of 27.7 dBA.[3]

Note the wide disparity between the L_{90} and L_{eq} figures; the averages differ by 19 dBA, where some of the hourly figures differ by as much as 25 dBA (**NOISE Table 2**, 0200 – 0300 hours). This is unusual for a rural noise regime, and brings into question the applicant's ambient noise survey. Staff discussed this difference with the applicant's noise consultant, but no definitive explanation was offered.

[3] Noise levels are averaged logarithmically.

Second Measurement

In order to address staff's concerns over the ambient noise survey, the applicant commissioned a second survey, which was accomplished on June 28 and 29, 2006 (IID 2006l). The applicant believes, and staff agrees, that this survey (see **NOISE Table 3** below) more nearly represents the ambient noise regime surrounding the project site. Background (L_{90}) noise levels are greater than in the first survey, with a quietest nighttime four-hour average L_{90} at location LT-1 of 35 dBA (between the hours of 3 a.m. and 7 a.m.). Although there were periods during the survey when the disparity between L_{90} and L_{eq} levels was great (exceeding 15 dBA), the disparities were explained. The background (L_{90}) level was higher than in the December survey due to noise from crickets and frogs, and from residential air conditioners, which typically operate round the clock in the summer months. Average (L_{eq}) levels were greater than background (L_{90}) levels due to vehicular and rail traffic, and to railroad crossing bells that rang when trains were stopped some distance away.

NOISE Table 3
Hourly Noise Levels at LT-1 (June)

Hours	Leq (dBA)	L90 (dBA)
0700 – 0800	44.5	34.7
0800 – 0900	46.1	36.9
0900 – 1000	41.4	36.7
1000 – 1100	54.1	38.9
1100 - 1200	55.2	38.4
1200 – 1300	44.0	38.8
1300 – 1400	47.3	38.7
1400 – 1500	56.3	39.0
1500 – 1600	46.3	38.8
1600 – 1700	44.8	39.9
1700 – 1800	47.9	39.8
1800 – 1900	49.8	39.5
1900 – 2000	60.0	41.6
2000 – 2100	49.1	39.5
2100 – 2200	39.6	38.3
2200 – 2300	45.4	38.3
2300 – 0000	39.1	37.2
0000 – 0100	41.2	37.2
0100 – 0200	42.9	38.3
0200 – 0300	49.6	37.9
0300 – 0400	48.6	38.2
0400 – 0500	55.9	33.7
0500 – 0600	43.2	33.9
0600 – 0700	42.4	34.1

Source: IID 2006l Shaded = Nighttime Hours

This summer period is germane to this analysis of power plant impacts since the NGTP, intended to serve peaking loads that consist largely of air conditioning, is most likely to

operate in the hot months (May through October). The applicant provided information (IID 2006m) showing how the IID system peak loads vary with the seasons. Specifically, peak loads (those served by a plant such as the NGTP) vary widely during summer days. Typical system loads are depicted in **NOISE Table 4**:

NOISE Table 4: IID System Loads

	System Load (MW)		Difference (MW)
	Daytime	Nighttime	
December 19-20	341	261	80
June 28-29	785	479	306

Source: IID 2006m, p. 2

As seen in **NOISE Table 4**, the variation in daily system load in June can exceed 300 MW; daily system load in December varies much less. It can be expected that in winter, IID will utilize its more fuel-efficient (and less costly to operate) generating assets (e.g., the combined cycle El Centro Unit 2). Staff believes it appropriate to assume that the NGTP will operate chiefly in the hot season, when air conditioners see continuous use, contributing to ambient noise levels and masking power plant noise.

IMPACTS

CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA requires that significant environmental impacts be identified, and that such impacts be eliminated or mitigated to the extent feasible. Section XI of Appendix G of CEQA Guidelines (Cal. Code Regs., tit. 14, App. G) sets forth some characteristics that may signify a potentially significant impact. Specifically, a significant effect from noise may exist if a project would result in:

- exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies;
- exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or
- substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

The Energy Commission has interpreted the CEQA criteria such that noise produced by the permitted power-producing facility that causes an increase of more than 10 dBA in the background noise level (L_{90}) at a noise sensitive receptor during the quietest hours of the night is usually considered a significant effect. An increase of less than 5 dBA is typically considered an insignificant impact, while an increase from 5 to 10 dBA may be considered significant, depending on the specific circumstances.

Noise due to construction activities is usually considered to be insignificant in terms of CEQA compliance if:

- The construction activity is temporary;
- Use of heavy equipment and noisy activities is limited to daytime hours; and
- All feasible noise abatement measures are implemented for noise-producing equipment.

ANALYSIS OF IMPACTS

Noise impacts associated with the project can be created by construction activities, and by normal long-term operation of the power plant. Following is the Environmental Checklist that identifies potential impacts in this issue area. Below the checklist is a discussion of each impact, and an explanation of the impact conclusion.

ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
NOISE – Would the project result in:				
A. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		**X**		
B. Exposure of persons to or generation of excessive ground borne vibration noise levels?				**X**
C. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?		**X**		
D. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?		**X**		
E. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?				**X**
F. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the area to excessive noise levels?				**X**

DISCUSSION OF IMPACTS

A. Noise in Excess of Standards or Ordinances: Less Than Significant with Mitigation Incorporated

General Construction Noise

Construction noise is usually considered a temporary phenomenon. In this case, the construction period for the NGTP will last approximately nine months (IID 2006a, SPPE §§ 1.3, 2.2.7, 6.7.2.2).

Applicable LORS (Imperial County General Plan Noise Element, § IV.C.3) limit the loudness of construction noise to 75 dBA L_{eq} when measured at the nearest sensitive receptor, and restrict the operation of construction equipment to the hours of 7 a.m. to 7 p.m. weekdays and 9 a.m. to 5 p.m. on Saturdays. Such work is prohibited on Sundays and holidays. In addition to looking for compliance with LORS, staff compares the projected noise levels to the ambient noise levels. In this case, since construction will take place in daytime hours, it is compared to daytime ambient levels. Because construction noise is not constant, but varies with time, staff customarily compares it with the ambient L_{eq} level, a measure appropriate for evaluating varying noise levels.

The applicant's estimated L_{eq} levels at the nearest noise sensitive receptor, the residences 1,600 feet east of the site (location LT-1), are summarized in **NOISE Table 5** below (IID 2006a, SPPE § 6.7.2.2).

NOISE Table 5
Applicant's Summary of Estimated Construction Noise Levels, dBA L_{eq}

Measurement Site	Construction Noise Level	Measured Existing Ambient	Cumulative	Change from Ambient
LT-1	57	45*	57	+12

*Staff calculation, between 7 a.m. and 7 p.m., from Data Response 13 (IID 2006l)

The applicant states that construction activities for the NGTP and its associated linear facilities will occur only on weekdays between the hours of 7 a.m. and 7 p.m., and Saturdays between 9 a.m. and 5 p.m. No construction will occur on Sundays or holidays. Noise levels measured at the property lines of sensitive receptors will be less than the 75 dBA permitted in the County Noise Element. These limitations and time frames comply with local LORS (IID 2006a, §§ 2.2.7, 6.7.2.2; Imperial County General Plan Noise Element, § IV.C.3).

As seen in **NOISE Table 5** above, project construction is expected to increase the noise level at LT-1, the nearest residences, by 12 dBA, a noticeable increase. Because construction noise is temporary in nature and construction activities will occur during daytime hours, the noise effect of plant construction is considered to be insignificant. Should project construction require occasional noisy construction activities beyond the hours designated above (such as concrete pours or plant and equipment performance testing), construction noise would be limited so as not to

exceed the nighttime property line sound level limits specified in the Noise Element. For residential zones, this limit is 45 dBA (Noise Element § IV.C.2); limiting noise to 75 dBA at a distance of 50 feet will produce noise levels at the nearest residences (1,600 feet distant) of no more than 45 dBA, therefore complying with this LORS (IID 2006a, SPPE §§ 2.2.7, 6.7.2.2, 6.7.6.3.3).

Linear Facilities

Construction of linear facilities will be performed in compliance with LORS. Work will be restricted to specified hours, and equipment will be properly equipped with appropriate mufflers (IID 2006a, SPPE § 6.7.5.1).

Pile Driving Noise

Another potential source of significant construction noise is pile driving. The applicant has not yet determined whether pile driving will be required. Should it prove necessary, typical noise levels of 100 to 105 dBA at 50 feet would attenuate to 69 to 74 dBA at LT-1, the nearest sensitive receptor (IID 2006a, SPPE § 6.7.2.2, Table 6.7-5). This would comply with the applicable LORS limit of 75 dBA (Noise Element § IV.C.3).

Worker Effects

The applicant acknowledges the need to protect construction workers from noise hazards. The applicant recognizes the applicable LORS that would protect construction workers, and commits in general to complying with them (IID 2006a, SPPE § 6.7.2.2).

Power Plant Operation

As described above, the most stringent applicable LORS is the County General Plan, which establishes a limit of 45 dBA (L_{eq}), measured at the property line of the receptor, during the nighttime hours (Noise Element § IV.C.2). Since the power plant can be expected to operate long into the night while serving summertime air conditioning loads in the IID service area, comparison with this nighttime limit is appropriate.

The primary noise sources anticipated from the facility include the gas turbine generators, electrical transformers, and fuel gas compressors. The applicant has projected a project noise level at the nearest residential sensitive receptors, those residences near noise monitoring location LT-1, of 45 dBA L_{eq} (IID 2006a, SPPE § 6.7.3.2). Based on this projection, the NGTP's operational noise levels would comply with the County LORS (Imperial County 1998b, Noise Element, Land Use Compatibility Guidelines and § IV.C.2).

The project is predicted to operate within the "normally acceptable" levels of Section IV.C of the General Plan Noise Element. Additionally, project noise would result in an increase of only 2 dBA CNEL above ambient noise levels. This would constitute compliance with Section IV.C.4 of the Noise Element.

Worker Effects

The applicant recognizes the need to protect plant operating and maintenance personnel from noise hazards, and has committed to comply with applicable LORS (IID 2006a, SPPE §§ 6.7.3.3, 6.7.6.2). Signs would be posted in areas of the plant with noise levels exceeding 85 dBA (the level that OSHA recognizes as a threat to workers' hearing), and hearing protection would be required. The applicant would implement a comprehensive hearing conservation program.

B. Excessive Vibration: No Impact

General Construction

Another potential source of significant vibration during construction is pile driving. The applicant has not yet determined whether pile driving will be required (IID 2006a, SPPE § 6.7.2.3). If it should prove necessary, staff considers it highly unlikely that vibration could prove a nuisance at any residential receptors due to the distances involved. In fact, pile driving vibration should be barely perceptible at the nearest residences.

Power Plant Operation

The primary source of vibration noise associated with operation of a power plant is the turbine generators. The plant's turbine generators must be maintained in optimal balance to minimize excessive vibration that can cause damage or long term wear. Consequently, no discernible vibration would be experienced by adjacent land uses.

C. Permanent Increase in Ambient Noise Level: Less Than Significant With Mitigation Incorporated

Power Plant Operation

During its operating life, the NGTP would represent essentially a steady, continuous noise source day and night. Occasional brief increases in noise levels would occur during load changes, or during startup or shutdown as the plant transitions to and from steady-state operation. At other times, such as when the plant is shut down for lack of dispatch or for maintenance, noise levels would decrease.

As discussed above, the applicant commissioned a second ambient noise survey during June 2006 (see **NOISE Table 3**), a period when the NGTP is most likely to operate, and thus more representative of the true impacts from the project.

The applicant performed acoustical calculations to determine the facility noise emissions. The calculations were based on specific manufacturer noise data for the major equipment planned for the facility (IID 2006a, SPPE § 6.7.3.1). Specific noise mitigation measures evaluated include gas turbine air inlet silencers and gas turbine acoustic weather enclosures (IID 2006a, SPPE § 2.4.1).

NOISE Table 6 below lists the predicted project noise levels at receptor location LT-1 during plant operation and compares them to the equivalent (L_{eq}) and background (L_{90}) levels in June, when the NGTP can be expected to operate:

NOISE Table 6
Comparison of Predicted Operational Noise Levels to Ambient at LT-1 (June)

	Nighttime Ambient[1]	Project[2]	Cumulative	Change
Equivalent (L_{eq}) dBA	47	45	49	+ 2
Background (L_{90}) dBA	35		45	+10

[1] Staff calculations of four-hour averages
[2] Applicant's estimate (IID 2006a, SPPE § 6.73.2)

It is seen from these figures that the increase above the four-hour nighttime average equivalent noise level (L_{eq}) at noise monitoring location LT-1 (nearest residential receptor to the project site) due to the project would be 2 dBA. (This considers the incorporation of the mitigation measures described above and committed to by the applicant (IID 2006a, SPPE § 2.4.1).) This increase would be barely noticeable, certainly constituting a less than significant impact.

When compared to the four-hour nighttime average background (L_{90}) level, the project would result in an increase of 10 dBA, roughly a doubling in perceived noise. As explained above, staff customarily compares power plant noise to the background noise level because the uniquely steady, unvarying noise from a power plant effectively replaces the background noise. Increasing this background level by more than 10 dBA is usually considered a significant adverse impact; increasing it by 10 dBA at night, when people are sleeping, may or may not constitute a significant adverse impact requiring further mitigation.

Were the ambient noise regime near the NGTP site more homogeneous and constant, an increase of 10 dBA could be considered significant. But at the residences near the site, the drone of air conditioners (augmented by cricket and frog noise) can be expected to largely mask power plant noise. In fact, staff believes it likely that, much of the time, noise from the NGTP will not seem obtrusive to nearby residents.

Should the applicant find it necessary to further mitigate plant noise in order not to exceed the predicted noise level of 45 dBA at nearby residences, mitigation measures are commonly available for a power plant such as the NGTP. In addition to the air inlet silencers and acoustic enclosures mentioned above, further measures could include applying noise absorbing material to gas turbine intake and exhaust ducts, installing silencers on gas turbine enclosure vents and exhaust stacks, and erecting sound barriers or walls between noise-producing features of the plant and nearby sensitive receptors.

In order to ensure a project that is adequately mitigated to avoid significant adverse impacts, staff has proposed three conditions of exemption. Conditions of Exemption **NOISE-1** and **NOISE-2** would establish a public notification program and a noise complaint resolution process to ensure that any annoyance due to construction or

operation of the project is dealt with. Condition of Exemption **NOISE-3** would ensure that the project is mitigated to limit project noise at sensitive receptors to 45 dBA. This would reduce impacts to a level of insignificance.

Linear Facilities

Natural gas and water lines are buried, and thus inaudible. Electric transmission lines emit low levels of noise due to corona effect, which increases with moisture in the air. Even when the air is saturated with moisture (a rare event in this climate), corona noise is typically inaudible beyond the line's right of way. Therefore, staff believes the project's linear facilities would all be effectively silent in operation. No significant noise impacts are likely.

Tonal and Intermittent Noises

One possible source of annoyance would be strong tonal noises. Tonal noises are individual sounds (such as pure tones) that, while not louder than permissible levels, stand out in sound quality. The noise levels for the NGTP are fairly broadband, and absent of discrete tonal noise, typical of a simple cycle power plant. Therefore, the project is not expected to result in tonal noise impacts at the nearest noise sensitive receptors.

In order to ensure that after the start of operation no new pure-tone noise components will be introduced in the project, Energy Commission staff proposes Condition of Exemption **NOISE-3**, below.

D. Substantial Temporary Increase in Noise Level: Less Than Significant with Mitigation Incorporated

General Construction Noise

The applicant has prepared an analysis of construction noise impacts, listing predicted noise levels due to generalized construction activities (IID 2006a, SPPE § 6.7.2.2; Tables 6.7-4, 6.7-5). Compared to the existing daytime L_{eq} level, the predicted plant construction noise level at the nearest noise sensitive receptor, the residences at LT-1, would result in a cumulative noise level of 57 dBA, 12 dBA higher than under the ambient conditions (see **NOISE: Table 4** above). However, this resulting cumulative noise level is within normally acceptable limits for short-term noise exposures. Because construction noise is temporary in nature and construction activities will occur during daytime hours, and because feasible mitigation will have been applied by adherence to time-of-day restrictions and use of construction equipment equipped with proper mufflers, the noise effect of plant construction is considered to be less than significant.

Construction of the NGTP may require pile driving. The applicant estimates that pile driving, if needed, would produce noise levels between 69 and 74 dBA at LT-1, the nearest residences. This level complies with the LORS limits (Noise Element, Construction Noise Standards, § IV.C.3). Since this noisy work would be performed only during the daytime, and for a relatively limited period of time, staff considers it to be an insignificant adverse impact.

Linear Facilities

Construction of the linear facilities will produce noise due to the operation of heavy powered equipment. The use of powered equipment in proximity to residences will cause increases in ambient noise levels. However, because the increase in noise levels is of a temporary nature, because construction noise will occur during daytime hours, and because equipment would be properly muffled IID 2006a, SPPE § 6.7.5.1), the noise effect of linear facilities construction is considered to be less than significant.

E. Airport Noise Impacts: No Impact

The project is not near an airport; therefore there would be no impacts related to airports.

F. Private Airstrip Impacts: No Impact

The project is not near a private airstrip; therefore there would be no impacts related to private airstrips.

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. Neither the applicant nor Energy Commission staff is aware of any other similar projects in the immediate area. Since noise impacts from two projects can only accumulate if the projects are relatively near each other, i.e., within less than half a mile, staff believes no cumulative noise impacts are likely for the NGTP.

RESPONSES TO PUBLIC AND AGENCY COMMENTS

No comments have been received as of this writing.

CONCLUSIONS AND RECOMMENDATIONS

Energy Commission staff concludes that the NGTP project would comply with the applicable noise LORS and, if mitigated as proposed, would not result in significant adverse noise impacts, either direct or cumulative. Staff recommends the proposed Conditions of Exemption be adopted.

PROPOSED CONDITIONS OF EXEMPTION

NOISE-1 At least 15 days prior to the start of ground disturbance, the project owner shall notify all residents within 3,000 feet of the site and 3,000 feet of the linear facilities, by mail or other effective means, of the commencement of project construction. At the same time, the project owner shall establish a telephone number for use by the public to report any undesirable noise conditions associated with the construction and operation of the project. If the telephone is not staffed 24 hours per day, the project owner shall include an

automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This telephone number shall be posted at the project site during construction in a manner visible to passersby. This telephone number shall be maintained until the project has been operational for at least one year.

Verification: Prior to ground disturbance, the project owner shall transmit to the Imperial County Planning/Building Department a statement, signed by the project owner's project manager, stating that the above notification has been performed, and describing the method of that notification, verifying that the telephone number has been established and posted at the site, and giving that telephone number.

NOISE-2 Throughout the construction and operation of the project, the project owner shall document, investigate, evaluate, and attempt to resolve all project related noise complaints.

The project owner or authorized agent shall:

- Use the Noise Complaint Resolution Form (see Exhibit 1), or functionally equivalent procedure acceptable to the Imperial County Planning/Building Department, to document and respond to each noise complaint;
- Attempt to contact the person(s) making the noise complaint within 24 hours;
- Conduct an investigation to determine the source of noise related to complaint;
- If the noise is project related, take all feasible measures to reduce the noise at its source; and
- Submit a report documenting the complaint and the actions taken. The report shall include: a complaint summary, including final results of noise reduction efforts; and, if obtainable, a signed statement by the complainant stating that the noise problem is resolved to the complainant's satisfaction.

Verification: Within 30 days of receiving a complaint, project owner shall file a copy of the Noise Complaint Resolution Form with the Imperial County Planning/Building Department documenting the resolution of the complaint. If mitigation is required to resolve a complaint, and the complaint is not resolved within a 30-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is finally implemented.

NOISE-3 The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that operation of the project will not cause resultant noise levels due to the project to exceed 45 dBA at any existing residential receivers. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints. The production of pure tones during normal plant operation is not allowed.

Within 30 days of the project first achieving a sustained output of 80 percent or greater of rated capacity, the project owner shall conduct short-term survey

noise measurements at the LT-1, ST-2 and ST-3 monitoring sites. This survey, taken during power plant operation, shall also include measurement of one-third octave band sound pressure levels at each of the above locations to ensure that no new pure-tone noise components have been introduced.

If the results of the noise surveys indicate that noise levels at any of these receptors, caused by the project, exceed 45 dBA, mitigation measures shall be implemented to reduce noise to a level of compliance with this limit. If any pure tones are present, mitigation measures shall be implemented to eliminate the pure tones.

The measurement of power plant noise for the purpose of demonstrating compliance with this Condition of Exemption may alternatively be made at a location closer to the plant (e.g., 400 feet from the plant boundary) and this measured level then mathematically extrapolated to determine the plant noise contribution at the concerned residences. However, notwithstanding the use of this alternative method for determining the noise level, the character of the plant noise shall be evaluated at the concerned residences to determine the presence of pure tones or other dominant sources of plant noise.

Verification: Within 30 days after completing the initial survey, the project owner shall submit a summary report of the survey to the Imperial County Planning/Building Department. Included in the report shall be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limits, and a schedule, subject to Planning/Building Department approval, for implementing these measures. Within 30 days of completion of these measures, the project owner shall submit to the Planning/Building Department a summary report of a new noise survey, performed as described above and showing compliance with this condition.

REFERENCES

CEC2006l – CEC/J Caswell (tn:36664) Data Request 1 to 28 for the Niland Gas Turbine Plant Dated 4/6/06. Submitted to CEC/Dockets 4/6/06.

CEC2006m – CEC/J Caswell (tn:36725) Supplemental Data Request 29 to 36 for the Niland Gas Turbine Plant Dated 4/13/06. Submitted to CEC/Dockets 4/13/06.

CEC2006aa – CEC/J. Caswell/S. Baker (tn:36925) Report of Conversation Re: Niland Site Visit and Noise - Ambient Noise Survey. Dated 5/3/2006. Submitted to CEC/Dockets on 5/11/2006.

IID2006a – Imperial Irrigation District/ federowicz (tn:36510). Submittal of the Application for Small Power Plant Exemption for the Niland Gas Turbine Plant Dated 03/13/06. Submitted to CEC/B.B. Blevins,/Dockets on 03/13/06.

IID2006g – Imperial Irrigation District/URS (tn:36849) First Round Data Responses Dated 04/25/06. Submitted to Dockets on 04/26/2006.

IID2006l – Imperial Irrigation District/D. Diller (tn:37327) IID Supplemental Noise Analysis for the Niland Gas Turbine Plant Project. Dated 07/11/06. Submitted to CEC/Dockets on 07/11/2006.

IID2006m – Imperial Irrigation District (tn:37376) Niland Gas Turbine Plant Workshop. Dated 07/12/06. Submitted to CEC/Dockets on 07/12/2006.

Imperial County 1998a — Imperial County Land Use Ordinance, Title 9, Division 7: Noise Abatement and Control. Effective November 24, 1998.

Imperial County 1998b — Imperial County General Plan.

Imperial County 2006a – Planning And Development Services/ J. Heuberger(tn:36654) Response to CEC's 3/17/06 Facsimile Questions. Dated 3/28/06. Submitted to CEC/Dockets 4/4/06.

EXHIBIT 1 - NOISE COMPLAINT RESOLUTION FORM

Niland Gas Turbine Plant
(06-SPPE-1)

NOISE COMPLAINT LOG NUMBER _____

Complainant's name and address:

Phone number: _____

Date complaint received: _____

Time complaint received: _____

Nature of noise complaint:

Definition of problem after investigation by plant personnel:

Date complainant first contacted: _____

Initial noise levels at 3 feet from noise source _____ dBA Date: _____

Initial noise levels at complainant's property: _____ dBA Date: _____

Final noise levels at 3 feet from noise source: _____ dBA Date: _____

Final noise levels at complainant's property: _____ dBA Date: _____

Description of corrective measures taken:

Complainant's signature: _____ Date: _____

Approximate installed cost of corrective measures: $ _____

Date installation completed: _____

Date first letter sent to complainant: _____ (copy attached)

Date final letter sent to complainant: _____ (copy attached)

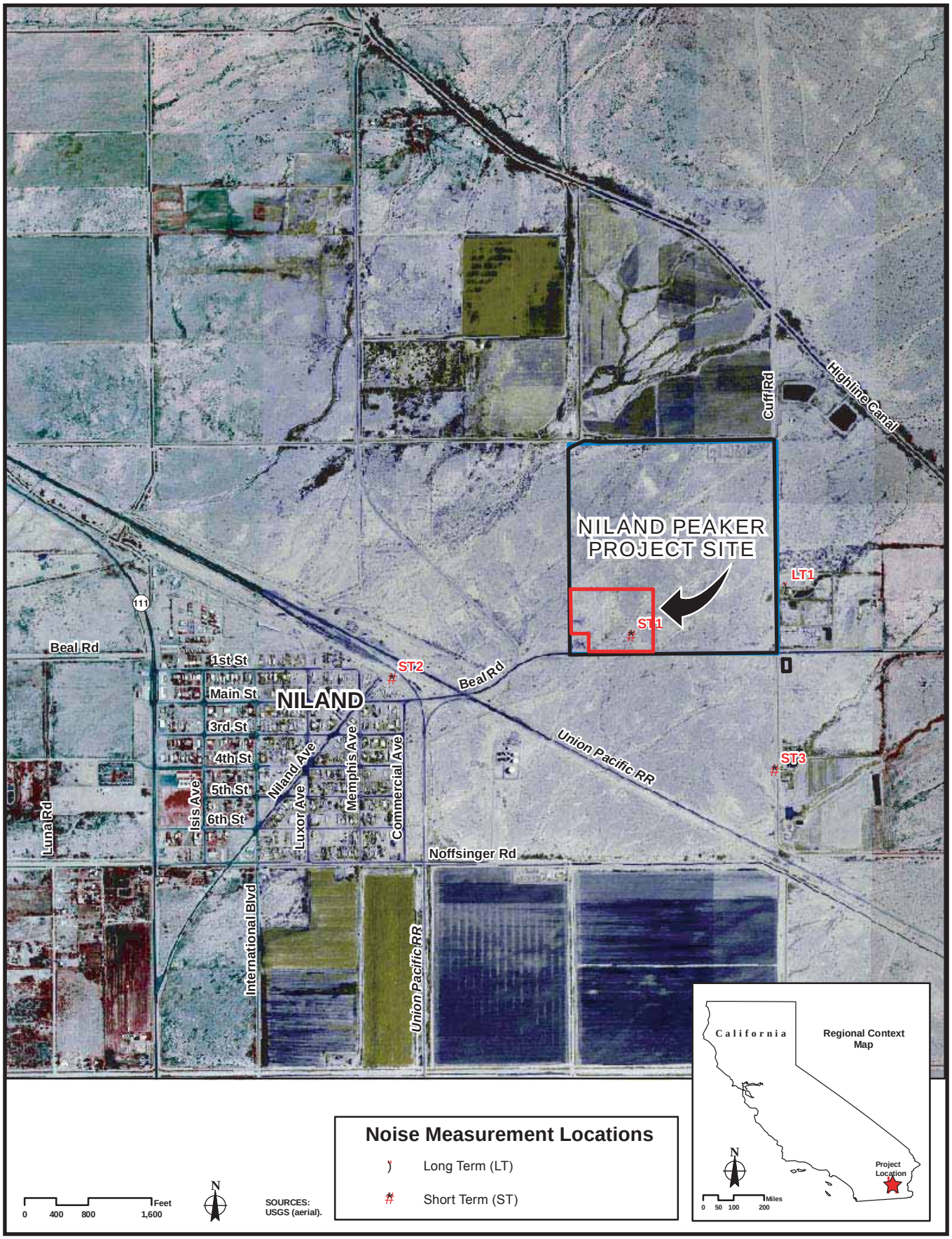
This information is certified to be correct:

Plant Manager's Signature: _____

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

NOISE AND VIBRATION - FIGURE 1

Niland Peaker Project - Noise Measurement Locations



CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, AUGUST 2006

SOURCE: AFC Figure 6.7-1

NOISE APPENDIX A
FUNDAMENTAL CONCEPTS OF COMMUNITY NOISE

To describe noise environments and to assess impacts on noise sensitive area, a frequency weighting measure, which simulates human perception, is customarily used. It has been found that A-weighting of sound intensities best reflects the human ear's reduced sensitivity to low frequencies and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. Decibels are logarithmic units that conveniently compare the wide range of sound intensities to which the human ear is sensitive. **Noise Table A-1** provides a description of technical terms related to noise.

Noise environments and consequences of human activities are usually well represented by an equivalent A-weighted sound level over a given time period (L_{eq}), or by average day and night A-weighted sound levels with a nighttime weighting of 10 dBA (L_{dn}). Noise levels are generally considered low when ambient levels are below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. Outdoor day-night sound levels vary over 50 dBA depending on the specific type of land use. Typical L_{dn} values might be 35 dBA for a wilderness area, 50 dBA for a small town or wooded residential area, 65 to 75 dBA for a major metropolis downtown (e.g., San Francisco), and 80 to 85 dBA near a freeway or airport. Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones, they nevertheless are considered to be levels of noise adverse to public health.

Various environments can be characterized by noise levels that are generally considered acceptable or unacceptable. Lower levels are expected in rural or suburban areas than what would be expected for commercial or industrial zones. Nighttime ambient levels in urban environments are about seven decibels lower than the corresponding average daytime levels. The day-to-night difference in rural areas away from roads and other human activity can be considerably less. Areas with full-time human occupation that are subject to nighttime noise, which does not decrease relative to daytime levels, are often considered objectionable. Noise levels above 45 dBA at night can result in the onset of sleep interference effects. At 70 dBA, sleep interference effects become considerable (Effects of Noise on People, U.S. Environmental Protection Agency, December 31, 1971).

In order to help the reader understand the concept of noise in decibels (dBA), **Noise Table A-2** has been provided to illustrate common noises and their associated sound levels, in dBA.

Noise Table A-1 Definition of Some Technical Terms Related to Noise	
Terms	**Definitions**
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a Sound Level Meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this testimony are A-weighted.
L_{10}, L_{50}, & L_{90}	The A-weighted noise levels that are exceeded 10%, 50%, and 90% of the time, respectively, during the measurement period. L_{90} is generally taken as the background noise level.
Equivalent Noise Level, L_{eq}	The energy average A-weighted noise level during the Noise Level measurement period.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 4.8 decibels to levels in the evening from 7 p.m. to 10 p.m., and after addition of 10 decibels to sound levels in the night between 10 p.m. and 7 a.m.
Day-Night Level, L_{dn} or DNL	The Average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10 p.m. and 7 a.m.
Ambient Noise Level	The composite of noise from all sources, near and far. The normal or existing level of environmental noise at a given location.
Intrusive Noise	That noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.
Pure Tone	A pure tone is defined by the Model Community Noise Control Ordinance as existing if the one-third octave band sound pressure level in the band with the tone exceeds the arithmetic average of the two contiguous bands by 5 decibels (dB) for center frequencies of 500 Hz and above, or by 8 dB for center frequencies between 160 Hz and 400 Hz, or by 15 dB for center frequencies less than or equal to 125 Hz.

Source: Guidelines for the Preparation and Content of Noise Elements of the General Plan, Model Community Noise Control Ordinance, California Department of Health Services 1976, 1977.

Noise Table A-2 Typical Environmental and Industry Sound Levels			
Noise Source (at distance)	A-Weighted Sound Level in Decibels (dBA)	Noise Environment	Subjective Impression
Civil Defense Siren (100')	140-130		Pain Threshold
Jet Takeoff (200')	120		Very Loud
Very Loud Music	110	Rock Music Concert	
Pile Driver (50')	100		
Ambulance Siren (100')	90	Boiler Room	
Freight Cars (50')	85		
Pneumatic Drill (50')	80	Printing Press Kitchen with Garbage Disposal Running	Loud
Freeway (100')	70		Moderately Loud
Vacuum Cleaner (100')	60	Data Processing Center Department Store/Office	
Light Traffic (100')	50	Private Business Office	
Large Transformer (200')	40		Quiet
Soft Whisper (5')	30	Quiet Bedroom	
	20	Recording Studio	
	10		Threshold of Hearing

Source: Handbook of Noise Measurement, Arnold P.G. Peterson, 1980

Subjective Response to Noise

The adverse effects of noise on people can be classified into three general categories:

- Subjective effects of annoyance, nuisance, dissatisfaction.
- Interference with activities such as speech, sleep, and learning.
- Physiological effects such as anxiety or hearing loss.

The sound levels associated with environmental noise, in almost every case, produce effects only in the first two categories. Workers in industrial plants can experience noise effects in the last category. There is no completely satisfactory way to measure the subjective effects of noise, or of the corresponding reactions of annoyance and dissatisfaction, primarily because of the wide variation in individual tolerance of noise.

One way to determine a person's subjective reaction to a new noise is to compare the level of the existing (background) noise, to which one has become accustomed, with the level of the new noise. In general, the more the level or the tonal variations of a new noise exceed the previously existing ambient noise level or tonal quality, the less acceptable the new noise will be, as judged by the exposed individual.

With regard to increases in A-weighted noise levels, knowledge of the following relationships can be helpful in understanding the significance of human exposure to noise.

Except under special conditions, a change in sound level of one dB cannot be perceived.
Outside of the laboratory, a three dB change is considered a barely noticeable difference.
A change in level of at least five dB is required before any noticeable change in community response would be expected.
A ten dB change is subjectively heard as an approximate doubling in loudness and almost always causes an adverse community response. (Kryter, Karl D., The Effects of Noise on Man, 1970)

Combination of Sound Levels

People perceive both the level and frequency of sound in a non-linear way. A doubling of sound energy (for instance, from two identical automobiles passing simultaneously) creates a three dB increase (i.e., the resultant sound level is the sound level from a single passing automobile plus three dB). The rules for decibel addition used in community noise prediction are:

Noise Table A-3
Addition of Decibel Values

When two decibel values differ by:	Add the following amount to the larger value
0 to 1 dB	3 dB
2 to 3 dB	2 dB
4 to 9 dB	1 dB
10 dB or more	0
Figures in this table are accurate to ± 1 dB.	

Source: Architectural Acoustics, M. David Egan, 1988

Sound and Distance

Doubling the distance from a noise source reduces the sound pressure level by six dB.

Increasing the distance from a noise source ten times reduces the sound pressure level by 20 dB.

Worker Protection

OSHA noise regulations are designed to protect workers against the effects of noise exposure, and list permissible noise level exposure as a function of the amount of time to which the worker is exposed:

Noise Table A-4
OSHA Worker Noise Exposure Standards

Duration of Noise (Hrs/day)	A-Weighted Noise Level (dBA)
8.0	90
6.0	92
4.0	95
3.0	97
2.0	100
1.5	102
1.0	105
0.5	110
0.25	115

Source: 29 C.F.R. § 1910.95

PUBLIC HEALTH

Testimony of Alvin Greenberg, Ph.D.

INTRODUCTION

The purpose of staff's public health analysis is to determine if toxic air contaminants from routine operation of the proposed Niland Gas Turbine Plant (NGTP) will have the potential to cause significant adverse public health impacts in the surrounding area. If potentially significant health impacts are identified, staff will evaluate the mitigation measures necessary to reduce such impacts to insignificant levels. Impacts on public and worker health from accidental releases of hazardous materials are examined in the **Hazardous Materials Management** section. This **Public Health** section is organized to include a description of the method for analyzing potential health impacts, the criteria used to determine their significance, and a brief characterization of NGTP along with discussions regarding selected checklist items addressing the topical areas of concern. It concludes that the project will have no significant impacts and therefore staff has no recommended conditions of exemption.

METHOD OF ANALYSIS

Staff is concerned about toxic air contaminants to which the public could be exposed during project construction and routine operation. Following the release of toxic contaminants into the air or water, people may come into contact with them through inhalation, dermal (skin) contact, or ingestion via contaminated food or water.

Air pollutants for which no air quality standards have been set are called noncriteria pollutants. Unlike criteria pollutants such as ozone, carbon monoxide, sulfur dioxide, or nitrogen dioxide, noncriteria pollutants have no ambient (outdoor) air quality standards that specify levels considered safe for everyone.

Since noncriteria pollutants do not have such standards, a process known as health risk assessment is used to determine if people might be exposed to those types of pollutants at unhealthy levels. The risk assessment procedure consists of the following steps:

1. identifying the types and amounts of hazardous substances that NGTP could emit into the environment;

2. estimating worst-case concentrations of project emissions into the environment using dispersion modeling;

3. estimating the amounts of pollutants to which people could be exposed through inhalation, ingestion, and dermal contact; and

4. characterizing the potential health risks by comparing worst-case exposure to safe standards based on known health effects.

Initially, a screening level risk assessment is performed using simplifying assumptions that are intentionally biased toward protection of public health. That is, an analysis is

designed that overestimates potential public health impacts from exposure to project emissions. In reality, it is likely that the actual risks from the power plant would be much lower than the risks estimated from the screening level assessment. This conservative estimation is accomplished by examining conditions that would lead to the highest, or worst-case risks, and then assuming those conditions for the study. This approach involves:

- using the highest levels of pollutants that could be emitted from the plant;
- assuming weather conditions that would lead to the maximum ambient concentration of pollutants;
- using the type of air quality computer model which predicts the greatest plausible impacts;
- calculating health risks at the location where the pollutant concentrations are calculated to be the highest;
- using health-based standards designed to protect the most sensitive members of the population (i.e., the young, elderly, and those with respiratory illnesses); and
- assuming that an individual's exposure to cancer-causing agents occurs for 70 years.

A screening level risk assessment will, at a minimum, include the potential health effects from inhaling hazardous substances. Some facilities may also emit certain substances that could present a health hazard from non-inhalation pathways of exposure (OEHHA 2003, Tables 5.1, 6.3, 7.1). When these substances are present in facility emissions, the screening level analysis would include additional exposure pathways such as soil ingestion, dermal exposure, and mother's milk (OEHHA 2003, p. 5-3).

The risk assessment process addresses three categories of health impacts: acute (short-term) health effects, chronic (long-term) noncancer effects, and cancer risk (also long-term). Acute health effects result from short-term (1-hour) exposure to relatively high concentrations of pollutants. Acute effects are temporary in nature, and include symptoms such as irritation of the eyes, skin, and respiratory tract.

Chronic health effects are those which arise from long-term exposure to lower concentrations of pollutants. The exposure period is considered to be approximately from 12 to 100 percent of a lifetime, or from eight to 70 years (OEHHA 2003, p. 6-5). Chronic health effects include diseases such as reduced lung function and heart disease.

The analysis for noncancer health effects compares the maximum project contaminant levels to safe levels called "reference exposure levels" or RELs. These are the amounts of toxic substances to which nearly all people can be exposed and suffer no adverse health effects (OEHHA 2003, p. 6-2). These include sensitive members of the population such as infants, the aged, and people suffering from illness or disease, which makes them more sensitive to the effects of toxic substance exposure. RELs are based on the most sensitive adverse health effects reported in the medical and toxicological literature, and include specific margins of safety incorporated to address the uncertainties associated with inconclusive scientific and technical information available

at the time of standard setting. They, therefore, are meant to provide a reasonable degree of protection against hazards that research has not yet identified. Each margin of safety is designed to prevent pollution levels that have been demonstrated to be harmful, as well as to prevent lower pollutant levels that may pose an unacceptable risk of harm, even if the risk is not precisely identified as to nature or degree. Health protection is assumed if the estimated worst-case exposure is below the relevant reference exposure level. In such a case, an adequate margin of safety is assumed to exist between the predicted exposure and the estimated threshold dose for toxicity.

Exposure to multiple toxic substances may result in health effects that are equal to, less than, or greater than effects resulting from exposure to the individual chemicals. Only a small fraction of the thousands of potential combinations of chemicals have been tested for the health effects of combined exposures. The health risk assessment assumes that the effects of each substance are additive for a given organ system (OEHHA 2003, pp. 1-5, 8-12). Other possible mechanisms due to multiple exposures include those cases where the actions may be synergistic or antagonistic (where the effects are greater or less than the sum, respectively) (Id). For these types of substances, the health risk assessment could underestimate or overestimate the risks.

For carcinogenic substances, the health assessment considers the risk of developing cancer and assumes that continuous exposure to the cancer-causing substance occurs over as long as a 70-year lifetime. The risk that is calculated is not necessarily meant to project the actual expected incidence of cancer, but rather as a theoretical upper-bound number based on worst-case assumptions. In reality, the risk would be generally too small to actually be measured. For example, a ten in one million significant risk level represents a ten in one million increase in the normal risk of developing cancer over a lifetime, at whatever location is estimated to have the worst-case risk.

Cancer risk is expressed in terms of chances per million, and is a function of the maximum expected pollutant concentration, the probability that a particular pollutant will cause cancer (called a “potency factor” and established by the California Office of Environmental Health Hazard Assessment), and the length of the exposure period. Cancer risks for the individual carcinogens are added together to yield a total cancer risk for the source being considered. The conservative nature of the screening level assumptions used means that actual cancer risks would likely be lower or even considerably lower than those estimated.

The screening analysis was performed for the proposed NGTP to assess the worst-case risks to public health as possible from its operation. Whenever the screening analysis predicts no significant risks, no further analysis would be required. However, if risks were above the significance level, then further analysis, using more site-specific assumptions, would be performed to obtain a more accurate assessment of the health risks in question.

SIGNIFICANCE CRITERIA

Commission staff assesses the health effects of exposure to toxic emissions based on potential impacts on the maximally exposed individual. This is a person hypothetically exposed to project emissions at a location where the highest ambient impacts were calculated using worst-case assumptions, as noted above.

As described earlier, noncriteria pollutants are evaluated for short-term (acute) and long-term (chronic) noncancer health effects, as well as cancer (long-term) health effects. The potential significance of project-related health impacts is determined separately for each of the three categories of health effects.

Acute and Chronic Noncancer Health Effects

Staff assesses the significance of noncancer health effects by calculating a "hazard index" for the exposures in question. A hazard index is a ratio obtained by comparing exposure from facility toxic emissions to the reference (safe) exposure level. A ratio of less than one signifies a worst-case exposure potentially below the safe level. The hazard indices for all toxic substances with the same types of health effect are added together to yield a total hazard index for all exposures. The total hazard index is calculated separately for acute and chronic effects. A total hazard index of less than one suggests that cumulative worst-case exposures would be less than the reference exposure levels (safe levels). Under these conditions, health protection would be assumed likely even for sensitive members of the population. In any such case, staff would assume that there would be no significant noncancer project-related public health impacts.

Cancer Risk

Staff relies upon regulations implementing the provisions of Proposition 65, the Safe Drinking Water and Toxic Enforcement Act of 1986 (Health & Safety Code, §§ 25249.5 et seq.) for guidance in assessing the potential for a significance cancer risk. Title 22, California Code of Regulations, § 12703(b) states that "the risk level which represents no significant risk shall be one which is calculated to result in one excess case of cancer in an exposed population of 100,000, assuming lifetime exposure." This level of risk is equivalent to an incremental cancer risk of ten in one million, or 10×10^{-6}. An important distinction is that the Proposition 65 significance level applies separately to each cancer-causing substance, whereas staff determines significance based on the total risk from all cancer-causing chemicals. Thus, the manner in which the significance level is applied by staff is more conservative (health-protective) than that which applies to Proposition 65.

The significant risk level of ten in one million is consistent with the level of significance adopted by various state Air Pollution Control Districts pursuant to Health and Safety Code § 44362(b), which requires notification of nearby residents when an Air Quality Management District determines that there is a significant health risk from a given facility. The Imperial County Air Pollution Control District (ICAPCD), which has jurisdiction over Imperial County and hence the project area, does not have a rule designating a significant risk level. Instead, it follows the ARB and South Coast Air Quality Management District's (SCAQMD) rule. For new or modified sources with best available toxics control technology (TBACT), the SCAQMD's significance criterion is 10 in a million but 1 in a million for those without such controls. The state's air pollution control districts would generally not approve a project with a cancer risk exceeding ten in one million.

As noted earlier, the initial risk analysis for a project is typically performed at a screening level, which is designed to overstate actual risks, so that health protection

can be assured. When a screening level analysis shows cancer risks to be above the significance level, using refined assumptions would likely result in a lower, more realistic risk estimate. If facility risk, based on refined assumptions, were to exceed the significance level of ten in one million, staff would require appropriate measures to reduce the risk to less than significant. If, after all risk reduction measures have been considered, a refined analysis identifies a cancer risk of greater than ten in one million, staff would deem such risk to be significant, and would not recommend project approval.

SETTING

This section describes the environment in the vicinity of NGTP from the public health perspective as discussed by the applicant, the Imperial Irrigation District (IID). Features of the natural environment, such as meteorology and terrain, affect the project's potential for causing impacts on public health. For example, an emissions plume from a facility may impact elevated areas before lower terrain areas because of a reduced opportunity for atmospheric mixing. Consequently, areas of elevated terrain can often be subjected to increased pollutant impacts. Also, the types of land use near a site can influence the surrounding population distribution and density, which in turn, can affect public exposure to project emissions. Additional factors affecting potential public health impacts include existing air quality and site contamination.

SITE AND VICINITY DESCRIPTION

According to information from the applicant (IID2006a, pp. 1-1, 2-2, 2-3, 6.8-2), the proposed NGTP site is located northeast of the town of Niland and east of the Salton Sea, on a 22-acre parcel of land located within the 160-acre property owned by IID, and adjacent to the existing Niland Substation. The northern half of the IID property is zoned General Agricultural and the southern portion, which includes the proposed project site, is zoned Manufacturing Light Industrial. Within a 3-mile radius of the proposed project location, land use is primarily cultivated farmlands. The property is relatively flat with an elevation of approximately 105 feet below sea level.

As mentioned above, the location of sensitive receptors near any proposed project is an important factor in considering potential public health impacts. The nearest sensitive receptor is identified as the Niland Family Health Center, located approximately 0.5 mile southwest of the proposed project location. The nearest residence is located approximately 1,560 feet due east of the project fenceline (IID2006a, p 6.8-2).

METEOROLOGY

Meteorological conditions, including wind speed, wind direction, and atmospheric stability, affect the extent to which pollutants are dispersed into ambient air as well as the direction of pollutant transport. These, in turn, affect the level of public exposure to emitted pollutants and associated health risks. When wind speeds are low and the atmosphere is stable, for example, dispersion is reduced and localized exposure may be increased.

As discussed by the applicant (IID2006a, pp 6.1-2, 6.1-3), the climate at the project site is a desert climate characterized by hot summers, mild winters, low humidity, and low

precipitation. This climate is dominated by the influence of the Pacific high-pressure system, which is a semi-permanent, subtropical high-pressure system located over the Pacific Ocean. The San Jacinto and Santa Rosa mountain ranges to the northwest and west separate Imperial County from the coastal regions, and effectively remove moisture from the air flowing from the Pacific Ocean. In the summer months, the Pacific high blocks migrating storm systems, resulting in negligible precipitation. The Pacific high moves south during the winter months and frontal systems can move in, carrying the majority of the area's precipitation (annual average of approximately 3 inches). Early morning surface inversions occur almost daily in the Salton Sea valley area, which causes air stagnation. Solar heating usually breaks the inversions by noon. Prevailing winds are from the west and west-southwest.

Atmospheric stability is a measure related to turbulence, or the ability of the atmosphere to disperse pollutants due to convective air movement. Mixing heights (the height above ground level through which the air is well mixed and in which pollutants can be dispersed) are lower during mornings due to temperature inversions and increase during the warmer afternoons. Staff's **Air Quality** section presents a more detailed assessment of the area's meteorological conditions.

EXISTING AIR QUALITY

The proposed NGTP site, as previously noted, is within the jurisdiction of the ICAPCD (Imperial County Air Pollution Control District).

By considering average toxic concentration levels together with cancer risk factors specific to each carcinogen, lifetime cancer risk can be calculated to provide a background area risk level for inhalation of ambient air. Based, for example, on the levels of toxic air contaminants measured at the air toxics monitoring station in Calexico, Imperial County in 1996, the area's background cancer risk from emitted air toxics was calculated as 443 in one million (CARB 2006). The most important air toxics in this regard are from mobile vehicles and include 1,3 -butadiene, benzene and formaldehyde. Staff notes for comparison purposes that the overall lifetime cancer risk for the average individual in the U.S. is about 1 in 4, or 250,000 in a million.

SITE CONTAMINATION

Site disturbances will occur during facility construction from excavation, grading, and earth moving. Such activities have the potential to adversely affect public health through various mechanisms, such as the creation of contaminated dust, erosion-related transport of toxic materials to areas of human habitation, and chemical releases from buried containers.

As discussed by the applicant (IID2006a, pp 6.10-2, 6.10-3), the project site is largely undeveloped land and is not located in an area designated as prime farmland or farmland of statewide importance. A Phase I Environmental Site Assessment (ESA) was conducted at the proposed project site in July 2005 to identify any indications of chemical contamination that might have resulted from past industrial activities at the site (IID2006a, Appendix K). Waste Management Data Response 25 indicates that electrical transformers were present within the existing Niland Substation dating back as far as 1954 and that they were potentially equipped with PCB-containing oils (polychlorinated

biphenyls). Since small, localized areas of ground disturbance may occur in the area of the tie-in to the existing substation, the Applicant has prepared a Scope of Work and Schedule for limited Phase II investigative activities in this area to identify potential PCB contamination and will conduct any necessary clean-up activities. The Applicant further states that review of historical aerial photos does not indicate past agricultural production at the site and that easements involving pipelines at the site were not for transportation of PAHs (polynuclear aromatic hydrocarbons) or petroleum-based fuels, but rather for transport of water or natural gas, obviating the need for Phase II investigative activities for pesticides, petroleum hydrocarbons and fuels. Staff addresses this issue in greater detail in the **Waste Management** section of this Staff Assessment.

IMPACTS

The following Environmental Checklist identifies potential impacts to public health. Following the table is a discussion of the potential impacts and a discussion of proposed mitigation measures as necessary.

ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
PUBLIC HEALTH – Would the project cause the surrounding population to be exposed to airborne diseases and/or toxic air contaminants at levels hazardous to health during:				
Construction			X	
Operations			X	

ANALYSIS AND DISCUSSION OF IMPACTS

The proposed NGTP would be regarded as posing a significant risk to public health if it would cause the surrounding population to be exposed to airborne diseases and/or toxic air contaminants at levels capable of deleterious health impacts.

The basis for the outcomes noted in the checklist is discussed below.

Construction: Less than Significant Impact

Potential risks to public health during construction may be associated with exposure to toxic substances in contaminated soil disturbed during site preparation, as well as from emissions from heavy equipment operation. Criteria pollutant impacts from such equipment and particulate matter from earth moving activities are examined in staff's **Air Quality** analysis.

As noted above and more fully discussed in the **Waste Management** section of this Initial Study, the possible absence of chemical contamination means that the construction and other ground-disturbing activities would not pose a significant risk of dust-related chemical exposure. However, this issue has not yet been resolved.

Construction equipment emissions will include both the noted criteria pollutants and the noncriteria pollutants, all of which are associated with diesel-fueled engines. The criteria

component includes nitrogen oxides, carbon monoxide, and sulfur oxides. The noncriteria pollutant fraction includes diesel exhaust, a complex mixture of thousands of gases and fine particles. These particles are primarily made up of aggregates of spherical carbon particles coated with organic and inorganic substances. Studies have shown that diesel exhaust contains over 40 substances that are listed by the U.S. EPA as hazardous air pollutants and by the Air Resources Board (ARB) as toxic air contaminants.

Exposure to diesel exhaust can cause both short-term and long-term adverse health effects. The short-term effects can include increased coughing, labored breathing, chest tightness, wheezing, and eye and nasal irritation. Long-term effects can include increased coughing, chronic bronchitis, reductions in lung function, and inflammation of the lung. Epidemiological studies also suggest a strong causal relationship between occupational diesel exhaust exposure and lung cancer.

Based on a number of health effects studies, the Scientific Review Panel on Toxic Air Contaminants (SRP) recommended a chronic REL (see REL discussion in Method of Analysis section above) for diesel exhaust particulate matter of 5 $\mu g/m^3$ and a cancer unit risk factor of $3x10^{-4}$ $(\mu g/m^3)^{-1}$ (SRP 1998, p. 6). The SRP did not recommend a value for an acute REL, since available data in support of a value was deemed insufficient. On August 27, 1998, the ARB listed particulate emissions from diesel-fueled engines as a toxic air contaminant and approved SRP's recommendations regarding health effect levels.

Construction of the NGTP is anticipated to take place over a period of 9 months (IID2006a, p. 2-5). As noted earlier, assessment of chronic (long-term) health effects assumes continuous exposure to toxic substances over a significantly longer time period, typically from eight to 70 years.

Details of the exhaust emission levels for the varying construction activities were also provided in Appendix B (IID2006a). The main sources would include trucks, excavators, cranes, welding machines, electric generators, and air compressors. The maximum carcinogenic risk from exposure to diesel emissions during the 9-month construction period was not identified in the AFC.

In order to mitigate potential impacts from particulate emissions during the operation of diesel-powered construction equipment, mitigation is proposed in the **Air Quality** section of this Staff Assessment. In that section, staff recommends the use of ultra low sulfur diesel fuel and California Tier 1 diesel engines. As reflected in the information from the applicant, there are no sensitive receptors in the project's immediate impact area. Since the impacts from such construction activities typically occur within a very short distance of its operation, often within the fenceline as with this project, no significant impacts to public health are anticipated and thus no further mitigation is proposed.

Operation: Less than Significant Impact

Emissions Sources

The major emissions sources for the proposed NGTP are its two gas turbines and the ammonia slip-stream from the selective catalytic reduction (SCR) NO_x control system (IID2006a, p 6.8-4). Secondary sources include the emergency diesel firewater pump engine and the natural gas-fired black start engine, both of which are operated for short periods of time on a regular basis to ensure operability. During operations, potential public health risks would be related to the products of natural gas combustion and diesel fuel consumption.

As noted earlier, the first step in a health risk assessment is to identify the potentially toxic compounds that may be emitted from the facility. The applicant has provided a listing of the noncriteria pollutants that may be emitted along with the toxicity values used to characterize cancer and noncancer health impacts from project pollutants (IID2006a, pp. 6.8-6 through 6.8-8). It is from these that the short-term and long-term noncancer health risk can be calculated along with the potential cancer risk. **Public Health Table 1** lists toxic emissions and itemizes the potential health impacts of each. For example, the first row shows that oral exposure to acetaldehyde is not of concern, but if inhaled, the chemical may have cancer and chronic (long-term) noncancer health effects, but not acute (short-term) effects.

PUBLIC HEALTH Table 1
Types of Health Impacts and Exposure Routes Attributed to Toxic Emissions

Substance	Oral Cancer	Oral Noncancer	Inhalation Cancer	Noncancer (Chronic)	Noncancer (Acute)
Acetaldehyde			✓	✓	
Acrolein				✓	✓
Ammonia				✓	✓
Benzene			✓	✓	✓
1,3-Butadiene			✓	✓	
Ethylbenzene				✓	
Hexane				✓	
Formaldehyde			✓	✓	✓
Naphthalene	✓	✓	✓	✓	
PAHs	✓		✓	✓	
Propylene				✓	
Propylene oxide			✓	✓	✓
Toluene				✓	✓
Xylene				✓	✓
Diesel Particulate			✓	✓	

Source: IID2006a, Table 6.8-1.

Emissions Levels

Once potential emissions are identified, the first step is to quantify them by conducting the previously noted "worst case" analysis to assess the need for further analysis. Maximum hourly emissions are required to calculate acute (one-hour) noncancer health effects, while estimates of maximum emissions on an annual basis are required to calculate cancer and chronic (long-term) noncancer health effects.

The next step in the health risk assessment process is to estimate the ambient concentrations of toxic substances in question. For the proposed NGTP, air dispersion modeling was used to estimate the ambient concentrations of these substances. These ambient concentrations were then used in conjunction with RELs and cancer unit risk factors to estimate health effects which might occur from exposure to facility emissions. Exposure pathways, or the ways in which people might come into contact with toxic substances, include: inhalation, dermal (through the skin) absorption, soil ingestion, consumption of locally grown plant foods, and mother's milk.

Impacts

The screening health risk assessment for the project, including combustion and noncombustion emissions, resulted in a maximum acute hazard index of 0.818 (IID2006g). The chronic hazard index at the point of maximum impact is 0.0106. As **Public Health Table 2** shows, both of these acute and chronic hazard indices are below the reference exposure level of 1.0, indicating that no short-term or long-term adverse health effects are expected.

Total worst-case individual cancer risk from facility operation as shown in **Public Health Table 2** is estimated to be 1.49 in one million. As discussed earlier, this is the risk at the location where long-term pollutant concentrations are calculated to be the highest for facility emissions.

PUBLIC HEALTH Table 2
Operation Hazard/Risk

Type of Hazard/Risk	Hazard Index/Risk for Project	Standard Significance Level	Significant?
Acute Noncancer	0.818	1.0	No
Chronic Noncancer	0.0106	1.0	No
Individual Cancer	1.49×10^{-6}	10×10^{-6}	No

Source: IID2006a, Revised Table 6.8-5

Staff conducted an independent assessment of the risks and hazards reported above using the facility data and meteorological files provided by the applicant. Modeling was conducted using the CARB/OEHHA Hotspots Analysis and Reporting Program (HARP), which was also used by the applicant. No significant differences in cancer risk, chronic hazard or acute hazard were found in the staff analysis compared to the results above.

CUMULATIVE IMPACTS

The maximum impact location would be where pollutant concentrations from NGTP would theoretically be the highest. Even at this location, staff does not expect any significant change in lifetime risk to any person, and the increase of 1.49 in a million does not represent any real contribution to the noted average lifetime cancer risk of 250,000 in a million. Modeled facility-related risks are lower at all other locations, and actual risks are expected to be much lower, since worst-case estimates are based on conservative assumptions, and overstate the true magnitude of the risk expected. Therefore, staff does not consider the incremental impact of the additional risk posed by the NGTP to be either significant or cumulatively considerable.

The worst-case chronic noncancer health impact from the NGTP (of 0.0106 hazard index) is well below the significance level of 1.0 at the location of maximum impact. Similarly, the worst-case acute health impact of 0.818 is below the significance level of 1.0. At these levels, staff does not expect any cumulative health impacts to be significant. As with cancer risk, long-term hazard would be lower at all other locations and cumulative impacts at other locations would also be less than significant.

RESPONSE TO PUBLIC AND AGENCY COMMENTS

None received.

CONCLUSIONS

Staff has analyzed potential public health risks associated with construction and operation of the proposed NGTP. Staff does not expect there to be any significant adverse cancer or short or long-term noncancer health effects from project emissions.

PROPOSED CONDITIONS OF EXEMPTION

None proposed.

REFERENCES

CARB 2006. California Air Resources Board. Annual Toxics Summaries, http://www.arb.ca.gov/adam/toxics/toxics.html.

IID2006a – Imperial Irrigation District/j. federowicz (tn:36510). Submittal of the Application for Small Power Plant Exemption for the Niland Gas Turbine Plant Dated 03/13/06. Submitted to CEC/B.B. Blevins,/Dockets on 03/13/06.

IID2006g – Imperial Irrigation District/URS (tn:36849) First Round Data Responses Dated 04/25/06. Submitted to Dockets on 04/26/2006.

OEHHA 2003. Office of Environmental Health Hazard Assessment. Air Toxics Hot Spots Program Risk Assessment Guidelines. The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. August.

SRP 1998. Scientific Review Panel on Toxic Air Contaminants. Findings of the Scientific Review Panel on the Report on Diesel Exhaust as adopted at the Panel's April 22, 1998 Meeting.

Title 22, California Code of Regulations, March 20, 2001.

SOCIOECONOMICS

Testimony of Joseph Diamond, Ph. D.

INTRODUCTION

This California Energy Commission staff socioeconomic impact analysis evaluates the project induced changes on community services and/or infrastructure and related community issues such as environmental justice (EJ). Direct, indirect, induced, and cumulative impacts are also included. Staff discusses the estimated impacts of the construction and operation of the Niland Gas Turbine Project (NGTP) project on local communities, community resources, and public services. The NGTP power plant would be owned and operated by Imperial Irrigation District (IID), a local public agency.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

CALIFORNIA GOVERNMENT CODE, SECTIONS 65996-65997

These sections include provisions for school district levies against development projects. As amended by SB 50 (Stats. 1998, ch. 407, sec. 23), these sections state that except for those fees established under Education Code 17620, public agencies at the state level may not impose fees, charges, or other financial requirements to offset the cost for school facilities.

SETTING

DEMOGRAPHIC CHARACTERISTICS

The project site is located just outside the community of Niland in northwest unincorporated Imperial County. Imperial County population was 142,361 in 2000 and is projected to be 214,386 in 2020. The Imperial County population growth rate from 2000-2020 is projected to be higher than the statewide growth rate over that time period. Riverside County population was 1,548,387 in 2000 and is projected to be 2,675,648, which is above the statewide growth rate over that time period. San Diego County population was 2,498,016 in 2000 and is projected to be 3,633,572 in 2020 which is slightly lower than the statewide growth rate over that time period. The community of Niland had a 2000 population of 1,143 (US Census Bureau 2000 Niland CDP California). **SOCIOECONOMICS Table 1** shows the historical and projected populations for the three county study area and the state.

SOCIOECONOMICS Table 1
Historical and Projected Populations

Area	1990 Population	2000 Population	2005 Population	2020 Population
Imperial County	109,303	142,361	161,800	214,386
Riverside County	1,170,413	1,545,380	1,877,000	2,675,648
San Diego County	2,498,016	2,813,833	3,051,280	3,633,572
California	29,758,213	33,871,648	36,810,358	43,851,741

Source: IID2006a.

SOCIOECONOMICS Table 2 and **Socioeconomics Figure 1** shows the minority and below poverty level populations within the one mile and six-mile radius of the proposed project, Imperial County, Riverside County and the state. See **Socioeconomics Figure 1**.

SOCIOECONOMICS Table 2
2000 Minority and Persons below Poverty Level

Area	% Minority	% Persons below poverty level
One-mile radius	61.53	21.14
Six-mile radius	69.39	22.11
Imperial County	80	23
Riverside County	49	14
San Diego County	45	12
California	53	14

Source: IID2006a, California Energy Commission Statewide Transmission & Power Plant Maps 2006, Census 2000 PL-171 Data-Matrix PL2.

The minority population within one mile of the site is 61.53 percent which is somewhat lower than the 80 percent minority population of Imperial County but more than the state. The population below the poverty level is 21.14 percent within one mile of the site, which is slightly lower than the 23 percent for Imperial County and somewhat more than that of the state.

The minority population within six miles of the site is 69.39 percent which is somewhat lower than the 80 percent minority population of Imperial County but more than the state. The population below the poverty level is 22.11 percent within six miles of the site, which is slightly lower than the 23 percent for Imperial County and somewhat more than that of the state.

EMPLOYMENT AND ECONOMY

SOCIOECONOMICS Table 3 shows employment data for the study area and the state. Data from the California Employment Development Department (EDD) show that the unemployment rate for Imperial County is higher than the unemployment rate for the state.

SOCIOECONOMICS Table 3: Employment Data December 2005

Area	Labor Force	Employment	Unemployment	Unemployment Rate (%)
Imperial County	62,700	54,500	8,300	13.1
Riverside County	860,100	824,100	36,000	4.2
San Diego County	1,519,200	1,464,000	55,200	5.5
California	17,460,000	16,951,800	853,300	4.8

Source: EDD 2005 (revised not seasonally adjusted).

Data from the NGTP application (Table 6.12-1) for 2004 show that the highest employment sector in Imperial County is local government at 23 percent followed by trade, transport, and utilities and natural resources, mining and construction at 20 percent. The labor pool is largely located in Imperial County with the rest coming from parts of Riverside County and San Diego County (IID 2006a). This area has a large population, including a December 2005 civilian labor force of 2,442,000 with adequate members of the trades required for construction of an energy facility.

PROJECT WORK FORCE

Construction Work Force

According to the NGTP application, construction of the NGTP facility would require nine months of labor, average 40 workers on-site, and require a maximum of 60 workers during the fifth (peak) month of construction. The tentative schedule would begin in September 2007, with completion in May 2008.

SOCIOECONOMICS Table 4 shows the distribution of workers by craft and month required for the construction. **SOCIOECONOMICS Table 5** shows the annual averages, 2001 and 2008 for the trades in Imperial County, and the maximum needed by the NGTP per month. According to the application and labor data obtained from the EDD, there is generally sufficient labor force available in Imperial County but additional labor force is available from portions of Riverside and San Diego Counties to find the required construction trades as needed.

SOCIOECONOMICS: Table 4
Project Monthly Construction Labor By Craft

Job Category	1st Month	2nd Month	3rd Month	4th Month	5th Month	6th Month	7th Month	8th Month	9th Month
Boilermakers				2	4	2			
Carpenters	2	6	8	8	6	4	2	2	
Electricians	2	4	6	8	8	8	6	4	2
Insulation Workers							2	2	2
Iron Workers	2	4	6	6	6	4	2		
Laborers	4	4	6	6	6	4	4	2	2
Millwrights			2	4	6	4	2		
Operators	4	4	2	2	4	4	4	2	2
Painters						2	4	6	4
Pipefitters		2	4	8	10	10	4	2	2
Craft Subtotal	**14**	**24**	**34**	**44**	**50**	**42**	**30**	**20**	**14**
Management	2	2	4	4	4	4	4	2	2
Engineering	2	2	4	4	4	4	4	2	2
Document Control	2	2	2	2	2	2	2	2	2
Commissioning						2	4	4	4
Non-craft Staff Subtotal	**6**	**6**	**10**	**10**	**10**	**12**	**14**	**10**	**10**
Project Total	**20**	**30**	**44**	**54**	**60**	**54**	**44**	**30**	**24**
IID Personnel	4	4	4	4	4	4	4	4	4

Source: IID2006a.

SOCIOECONOMICS: Table 5
Available Labor by Skill in Imperial County
Per Year and Maximum Needed by NGTP per Month

Occupational Title	2001 Average Annual Employment	2008 Average Annual Employment (Estimated)	Maximum Needed Per Month By NGTP
Boilermakers	N/AV*	N/AV	4
Carpenters	200	240	8
Electricians	160	200	8
Insulation Workers	N/AV	N/AV	2
Iron Workers	N/AV	N/AV	6
Laborers	400	510	6
Millwrights	N/A	N/A	6
Operators (Power Plant)	80	90	4
Painters (Includes Construction and Maintenance	50	60	6
Pipefitters (Includes plumbers and steamfitters)	170	200	10
Management (Construction Trades)	110	140	4
Engineering (Civil)	50	60	2
Document Control	N/AV	N/AV	2
Commissioning	N/AV	N/AV	4
IID Personnel	N/AV	N/AV	4

Source: EDD 2003 and IID 2006a. *Not Available (N/AV)

Staff accepts the applicant's position that Imperial County is the local labor market and most workers for construction and operation would be local. Indeed, the applicant expects that 40 percent should be coming from Imperial County mainly from the El Centro area, 30 percent from San Diego County, and 30 percent from Riverside County, assuming union labor (IID 2006a). Staff finds this estimate reasonable and adequate.

Plant Operations Workforce

According to the application, NGTP would use two full-time employees to operate the power plant which has an expected life of 30 years.

IMPACTS

Following is the Environmental Checklist that identifies potential negative impacts in this issue area. Below the checklist is a discussion of each impact and an explanation of the impact conclusion.

ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
SOCIOECONOMICS: POPULATION, HOUSING, AND ECONOMIC (FISCAL AND NON-FISCAL)-- Would the project:				
A. Have substantial non-fiscal effects on employment and economy?				X
B. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
C. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
D. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X
E. Have substantial fiscal effects on local government expenditures (excluding project costs), property and sales taxes?				X
F. Have a significant minority or below poverty level population within a six-mile radius that may be subject to disproportionate adverse effects of the project?				X
Public Services – Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered facilities, the construction of which could cause significant environmental impacts, or result in an inability to maintain acceptable service ratios, response times, or other performance objectives for the following:				
G. police protection?				X
H. schools?				X
I. medical and other public services and facilities?				X

DISCUSSION OF IMPACTS

A. Non-Fiscal Effects on Employment and Economy: No Impact

The proposed NGTP project would require approximately nine months for construction, average 40 workers on-site, and require a maximum of 60 workers during the fifth (peak) month of construction. The applicant and staff agree that most if not all construction and operational workers are expected to reside in Imperial County, and, if necessary, additional workers can commute from surrounding counties and regions. Construction workers would commute within a two-hour one-way commute to the power plant site and this includes portions of Riverside and San Diego County. The NGTP SPPE application presented an impact scenario whereby 40 percent or sixteen workers would come from Imperial County, 30 percent or 12 workers from San Diego County and 30 percent or 12 workers from Riverside County. Peak construction would make up 4 percent of construction jobs in Imperial County. (IID 2006a). Riverside and San Diego Counties have robust construction

labor forces. Staff agrees with the applicant that workers outside of Imperial County would most likely commute since this is a short-term project. Thus, the project would not directly or indirectly cause significant negative socioeconomic impacts on local employment resources in the area.

B. Induced Population Growth: No Impact

For reasons listed above, staff does not expect any major in-migration of construction workers. For those that do in-migrate, it is unlikely their families would accompany them for this project. Operational plant employment is very low and along with plant operation is unlikely to induce any more than a very small population increase. This would be true even if the two estimated plant operations employees and their families were to come from outside of Imperial County and move there with their families. Thus, the project would not directly or indirectly induce substantial population growth in the area.

C. Displacement of Housing: No Impact

Staff does not expect housing to be displaced because of the project. Sufficient vacant housing exists if any construction workers seek temporary housing for the nine-month construction period. According to the 2005 US Census, total housing stock for Imperial County totaled 48,495. The vacancy rate was 9.9 percent (IID 2006a). The realty industry considers an average vacancy rate to be five percent. Also, there are 30 hotels/motels with over 700 rooms located in El Centro. A 50 percent vacancy rate is plausible. A plausible scenario is that 350 rooms are available and at a 50 percent vacancy rate would provide 175 rooms (IID 2006a). An average of only 40 workers would be on-site during construction. Construction workers and workers in the specialty trades are available within Imperial County. About 60 percent of construction workers or 24 construction workers are estimated by the applicant to commute from outside Imperial County (IID 2006a). A few workers may require temporary lodging which should be available from hotel/motel or rental units. Staff does not expect any construction workers to relocate to the area with their families.

The proposed NGTP project is not likely to significantly alter the location, distribution, density, or growth rate of the population of the community of Niland, or Imperial County since construction impacts are of short duration and only two new full-time employees would be hired to operate the facility.

D. Displacement of People: No Impact

No housing or population would be displaced by the proposed project.

E. Fiscal Effects on Local Government Expenditures, Property and Sales Tax: No Impact

Because the applicant, IID, is a local public agency, it is exempt from property taxes and school impact fees (CEC2006f). Therefore, the project would not generate any property tax revenues for Imperial County. The sales tax is discussed under the noteworthy public benefits section.

F. Minority or Below Poverty Level Populations: No Impact

Staff has reviewed Census 2000 information that shows there is a significant minority population (greater than fifty percent) within a six-mile radius of the proposed NGTP project (please refer to **Socioeconomics Figure 1** in this Staff Assessment), and Census 2000 information that shows the below poverty level population is less than fifty percent within the same radius. The minority population is above the fifty percent environmental justice threshold but because there are no significant negative socioeconomic impacts there are no environmental justice issues.

G. Police Protection: No Impact

Because there would be little or no in-migration of construction workers, staff does not expect significant impacts to police services. Furthermore, the Imperial County Sheriff's Department is in El Centro with a patrol division of 114 officers and has a response time of less than 45 minutes. A County Sheriff is assigned to a substation in Niland and is on call at all times. There are municipal police departments in nearby cities such as El Centro, Brawley, Calexico, Holtville, Calipatria, and Westmoreland and the California Highway Patrol enforces laws for state roads in Imperial County and has an Office in El Centro and Calexico (IID 2006a). Finally, the NGTP is a small project that is not likely to provide much demand for police protection.

H. Schools: No Impact

There would be little or no in-migration of construction worker families and staff does not expect significant impacts to schools. Also, the applicant, IID, is a local public agency, and is exempt from school impact fees (CEC2006f). Therefore, the project would not be required to pay school impact fees normally assessed for commercial and industrial projects.

I. Medical and Other Public Services: No Impact

Because there is little or no in-migration of construction workers, staff does not expect significant impacts to medical and other public services. Pioneers Medical Hospital with 99 beds is located 18 miles south of the site in the community of Brawley and could provide emergency response services if required. The response time is 25 minutes (IID 2006a).

CUMULATIVE IMPACTS

A project may result in a significant adverse cumulative impact where its effects are cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. (Cal. Code Regs., tit. 14, section 15130.)

Cumulative impacts can occur when more than one project has an overlapping construction schedule that creates a demand for workers that cannot be met by local labor, resulting in an influx on non-local labor and their dependents.

In addition to the NGTP, two other power projects are slated to be built in Imperial County during a similar time-frame:

a. Salton Sea Unit 6 (SSU6) is six miles north of Calipatria (185 MW). As of May 22 to June 12, 2006, the construction dates for this project are February 1, 2007 to March 2009 or 26 months.

b. El Centro Unit 3 Repowering is another IID project that would be in El Centro, which is 30 miles south of Niland. IID submitted an application for an SPPE for this 84 MW power plant repower project in May 19, 2006. It has a 20-month estimated construction schedule from September 2007 to April 2009, with commercial operations beginning in May 2009. From the socioeconomic perspective, the El Centro Unit 3 Repowering project is generally similar to the NGTP. Both projects are small power plants being reviewed by the Energy Commission as SPPEs in 2006.

Socioeconomics Table 6 shows cumulative construction workers estimated for SSU6 and NGTP. The El Centro Unit 3 Repowering is another small power plant, and together, the three power plant projects overlap for nine months. They would not have a significant socioeconomic impact due to the robust non-local labor markets of Riverside and San Diego Counties from which construction labor can commute to the respective projects. Also, the local construction labor force in Imperial County would supply a good deal of the required manpower.

The Imperial County planning staff identified no other industrial or commercial projects near Niland that are planned or are currently under construction (IID 2006a).

Socioeconomics Table 6
Cumulative Construction Workers (Estimated)

	Salton Sea Unit 6*	NGTP**	El Centro Unit 3 Repowering***	Total
Year 2007				
Jan				
Feb	31			31
Mar	46			46
Apr	51			51
May	63			63
Jun	71			71
Jul	121			121
Aug	129			129
Sep	176	20	15	211
Oct	300	30	23	353
Nov	359	44	15	418
Dec	409	54	34	497
Year 2008				
Jan	407	60	52	519
Feb	363	54	76	493
Mar	406	44	76	526
April	419	30	82	531
May	462	24	92	578
Jun	459		98	557
Jul	463		98	561
Aug	467		96	563
Sep	463		90	553
Oct	422		80	502
Nov	325		78	403
Dec	277		72	349
Year 2009				
Jan	130		58	188
Feb	71		48	119
Mar	7		32	39
April			24	24

* Includes geothermal power plant (including wells and pipelines) and transmission construction. The estimated construction workforce is based on the 2002 26-month construction estimate from the SSU6 AFC (SSU6 2002).
** IID2006a
*** El Centro Unit 3 Repowering AFC 2006.

Finally, the NGTP is a relatively small power plant project with no direct or indirect significant negative socioeconomic impacts. In addition, due to the relatively large labor force available, the relatively few construction workers needed for the NGTP and other projects under construction, staff concludes that the NGTP would not contribute to a significant adverse cumulative impact.

NOTEWORTHY PUBLIC BENEFITS

Income and employment multiplier analysis using the Impact Analysis For Planning (IMPLAN) model, an input-output model used by the applicant and acceptable to staff, found that secondary (indirect and induced) impacts (secondary gross benefits) of construction are expected to result in 34 additional jobs and $1.0 million in labor income. Secondary impacts for operations would be two additional jobs and $50,000 in labor income.

The applicant estimates the NGTP total project cost to be approximately $69.4 million, the construction payroll is $10.4 million and for operations $200,000, and the value of construction costs purchased locally (within Imperial County) is estimated at about $1.3 million. Annual operation costs within Imperial County would be about $188,000 excluding fuel costs. Total sales taxes during construction amount to $4.2 million.

In summary, important fiscal and non-fiscal public benefits are: capital costs, secondary employment and income impacts, construction payroll, sales taxes, and the value of locally purchased construction and operation costs including equipment and materials. All direct and secondary economic estimates are in 2006 dollars (IID 2006g).

RESPONSES TO PUBLIC AND AGENCY COMMENTS

No comments have been received as of this writing.

CONCLUSIONS

NGTP is a relatively small power plant, and staff concludes there would not be any direct, indirect, or cumulative significant adverse socioeconomic impacts. However, there would be positive socioeconomic benefits such as construction and operation payroll, sales tax, and secondary employment and income impacts.

The NGTP project, as proposed, is consistent with applicable socioeconomic LORS. As amended by SB 50 (Stats. 1998, ch. 407, sec. 23), these sections state that public agencies at the state level may not impose fees, charges, or other financial requirements to offset the cost for school facilities. Also, IID as a local public agency is exempt from school impact fees established under Education Code 17620.

The following **Socioeconomic Table 7** provides a summary of socioeconomic data and information from this analysis with emphasis on economic benefits of the NGTP project.

PROPOSED CONDITIONS OF EXEMPTION

None proposed.

SOCIOECONOMIC DATA AND INFORMATION – TABLE 7[1]

Total Project Costs	$69.4 million
Estimate of Locally Purchased (Within Imperial County) Costs	
Construction	About $1.3 million
Operation	$188,000 (excluding fuel costs)
Estimated Annual Property Taxes	None. Exempt since IID is a local public agency.
Estimated School Impact Fees	None. Exempt since IID is a local public agency.
Direct Employment	
Construction (Average)	40 jobs
Operation	2 jobs (1.5 full-time equivalent employees)
Secondary Employment (indirect and induced impacts)	
Construction	Estimated to be 34 workers.[2]
Operation	2
Secondary Income (indirect and induced impacts)	
Construction	$1.0 million in labor income
Operation	$50,000 in labor income
Payroll	
Construction	Total: $10.4 million
Operation	$200,000
Estimated Sales Taxes	
Construction	Total: $4.2 million
Operation	N/A
Existing/Projected Unemployment Rates	Existing – 13.1 percent in December 2005, (not seasonally adjusted for Imperial County). (Preliminary estimate.) Projected - N/A
Percent Minority Population (six-mile radius)	69.39 percent
Percent Poverty Population (six-mile radius)	22.11 percent

[1] Table 2 uses 2006 dollars (IID 2006g) and construction is for 9 months. The estimated minimum economic life of the NGTP is 30 years. The economic impact assessment (secondary impacts) was for Imperial County. Population data/information is for a six-mile radius from the power plant.

[2] Staff estimated the construction employment multiplier to be 1.85 and operations employment multiplier of 2.0. Staff finds this acceptable since it is close to a range of 1.2 to 2.5 that many economists find acceptable in the long run (Moss et al. 1994).

REFERENCES

California Employment Development Division (EDD). 2003. Table 6 Occupational Employment Projections (1) 2001-2008 Imperial County.

California Employment Development Department (EDD), State of California. 2005. Monthly Labor Force Data for Counties December 2005. Revised Not Seasonally Adjusted.

California Energy Commission Statewide Transmission & Power Plant Maps 2006, Census 2000 PL-171 Data-Matrix PL2.

CEC2006f - CEC/J. Diamond (tn: 36524) Report of Conversation with Mr. Roy Buckner of the Imperial County Assessor's Office Regarding Local Property Taxes and School Impact Dated 3/14/06. Submitted to CEC/Dockets on 3/14/06.

El Centro Unit 3 Repowering. 2006. Application for Small Power Plant Exemption. Submitted to the California Energy Commission on May 19, 2006.

Moss, Steven J., Richard J. McCann, and Marvin Feldman. 1994. A Guide for Reviewing Environmental Policy Studies. Spring.

IID2006a - Imperial Irrigation District/j. federowicz (tn: 36510). Submittal of the Application for Small Power Plant Exemption for the Niland Gas Turbine Plant Dated 03/13/06. Submitted to CEC/B.B. Blevins, /Dockets on 3/15/06.

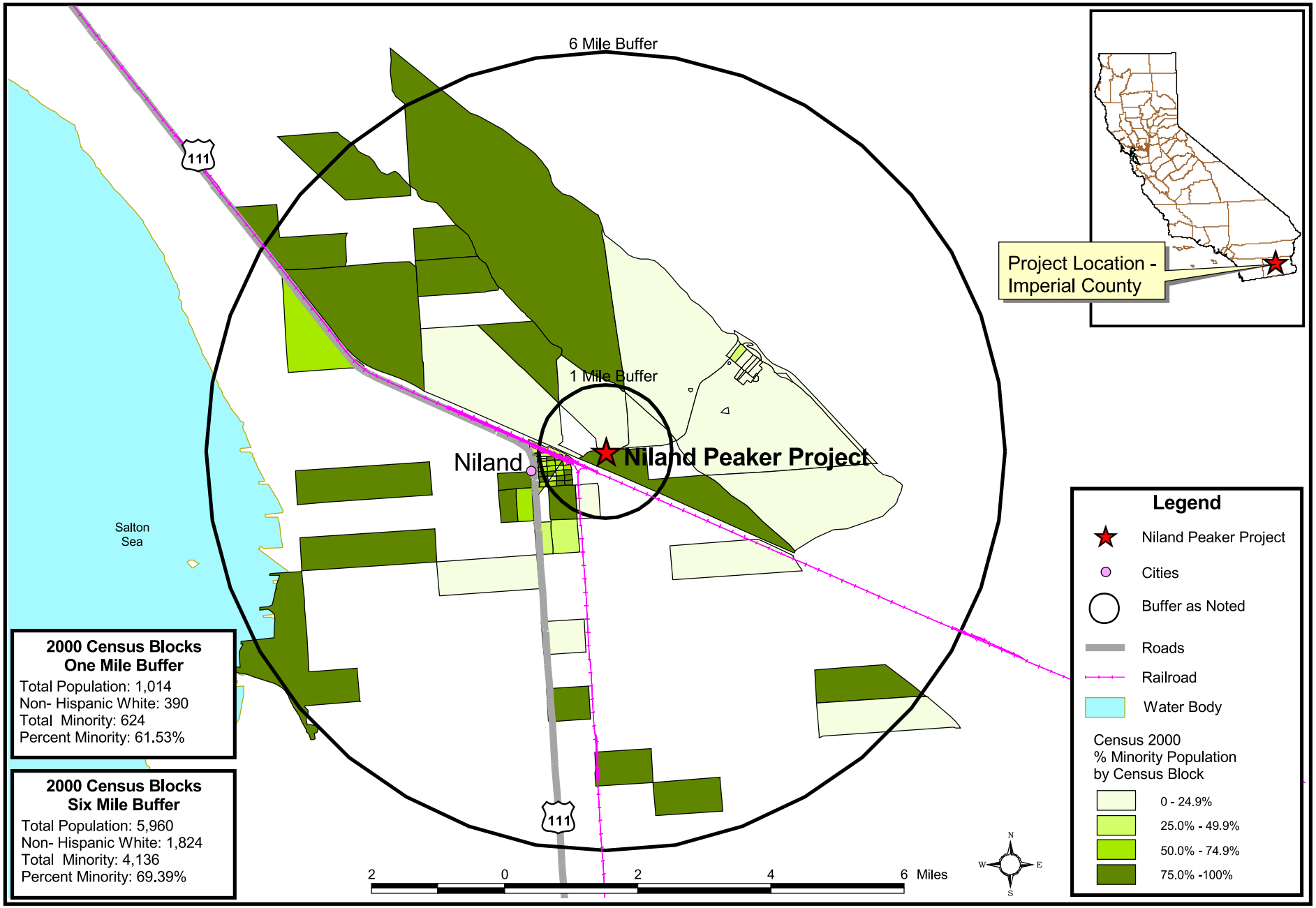
IID2006g – Imperial Irrigation District/URS (tn: 36849) First Round Data Responses Dated 04/25/06. Submitted to Dockets on 04/26/2006.

Salton Sea Unit 6. 2002. Application For Certification. Submitted to the California Energy Commission, July, 2006.

United States Bureau of the Census. 2000.Niland CDP, California. http:l//factfinder,census.gov/serlet/SAFFFacts?_even==Search&geoContext=&_Street+&_county=niland&_state=04000US06&_zip=&_lang=on&pctxt+fph&pgsl=010

SOCIOECONOMICS - FIGURE 1

Niland Peaker Project - Census 2000 Minority Population by Census Block - One and Six Mile Buffer



CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, AUGUST 2006

SOURCE: California Energy Commission Statewide Transmission & Power Plant Maps 2006, Census 2000 PL 94-171 Data - Matrix PL2

SOIL AND WATER RESOURCES

Testimony of Michael Stephens and Linda Bond

INTRODUCTION

The purpose of this section is to determine if the Niland Gas Turbine Plant (NGTP) project poses any unmitigated significant adverse impacts to soil or water resources, as proposed, and to recommend any additional mitigation, if needed, to reduce all potential adverse impacts to less than significant. Staff's impact assessment is based on questions provided in the California Environmental Quality Act (CEQA) Environmental Checklist (CEQA 2004) for Soils, Hydrology and Water Quality, as well as questions regarding Utilities and Service Systems, and has applied the thresholds for determining significance that are identified in this document. Laws, ordinances, regulations and standards (LORS) that apply to CEQA issues are cited below.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS)

Staff has applied the following LORS to define the threshold of significance for potential adverse impact on water resources.

FEDERAL

Clean Water Act

The Clean Water Act (33 USC § 1257 et seq.) requires states to set standards to protect water quality through the regulation of point source and certain non-point source discharges to surface water. These discharges are regulated through requirements set forth in specific or general National Pollutant Discharge Elimination System (NPDES) permits. Stormwater discharges during construction and operation of a facility, and incidental non-stormwater discharges associated with pipeline construction also fall under this act, and are addressed through a general NPDES permit. In California, requirements of the Clean Water Act regarding regulation of point source discharges and stormwater discharges are delegated to, and administered by, the nine Regional Water Quality Control Boards (RWQCB).

STATE

California Constitution, Article X, Section 2

This section requires that the water resources of the State be put to beneficial use to the fullest extent possible. Waste, unreasonable use or unreasonable method of use of water is prohibited. The conservation of such waters is to be exercised with a view to the reasonable and beneficial use in the interest of the people and for the public welfare. The right to water or to the use or flow of water in or from any natural stream or water course in the State is and shall be limited to such water as shall be reasonably required for the beneficial use to be served, and such right does not and shall not extend to the waste or unreasonable use, or unreasonable method of use, or unreasonable method of diversion of water.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1967, Water Code Section 13000 et seq., requires the State Water Resources Control Board and the nine regional RWQCBs to adopt water quality criteria to protect the State's waters. These criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. The criteria for the NGTP project area are contained in the Region Water Quality Control Plan. This plan sets numerical and/or narrative water quality standards controlling the discharge of wastes to the State's waters. These standards are applied to the proposed project through the issuance of Waste Discharge Requirements (WDRs) by the Colorado River Basin RWQCB.

California Water Code

Section 13146 of the Water Code specifies that State offices, departments and boards in carrying out activities which affect water quality, shall comply with state policy for water quality control unless otherwise directed or authorized by statute, in which case they shall indicate to the state board in writing their authority for not complying with such policy.

Uniform Building Code

The California Building Standards Code published under Title 24 of the California Code of Regulations section 3 et seq. is comprised of eleven parts containing the building design and construction requirements relating to structural safety. Local planning, building and safety departments enforce the California Uniform Building Code. The California Uniform Building Code establishes the testing methods for identifying expansive soils (ASTM D48-29) and mandates design criteria for construction.

LOCAL

Imperial County

Site Design Ordinance

Imperial County Land Use Code specifies the development standards for commercial and industrial sites (sections 90301.02, 90301.03 and 90301.13) and establishes regulations for fugitive dust control during grading, submittals required for projects that include grading, and soil testing required for grading permit.

Grading Ordinance

The Grading Ordinance of the Imperial County Land Use Code (section 91010) specifies the requirements for grading, excavation and construction and describes the procedure and requirements for obtaining a construction permit.

Flood Damage Regulations

Imperial County Land Use Code, Division 16, Flood Damage Protection, specifies the requirements for development within a floodplain.

POLICIES

SWRCB Resolution 75-58

The SWRCB has also adopted a number of policies that provide guidelines for water quality protection. The principal policy of the State Board, which addresses the specific siting of energy facilities, is the Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Power Plant Cooling (adopted by the Board on June 19, 1975 by Resolution 75-58). This policy states that use of fresh inland waters should only be used for power plant cooling if other sources or other methods of cooling would be environmentally undesirable or economically unsound. This SWRCB policy requires that power plant cooling water should come from (in order of priority): wastewater being discharged to the ocean, ocean water, brackish water from natural sources or irrigation return flow, inland waste waters of low total dissolved solids, and other inland waters. This policy goes on to address cooling water discharge prohibitions. Resolution 75-58 is not administered through a permitting process by the State Water Resources Control Board.

Imperial County General Plan

The Open Space and Conservation Element of the Imperial County General Plan establish policy and goals with regards to soil conservation and erosion control, minimization of environmental impacts and the conservation and protection of water resources. The Planning and Building Department of Imperial County is the administering agency for the General Plan.

SETTING

The NGTP would be located within the urban area boundary of the town of Niland in the Imperial Valley. The Imperial Valley is one of the primary agricultural regions of California, possessing productive soils, a desert climate and access to water from the Colorado River, which is the region's only significant source of fresh water. The applicant proposes to construct NGTP on 22 acres of undeveloped, industrial-zoned land and proposes to consume approximately 22 acre-feet of fresh water annually.

The Imperial Valley is located adjacent to the California-Mexico border, in the south central portion of the Salton Basin. The physiography and geologic formation of the Salton Basin largely defines the soil and water conditions of the region. The Salton Basin, a topographic and structural depression, is the northern extension of the Gulf of California. A tectonic rift in the continental plate formed the Gulf, resulting from movement along a fault system that is still active today beneath both the Gulf and the basin. Over time, the northern portion of the gulf became land bound by the growth of the Colorado River's delta fan. The Colorado River terminates south of Imperial Valley at the Gulf of California and has deposited vast quantities of sediments, which isolated the Salton Basin. In the central portion of the valley, depth to bedrock is approximately 15,000 feet. The River first deposited sediments under marine conditions, followed by deltaic conditions. The interior of the basin has become a flood plain of the Colorado River, containing river deposits, lake deposits and, finally, alluvial deposits, which have contributed to the basin fill. Over time, sedimentation from the Colorado River has generally kept pace with tectonism. However, without the presence of the Colorado

River delta, the Imperial Valley would be inundated by the sea because much of the valley still remains below sea level. The Salton Sea, at the low point of the basin, has an elevation of 227 feet below sea level.

The climate of the Imperial Valley is characterized by extreme aridity and high summer temperatures. Maximum summer temperatures commonly exceed 104 degrees Fahrenheit, and winter minimums are seldom below 32 degrees Fahrenheit. According to the Western Regional Climate Center, precipitation for the Niland area averages 2.70 inches per year. Rain falls in the winter through early spring and in late summer thunderstorms. The highest rainfall on record for Niland for a single day was 2.65 inches on July 6, 1968. (Brawley, which is the nearest long-term weather station, reported a record rainfall of 3.90 inches on October 10, 1932.) Evapotranspiration, or loss of water to the atmosphere, significantly exceeds precipitation. The reference crop evapotranspiration (ETo), which is the standard measure of evapotranspiration, averages 72 inches per year for the Imperial Valley area.

SOILS

The federal Natural Resources Conservation Service classifies soils at the site of the proposed project and the linear facilities as Niland-Imperial Complex (NRCS2006). A soil identified as a complex consists of two or more soils inter-distributed in an intricate pattern or in such small areas that they cannot be shown separately on the map. The soils at the project site are predominated by Niland soils, occupying about 40 percent of the land, and Imperial soils, occupying about 25 percent of the land. The soils on the remaining 35 percent of the land include Carsitas (10 percent), Rositas (10 percent) and Meloland (5 percent) soils.

Niland soils are composed of very pale brown, stratified, gravelly sand and sand overlying pale brown, silty clay at depth of 23 inches and are alluvial in origin. The upper portion of Niland soils have a low rating (Kw=0.05 and Kf=0.05) for susceptibility to sheet and rill erosion by water. The lower portion of Niland soils is moderately susceptible to water erosion (Kw=0.28 and Kf=0.28). (Water erosion factors range from 0.02 to 0.69.) In contrast, Niland soils have the highest rating for susceptibility to wind erosion (Wind erodibility group 1). (Wind ratings range from 1 to 8). Carsitas and Rositas soils are similar to Niland soils, having low-moderate ratings for water erosion and the highest rating for susceptibility to wind erosion. Therefore, sixty percent of the construction area will be highly susceptible to wind erosion. Niland soils have the highest negative soil expansion rating (1), with a linear extensibility potential (shrink-swell) greater than 6, indicating the least favorable conditions for construction. The low permeability of Niland soils can support shallow perched groundwater conditions at a depth of 2.5 to 6 feet if irrigated.

Imperial soils are composed of pinkish gray and light brown, calcareous, silty clay to depths of 60 inches and are alluvial in origin. Imperial soils are moderately susceptible to water erosion (Kw=0.28 to 0.43 and Kf=0.28 to 0.43) are also moderately susceptibility to wind erosion, with a rating of 4. Imperial soils also have the highest negative soil expansion rating (1) and can support shallow perched groundwater conditions if irrigated.

No ratings were available for Meloland soils.

SURFACE WATER

The Salton Basin is a closed basin with no outlet for surface water discharge. Other than the negligible rainfall, the only source of fresh water to the region for both irrigation and domestic use is water diverted from the Colorado River. The present-day Salton Sea was originally formed by an irrigation accident that temporarily diverted the entire flow of the Colorado River into the Imperial Valley. Today, the inflows to the Sea are limited primarily to surface and groundwater return flows from agricultural irrigation. Because the Sea has no outlet, water is lost only through evaporation, leaving dissolved salts behind and gradually raising salinity. The Sea's salinity has now reached 44 parts per thousand, about 25% higher than ocean water.

Surface water features in the vicinity of the proposed project are limited to the Salton Sea, agricultural irrigation delivery canals and return flow canals. The project site is not being used for agriculture and therefore has no irrigation activity. It is located 5 miles east of the Salton Sea, about 0.2 mile southwest of the East Highline Canal, and about 0.5 north of the nearest agricultural return drain. The land immediately adjacent to the project site is unirrigated but most of the land surrounding the site, at a distance of about 0.5 mile, is irrigated. There are no streams or canals located within the project site or the construction area.

Although the project site is located within the alluvial flood plain of the Colorado River, the proposed project site and its linear features are located outside the 100-year flood hazard zone according to Federal Emergency Management Agency (FEMA). The topographic gradient of the proposed site is about 1 percent, sloping from the northeast to the southwest. Based on staff's field inspection, erosion from stormflows has incised multiple channels in the soil that are up to 3 feet deep near the northeastern boundary of the site. However, these channels do not constitute dry streambeds. Down gradient from the northeast corner of the site, the channels do not persist across the site and stormwater appears to spread out into sheet flow. The amount of vegetation at the southern boundary of the site indicates that runoff from the site may pool and infiltrate at the down slope boundary of the project site along the north side of Beal Road.

GROUNDWATER

The elevation of the project is approximately 105 feet below sea level. The groundwater table beneath the project site is located approximately 90 feet below land surface, which is about 30 feet above the elevation of the Salton Sea (IID2006a). Groundwater is hydraulically connected to the Salton Sea and is also very saline. In areas with low-permeability soils, irrigation can cause perched groundwater conditions 2 to 5 feet below land surface.

WATER SUPPLY AND USE

Water requirements for NGTP include demineralized water for project operation, potable water for human use, raw water for fire protection, and raw water for construction.

NGTP will employ several engineering features that limit the amount of water required for project operation, including:

- a dry low NOx combustion system to eliminate water injection,
- an air-cooled chiller to eliminate the need for a cooling tower, and
- recovery and reuse of chiller coil condensate.

The water for power generation will be used primarily for the power augmentation system. The applicant reports that the operation of the project will require a total of 35.2 gpm of water. However, approximately 15 gpm of the project's water supply will be derived from reuse of water recovered from chiller condensate with the balance of 20.2 gpm provided from the raw water supply. Assuming an average of 16 hours of operation per day, the consumption of raw water will be about 21.7 acre-feet per year (Hydrology & Water Quality Table 1). Although this project is not intended to operate full-time, if the project were to operate 24 hours, 365 days a year, annual consumption would be 32.5 acre-feet. (IID2006a)

SOIL AND WATER RESOURCES Table 1
Project Water Requirement

	Total Project Water Requirement		Condensate	Raw Water Supply	
	(gpm)	(afy)	(gpm)	(gpm)	(afy)
16 hours of operation	35.2	37.9	15	20.2	21.7
24 hours of operation	35.2	56.8	15	20.2	32.5

gpm = gallons per minute
afy = acre-feet per year
Source: IID2006a.

Raw water would be demineralized for process operations and stored in a 150,000-gallon water tank.

Water for fire protection would include a minimum 216,000-gallon fire water reserve within a 400,000 fire/service-water storage tank and a water-delivery system with a replenishment rate of 500 gpm for an 8-hour period.

The applicant does not specifically identify the amount of potable water required for human uses. However, long-term potable water use would be negligible because the operational staff will be limited to two employees.

For construction, the applicant has proposed the application of water as an option for dust suppression. The total amount of water required for construction or specifically for dust suppression was not included.

Water for the project will be supplied by the Golden State Water Company (GSWC). GSWC has provided a will-serve letter to IID that confirms its willingness and ability to serve the project, a copy of which is included in the NGTP application. Staff notes that

GSWC identifies a 450 gpm fire water replenishment rate, which is less than the 500 gpm rate identified in the SPPE application. However, GSWC also states that it understands that the fire water demand estimate is not final and may fluctuate. GSWC has an existing water main that runs diagonally across the IID property from northeast to southwest, passing approximately 700 feet from the northwest corner of the proposed project site. IID is proposing to have an 8-inch lateral constructed to transmit water to the project.

WASTEWATER DISCHARGE

Waste streams for power plants typically include process wastewater, sanitary wastes, stormwater and water associated with construction activities.

The NGTP is designed to generate no continuous process wastewater stream. Operation wastewater will be limited to minor condensation streams from the compressed air and continuous emissions monitoring systems. The applicant expects this operational waste stream to be negligible. Wastewater from equipment wash-down activities and any other potentially contaminated water that collects in drains will be directed to an oil/water separator and then discharged to a wastewater sump for visual inspection and evaporation. Potentially contaminated water will be trucked off-site for disposal at a licensed hazardous waste storage and treatment facility.

The volume of sanitary wastes will be very small because the project operation staff will be limited to two employees. Sanitary wastes will be will be contained in a 1,500 gallon holding tank, pumped to a tanker truck and shipped monthly to a sanitary treatment plant.

The project will also include the construction of three stormwater basins located along the south and west boundaries of the project site. One basin is designed to collect onsite runoff and to contain a 100-year storm event. The other two basins are designed to capture storm runoff generated outside the project site. These offsite stormwater detention basins are not designed to contain the largest storm events but rather to route water around the project and to slow the velocity of flow discharging below the site. The applicant indicates that basin outfalls, which will discharge stormwater below the project, will include rip-rap structures to control the velocity of outflow.

Waste streams during construction will be limited. Sanitary wastes will be the primary waste stream generated during construction. The workforce for construction will average about 40 workers with a maximum of 60 workers. It is assumed that construction sanitary wastes will be transported off-site for disposal. Construction dewatering is not anticipated. Groundwater was encountered at 90 feet beneath the existing ground surface, well below project excavation depths. The project site soils, identified as Niland-Imperial Complex, can support perched groundwater conditions 2 to 3 feet below grade with lateral infiltration from nearby irrigation. However, perched conditions are not anticipated because the land adjacent to the project site is currently unirrigated. Water or soil binders will be used for dust suppression during construction. Given the high year-round evaporation rates, spraying of water for dust suppression would be unlikely to generate any runoff.

Management spills or contaminated stormwater from chemical storage areas and other hazardous areas on site are addressed in the hazardous waste section of the Draft Initial Study.

IMPACTS

The Environmental Checklist below identifies impacts in the Soil and Water Resources issue area that could potentially result from the NGTP project. A discussion of each impact and an explanation of the impact conclusion follow the checklist.

SOIL AND WATER RESOURCES ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
A. Result in substantial soil erosion or the loss of topsoil?		X		
B. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X
C. Violate any water quality standards or waste discharge requirements?		X		
D. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				X
E. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?		X		
F. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?		X		
G. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?		X		
H. Otherwise substantially degrade water quality?		X		
I. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or				X

SOIL AND WATER RESOURCES ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
other flood hazard delineation map?				
J. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				X
K. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
L. Be subject to inundation by seiche, tsunami, or mudflow?				X
M. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?		X		
N. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
O. Require or result in the construction of new storm water drainage facilities or expansion existing facilities, the construction of which could cause significant environmental effects?				X
P. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
Q. Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
R. Substantially deplete or degrade local or regional surface water supplies, particularly fresh water, or fail to implement reasonable alternatives for water conservation?				X

DISCUSSION OF IMPACTS

A. Soil Erosion or the Loss of Topsoil: Less than Significant with Mitigation Incorporated

The potential for soil erosion typically increases during the construction of new developments. Accelerated wind and water induced erosion may result from earth moving activities associated with construction of the proposed project. The removal of vegetative cover and subsurface root systems and the alteration of the soil structure leave soil particles vulnerable to detachment and removal by wind or water. Construction and maintenance-related erosion is of particular concern in areas of sandy soils. Rainfall can greatly enhance the potential for water erosion. Grading

activities may redirect runoff into areas more vulnerable to erosion. Areas where linear facilities cross drainages are also vulnerable to erosion. Once constructed, the increase in the amount of impervious surfaces may increase the amount of runoff and peak discharges from the project site.

The Natural Resources Conservation Service classifies soils at the site of the proposed project and the linear facilities as Niland-Imperial Complex (NRCS2006). These soils have a low to moderate susceptibility to water erosion and a moderate to high susceptibility to wind erosion.

The NGTP will occupy 21.6 acres and will require the disturbance of about 26 acres during construction of the project, including linear facilities. **Soil and Water Resources Table 2** summarizes the estimated acreage of land disturbance for the project.

SOIL AND WATER RESOURCES Table 2
Estimated Land Disturbance

Project Component	Construction (acres)	Operation (acres)
Generating Plant (including parking, construction trailers and laydown area)	24.6	21.6
Natural Gas Pipeline	0.83	0.0
Water Supply Line	0.32	0.0
Total	25.75	21.6

The disturbance of land for the construction of linear facilities will be small. Linears typically include gas transmission lines, water supply lines, electrical transmission lines and access roads.

IID will file a Notice of Intent with the RWQCB to comply with the National Pollution Discharge Elimination System (NPDES) General Construction Storm Water Permit. NGTP will obtain a Grading Permit, Construction Permit and Development Permit from Imperial County. The applicant proposes to implement Best Management Practices (BMPs) and 8 mitigation measures to reduce potential soil impacts. The proposed BMPs include installation of impervious surfaces or stabilization of disturbed areas that will not be covered within the project area to control soil and wind erosion at the completed site. The stormwater system for capturing offsite stormwater that would intercept the site should reduce the amount water erosion occurring downstream of the site.

The applicant proposes that the project seek a determination from the RWQCB that the NPDES general industrial permit is not needed because the project is designed to eliminate all operational discharges from the site. The RWQCB will determine whether the project's post-construction mitigation measures are adequate. If the RWQCB determines the NPDES is needed, permanent erosion control measures would also be addressed as part of the project's Storm Water Pollution Prevention Plan (SWPPP) for industrial operations.

With the implementation of the proposed soil erosion mitigation measures, the compliance with the required NPDES permit(s), and the implementation of BMPs, staff concludes that the potential impacts from the project on soil erosion and loss of topsoil will be less than significant.

B. Soils incapable of supporting septic tanks: No Impact

Niland and Imperial soils exhibit very low percolation rates. Both soils have been assigned the lowest rating soil percolation rates (1). These soils also tend to support perched water conditions which can develop from agricultural irrigation. The applicant's site percolation tests confirmed these conditions, indicating a very low percolation rates (0 to ¼ gallons per square foot per day) (IID2006a).

No underground septic tanks or alternative onsite sanitary wastewater disposal have been proposed. Therefore, the presence of soils incapable of supporting wastewater disposal at the site will have no impact on the projects proposed method of sanitary wastewater disposal.

C. Violation of Water Quality Standards or Waste Discharge Requirements: Less than Significant with Mitigation Incorporated

Total annual water consumption is expected to be about 22 acre-feet annually. The applicant expects the operational wastewater stream to be negligible. Therefore, primary waste streams for NGTP will consist of sanitary wastes and stormwater.

The project will be designed to use a minimal amount of water for power generation. Process water will be collected and reused. Equipment wash-down water and any other potentially contaminated water collected in drains will be routed through an oil/water separator, which would prevent contaminated water from being discharged to the storm system. Contaminated water will be trucked off-site for disposal at a licensed hazardous waste storage and treatment facility. (Potential contamination of stormwater by chemical and hazardous wastes stored on site are addressed in the hazardous waste section of this report.)

During the construction period it is assumed the wastes will be trucked off-site to a sanitary treatment facility. The applicant does state that sanitary wastes for operational staff will be processed off-site at a sanitary treatment plant.

Other than stormwater, the applicant does not anticipate any other waste stream during construction or operation. All stormwater within the project will be captured and contained in an onsite stormwater basin with a design capacity for a 100-year storm. Offsite stormwater that intercepts the project will be routed around the project, detained in two stormwater basins and, for large storms, released down gradient

The applicant states that it intends to file a Notice of Intent (NOI), to comply with the requirements of the National Pollutant Discharge Elimination System (NPDES) general construction permit, to develop and implement a Storm Water Pollution Prevention Plan (SWPPP), and to apply all appropriate site-specific Best Management Practices (BMPs). The applicant proposes that the project seek a

determination from the RWQCB that coverage under the NPDES general industrial permit is not needed because the project will eliminate all discharges from the site.

The staff is satisfied that project plans to obtain the appropriate permits and implement a SWPPP that incorporates the applicable BMPs, which would address the necessary water quality standards and waste discharge requirements. The applicant's SWPPP with its BMPs constitute mitigation measures which staff believes will reduce any impacts to a less than significant level. Therefore, no impact related to the violation of water quality standards or waste discharge requirements are anticipated, and staff is not recommending any Conditions of Exemption.

D. Depletion of Groundwater Supplies or Recharge: No Impact

The project does not propose to use groundwater for project use. The project will not reduce groundwater recharge. The system will route stormwater to retention basins. Precipitation within the project footprint will be retained onsite to evaporate or percolate to the extent soil conditions will allow. Low to moderate intensity offsite stormflows that intercept the project site will also be routed and contained by two smaller storm basins. High intensity offsite stormflows will be partially contained by the offsite storm basins with overflow discharged down gradient of the project site. This proposed management of stormwater would not significantly alter the amount or location of stormwater percolation into the groundwater system. Therefore, the project would have no impact on groundwater supplies or groundwater recharge.

E. Substantial Alteration of Drainage Patterns Causing Erosion or Siltation: Less than Significant with Mitigation Incorporated

The proposed project site is currently vacant, sparsely vegetated, unimproved land with no impediments to runoff. Soils at the project site, identified as Niland-Imperial Complex, have a low to moderate rating for water erosion. In addition, the low relief of the project site, with a slope of about one percent, reduces the potential for erosion from rainfall. Based on field inspection, storm water appears to flow through multiple channels at the northeast corner, spreading out to sheet flow across the site. The amount of vegetation at the southern boundary of the site indicates that runoff from the site may pool and infiltrate at the down slope boundary of the property along the north side of Beal Road.

Construction of the proposed NGTP project would cause approximately 26 acres of land disturbance, including the area for construction trailers, construction parking, and offsite construction of linears. Compliance with all of the requirements of the project's NPDES general construction permit, implementation of the SWPPP, application of site-specific BMPs, should minimize wind and water erosion associated with construction activities.

The completed project would occupy approximately 22 acres. To control drainage and erosion over the life of the project, the applicant proposes to construct three stormwater basins. An onsite basin will be constructed to collect and retain onsite storm flows, up to a 100-year storm. Offsite flows that intercept the project site will be captured and routed to two stormwater basins, which would contain small to moderate flows and would release overflow down gradient from the site. Based on

staff's site inspection, the current erosion pattern indicates that stormflow down slope of the project site boundary moves as sheet flow. However, the project plans to discharge water at the down slope boundary in a channel. Channelizing the discharge could induce new erosion. To address this potential impact, project plans indicate that the overflow channel of the offsite stormwater basins will include rip-rap to control the velocity of the discharge; in addition, the total volume of discharge would be decreased because a portion of the runoff would be retained in the project's stormwater basins. Because the project proposes to implement measures that will prevent stormwater discharges from onsite precipitation, the project does not plan to file a Notice of Intent (NOI) under the SWRCB NPDES General Industrial Permit. As the agency responsible for NPDES permitting, the RWQCB will determine whether coverage under the SWRCB NPDES General Industrial Permit is required.

Staff concludes that the project would have no impact to existing streams or other water bodies. With the applicant's proposal to follow NPDES regulations and to implement soil Best Management Practices (BMPs), which serve as mitigation measures, staff believes that impacts to soil will be less than significant. .

F. Alteration of Drainage Resulting in Flooding: Less than Significant with Mitigation Incorporated

As described previously, no natural streams will be altered as a result of the NGTP development. The project is not located within the 100-year flood plain. NGTP's three stormwater basins will capture and retain a portion of the storm flows that intercept the project site. Design and use of these retention basins will function as a mitigation measure. The onsite stormwater basin would be designed to contain the 100-year storm event, preventing onsite flooding for most storm events. Because these stormwater basins will contain runoff, they will also reduce volume of down-gradient runoff and will, therefore, reduce the existing potential for down-gradient flooding.

Staff concludes that the project's design for stormwater control would reduce the potential for flooding to less than significant.

G. Excess Runoff or Contribute to Polluted Runoff: Less than Significant with Mitigation Incorporated

The proposed project site is located in an unincorporated portion of Imperial County. The primary existing drainage system for the area is comprised of agricultural drains.

The project's stormwater retention basins would reduce the volume of stormwater exiting the site and would correspondingly reduce the amount of runoff that could potentially contribute to discharge to agricultural drains during large storm events. Furthermore, compliance with all of the requirements of the project's General NPDES Permit, implementation of the SWPPP and application of site-specific BMPs would minimize siltation of stormwater during construction and operation of the project and would function as mitigation.

Water that is potentially contaminated from project activities will be directed to an oil/water separator and discharged to a wastewater sump. Contaminated water

would then be evaporated and/or trucked to a licensed hazardous waste storage and treatment facility. By this process, which would function as mitigation, no polluted runoff would be discharged from the site.

Staff concludes that the project would have no impact to the existing drainage system. Staff further concludes that implementation of the SWPPP, application of site-specific BMPs and control measures for potentially contaminated water would reduce the potential for polluted runoff to less than significant.

H. Degradation of Water Quality: Less than Significant with Mitigation Incorporated

The applicant has proposed appropriate plans to manage contaminated wastewater, sanitary wastes and stormwater in accordance with applicable laws and local permits, with these plans functioning as mitigation. Staff did not identify any other potential project activities that could contribute to water quality degradation. Therefore, with the incorporation of the applicant's proposed mitigating plans, staff concludes that the potential project impacts to water quality would be less than significant.

I. Place Housing within 100-Year Flood Zone: No Impact

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for the Niland area, the proposed NGTP project, which does not contain a housing element, is not located within a designated 100-year flood zone.

J. Place Structures within 100-Year Flood Zone Which Would Impede or Redirect Flood Flows: No Impact

No structures would be created that would impede or redirect 100-year flood flows because the proposed site is not located within a designated 100-year flood zone. Therefore, staff concludes that project structures would have no potential to impede or redirect 100-year flood flows.

K. Flood Damage Risk: No Impact

The project is located within an active alluvial floodplain. Based on staff inspection of the site, existing stormwater erosional features indicate that the project site currently experiences channel inflow as well as sheet flow during storm events. As described previously, the current volume of stormflow and the velocity of flow down gradient of the project area would be reduced by the three project stormwater detention basins. Therefore, staff concludes that the project would not cause or contribute to flooding potential.

L. Seiche, Tsunami or Mudflow: No Impact

A seiche is a wave in an enclosed body of water created by an earthquake. A tsunami is a very large ocean wave caused by an underwater earthquake or volcanic eruption. Non-volcanic mudflows usually occur on sloping land with weak soil strength and saturated soils and are often triggered by earthquake or periods of extended, heavy rainfall.

The project is located within an active fault region. Therefore, a seiche could be generated in the Salton Sea. However, a seiche would not affect the project site because the site is located 5 miles from the Salton Sea and is elevated approximately 120 feet about the normal level of the sea. A tsunami could be generated in the Gulf of California, which is underlain by the regional fault system. There are no tsunami inundation zone maps available for the gulf. However, staff concludes that a tsunami would be unlikely to affect the project site because it is located 110 miles inland from the gulf and north of the Colorado River Delta, which would probably block the inland progression of a tsunami. Given the low relief of the site, staff concludes that mudslides also do not pose a threat to the proposed project.

M. Exceed RWQCB wastewater treatment requirements: Less than Significant with Mitigation Incorporated

With compliance with NPDES requirements and implementation of a well-designed SWPPP, which will function as a mitigation measure, the proposed project's wastewater and stormwater would be discharged in accordance with the applicable RWQCB requirements. No Impact is expected. Staff concludes that potential impacts would be less than significant with the applicant's proposed mitigation incorporated.

N. New Water or Wastewater Treatment Facilities Causing Significant Environmental Effects: No Impact

No new water or wastewater treatment facilities have been proposed for this project, other than an onsite demineralizer.

GSWC has stated that it will provide potable water to serve all of the project's requirements for water, including operations, drinking water and fire protection. GSWC confirms that it has the capacity to deliver 450 gpm for replenishment of water for fire protection, which is slightly less than the 500 gpm rate identified in the SPPE application. The applicant has not identified the total amount of water required for construction or specifically for dust suppression. However, since GSWC has the capacity to provide water for fire protection, staff assumes that GSWC would have adequate capacity to provide water service for construction.

The project proposes to construct an onsite mobile water treatment trailer that will produce demineralize service water for project operations and to store up to 150,000 acre-feet of demineralized water in a dedicated onsite water storage tank. Other than general construction impacts, no additional environment impact is anticipated from the construction and operation of this treatment facility.

During construction the project anticipates an average of 40 workers and a maximum of 60 workers. The operations staff will be limited to 2 employees. Sanitary wastes will be trucked offsite to be treated at an existing wastewater treatment facility, once the project is operational.

Given the limited amount of wastewater to be generated, staff does not anticipate that the amount of wastewater generated during either construction or operation of the project will result in the in the construction of new wastewater treatment facilities.

O. New Stormwater Drainage Facilities Causing Significant Environmental Effects: No Impact

The proposed project site is located in an unincorporated portion of Imperial County. The primary existing drainage system for the area is comprised of agricultural drains. The project's three onsite stormwater basins would reduce the volume of stormwater currently exiting the site and would correspondingly reduce the amount of runoff that could potentially contribute to discharge to agricultural drains during large storm events.

Other than the construction of the onsite project stormwater drainage system, the project would not require or result in the construction of any other new stormwater drainage facilities. Therefore, staff concludes that the project would cause no environmental impacts associated with other stormwater drainage facilities.

P. Water service resources and entitlements: No Impact

GSWC, which will provide all of the project's requirements for water, has provided a will serve letter stating that it has sufficient existing water capacity to serve the project. Based on information provided in the GSWC will-serve letter, staff concludes that the project will be served through existing entitlements and resources; therefore, the project, as proposed, will not require new or expanded water supply entitlements.

Q. Wastewater Treatment Service Capacity: No Impact

Total annual water consumption for the project is expected to be about 22 acre-feet annually. The project is designed to produce a negligible operational wastewater stream that will be collected and evaporated onsite. Any residual will be removed for offsite disposal at a licensed hazardous waste storage and treatment facility. The applicant has not identified the facility that will process the project's industrial wastes. The volume of sanitary wastes will be very small because the project operation staff will be limited to two employees. The applicant states that these sanitary wastes will be trucked off-site to be treated at an existing wastewater treatment facility. The volume of sanitary wastes will be largest during construction with a maximum workforce of 60 workers. Given the small volumes of industrial and sanitary wastewater that would be generated by the site, staff does not expect any impact to the processing capacity of the waste treatment facilities that will serve the project.

R. Surface Water Protection, Conservation and Alternatives: No Impact

SWRCB Policy Resolution 75-58 states that use of fresh inland waters should only be used for power plant cooling if other sources or other methods of cooling would be environmentally undesirable or economically unsound. The NGTP proposes to use fresh inland water for project operations, but the project will not include evaporative cooling towers. The project has been designed to minimize water use

and includes collection and reuse of process water. The applicant anticipates that the 93-megawatt project will consume approximately 22 acre-feet per year, which is significantly less water per megawatt than projects that use evaporative cooling tower technology.

There are four potential sources of water in the Niland area: irrigation return flows, recycled municipal wastewater, groundwater and fresh water. The applicant states that use of irrigation return flows and municipal waste water for the project would conflict with proposed use by the Salton Sea Ecosystem Restoration Program (Program), under development by the California Department of Water Resources and the California Department of Fish and Game. Staff has verified the Program's need to use all available flows for restoration (CEC/LDBOND2006b).

Based on information from the RWQCB, the applicant states that groundwater of sufficient quantity and quality is not available at or near the site. Based on USGS groundwater quality records for wells located in the vicinity of the project, staff confirms that groundwater is very saline (USGS2006). All sources of fresh water in the region are imported from the Colorado River. Purchase of fresh water from the GSWC would cause the least amount of environmental impact associated with transmission because of a GSWC water main is located adjacent to the project site. Land disturbance for the construction of a water delivery lateral from the GSWC water main would be limited to a 700-foot linear excavation.

Given the project's design for minimizing water use and the water supply options available, staff concludes that the project has implemented the best alternative for water conservation.

CUMULATIVE IMPACTS

The project has the potential to add slightly to the depletion of fresh water and to contribute to the degradation of water quality in the Imperial Valley. Colorado River water, from which the project water supply will be derived, is virtually the only source of water for the Imperial Valley and is a finite resource. Given the importance of fresh water to the region, the conservation of the fresh water supply and the management of water quality are paramount to the sustainability of the region.

California is facing both immediate and long-term effects of a diminishing supply of Colorado River water and rapidly increasing demands for water, particularly in the greater Los Angeles and San Diego region, which the Colorado River serves. The state has been using Colorado River water in excess of its entitlement since 1953 (with the exception of two very wet years). California's consumption has often exceeded its entitlement by up to 1 million acre-feet per year (MAFY). To put consumption in perspective, one million acre feet is enough water to annually supply about 2 million average households, which could meet the consumptive needs of about 6.4 million people. In 2003, California was faced with a significant reduction in its Colorado River water supply. Beginning in 2003, California was required to reduce its normal-year consumption to its legal entitlement of 4.4 MAFY. Although this reduction directly applied only to the entities that have junior water rights to Colorado River water,

including the Metropolitan Water District and the Coachella Valley Water District, the reduction effectively has increased the demand for water regionally and statewide.

Except for fresh water imported from the Colorado River, the water quality of the Imperial Valley is seriously impaired. Degraded and contaminated runoff, primarily as irrigation return flows, has impaired the water quality of the Imperial Valley agricultural drain water and the Salton Sea (UCCE2006). The accumulation of contaminants in the Salton Sea has increased to a point that remedial action has been required. The California Department of Water Resources and the California Department of Fish and Game are actively developing a restoration program for the Salton Sea.

The applicant has incorporated several measures to address these cumulative water supply and water quality impacts. The applicant has proposed a project that is engineered to minimize water use. The applicant proposes to comply with requirements of an NPDES permit, to develop a SWPPP, and to implement BMPs during construction and operation. NGTP plans to truck domestic wastes and contaminated wastewater offsite for disposal at appropriate treatment facilities.

These measures will reduce the potential for project impact to the fresh water supply and water quality to a level of less than significant. Therefore, staff concludes that the project would not contribute to cumulative adverse impacts to hydrology or water quality.

RESPONSE TO AGENCY AND PUBLIC COMMENTS

No comments from agencies or the public have been received at this time.

CONCLUSIONS

Staff concludes that the construction and operation of the NGTP facility, and mitigation measures as proposed by IID, will cause no substantial adverse impact to soil or water resources, the environment, or the public.

PROPOSED CONDITIONS OF EXEMPTION

None proposed.

REFERENCES

CEC/LDBOND 2006b: Report of Conversation between CEC/LDBond and California Department of Water Resources/D. Hoffman-Floerke, Regarding Planning for Use of Irrigation Return Flows and Municipal Recycled Wastewater Flows for the Salton Sea Ecological Restoration Program. Submitted to CEC/Project Management on 05/22/06.

IID2006a – Imperial Irrigation District/j. federowicz (tn:36510). Submittal of the Application for Small Power Plant Exemption for the Niland Gas Turbine Plant Dated 03/13/06. Submitted to CEC/B.B. Blevins/Dockets on 03/13/06.

NRCS2006 – Natural Resources Conservation Service. Online Web Soil Survey http://websoilsurvey.nrcs.usda.gov/ accessed 5/1/2006.

UCCE2006 – University of California Cooperative Extension/K. Bali. A**gricultural Management Practices to Improve** Drainage **Water Quality. Website:** http://tmdl.ucdavis.edu/Water_Quality_in_the_Imperial_Valley.htm **2006**.

USGS2006 – United States Geological Survey. Water Quality Samples for the Nation, Well Site Number USGS 331127115331601. Website: http://nwis.waterdata.usgs.gov/nwis/ **2006**.

TRAFFIC & TRANSPORTATION

Testimony of James Adams

INTRODUCTION

The Traffic and Transportation Analysis of the NGTP focuses on the project's effect on transportation systems in the vicinity of the project. This analysis examines the project's compatibility with applicable laws, ordinances, regulations, and standards (LORS). It also identifies potential impacts related to the construction and operation of the project on the surrounding transportation systems and roadways, and potential mitigation measures to avoid or lessen those impacts. This analysis also includes an evaluation of the influx of construction workers, and how, over the course of the construction phase, the movement of these workers can increase roadway congestion and also affect traffic flow. In addition, staff has also reviewed the project for consistency with the Imperial County Airport Land Use Compatibility Plan, and the effects of air traffic patterns in the vicinity of the project.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

Federal, state, and local regulations that are applicable to the proposed project are listed below. Staff uses LORS as significance criteria for evaluation whether the proposed project will have a significant adverse impact on the environment. The applicant has indicated its intent to comply with all federal, state, and local laws, ordinances, regulations and standards (LORS) related to the transport of hazardous materials. This issue is also addressed in the section entitled **HAZARDOUS MATERIALS MANAGEMENT**.

FEDERAL

- Title 49, Code of Federal Regulations, Sections 171-177, governs the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of the transportation vehicles.
- Title 49, Code of Federal Regulations, Sections 350-399, and Appendices A-G, Federal Motor Carrier Safety Regulations, address safety considerations for the transport of goods, materials, and substances over public highways. Section 353 defines hazardous materials.
- Part 77, Federal Aviation Administration (FAA) Regulations, establishes standards for determining obstructions in navigable airspace and sets forth requirements for notification to the FAA of proposed construction. Notification is also required if the structure or obstruction is more than a specified height and falls within any restricted airspace in the approach to airports.

STATE

- California Vehicle Code, Sections 31303-31309, regulates the highway transportation of hazardous materials, the routes used, and restrictions thereon.
- Sections 31600-31620 regulate the transportation of explosive materials.

- Sections 32000-32053 regulate the licensing of carriers of hazardous materials and include noticing requirements.
- Sections 32100-32109 establish special requirements for the transportation of substances presenting inhalation hazards and poisonous gases.
- Sections 34000-34100 establish special requirements for the transportation of flammable and combustible liquids over public roads and highways.
- Sections 34500, 34501, 34501.2, 34501.3, 34501.4, 34501.10, 34505.5-7, 34506, 34507.5 and 34510-11 regulate the safe operation of vehicles, including those which are used for the transportation of hazardous materials.
- Sections 2516 et seq. addresses the safe transport of hazardous materials.
- Sections 2500-2505 authorize the issuance of licenses by the Commissioner of the California Highway Patrol for the transportation of hazardous materials including explosives.
- Sections 13369, 15275, and 15278 address the licensing of drivers and the classifications of licenses required for the operation of particular types of vehicles. In addition, the possession of certificates permitting the operation of vehicles transporting hazardous materials is required.
- California Streets and Highways Code, Sections 117 and 660-72, and California Vehicle Code, Sections 35780 et seq., require permits for the transportation of oversized loads on county roads.
- California Streets and Highways Code, Sections 660, 670, 1450, 1460 et seq., 1470, and 1480, regulates right-of-way encroachment and the granting of permits for encroachments on state and county roads.
- In accordance with Section 21400 of the California Vehicle Code, and per the California Department of Transportation (Caltrans), all construction within the public right-of-way will need to comply with the "Manual of Traffic Controls for Construction and Maintenance of Work Zones."

LOCAL

The 2003 Circulation and Scenic Highways Element of the Imperial County General Plan identifies existing roadway conditions and trends, levels of service (LOS)[1], standards for traffic, and other transportation modes including public transit service (Imperial County 2003). Imperial County's policies related to traffic and circulation needs are identified.

The 2004 Southern California Association of Governments (SCAG) Regional Transportation Plan is a comprehensive long-range transportation-planning document that serves as a blueprint to guide public policy decisions regarding transportation expenditures and financing in five southern counties, including Imperial County (SCAG 2004).

[1] 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. LOS measurements represent the flow of traffic. In general, LOS ranges from "A" with free flowing traffic, to "F" which is heavily congested with flow stopping frequently.

Imperial County Colonia Master Plan – Community of Niland

As noted in the Imperial County Master Plan, certain regions within the County are called colonias (neighborhoods or communities) which have area plans that provide more detailed policy direction for local issues such as land use, circulation, services (water, sewer), and other topics. The Niland area surrounding the site is one such region.

The Colonia Plan for Niland is a fairly comprehensive summary of the community including population, services, commercial amenities, government, and has recommendations for future development. There is a discussion of streets, roads, and bridges that notes 90 percent of the community does not have curbs, gutters, or sidewalks (Imperial County 2004).

SETTING

The major highways in the general area of the project site are State Route (SR) 111, SR-86, SR-78, and Interstate 10 (I-10) (see **Traffic and Transportation Figure 1**). The local roadways potentially affected by the proposed project are Noffsinger Road, Niland Avenue, Commercial Avenue, and Beal Road. Niland Avenue and Noffsinger Road would provide the primary connection to the project site from SR-111 (see **Traffic and Transportation Figure 2**). The project site is located on Beal Road, approximately 3000 feet east of SR-111. The critical roads and highways in the area of the project site are:

I-10 is a major east-west interstate with at least two lanes in each direction and provides access to Southwestern California to the west, and Arizona and beyond to the east. It is approximately 30 miles north of the project site.

SR-111 is located near the project site and is a two-lane highway providing access to the site from the north via Main Street and Beal Road to the east, or from the south via Niland Avenue, Noffsinger Road, Commercial Avenue, and Beal Road to the east. SR-111 is a north-south highway connecting Imperial and Riverside and other counties to the north and carries most of the truck traffic in this part of Imperial County.

SR-86 is one of two regional east-west travel routes in the project vicinity and is a two-lane highway connecting I-8 and I-10. It is used to transport agricultural commodities from Imperial County to Southern California distribution hubs. SR-86 enters the City of Brawley from the west and heads south towards El Centro.

SR-78 is the second regional east travel route and is a two-lane highway that connects Imperial County with San Diego area to the west, and the Blythe area to the northeast. It intersects the City of Brawley from the east and then becomes SR-86/78 for about 15 miles before proceeding west to Oceanside.

Niland Avenue is a northeast-southwest two-lane local roadway that diagonally bisects the Niland community in a northeasterly direction from SR-111 to Main Street.

Beal Road is a east-west two-lane road that is an extension of Main Street east of the Niland community and provides access to the project site.

Noffsinger Road is a east-west two-lane road that goes east and west of SR-111. The eastern portion intersects Commercial Avenue.

Commercial Avenue is a north-south two lane road that connects Noffsinger Road and Main Street.

All of the roads noted above have a level of service (LOS) rating of A, and with the exception of SR-111, the roads do not have centerlines or turn lanes.

AIRPORT

The Calipatria Municipal Airport, located 7.86 miles southwest, is the closest airport to the project site. Other airports include Brawley Municipal Airport, Imperial County Airport, and the Naval Air Facility at El Centro, all of which are at least 10 miles away from the project site. In addition, there is protected military airspace over the project site which goes to the surface of the ground.

RAILROAD

The Union Pacific Railroad operates an active main line that crosses Beal Road in a northwesterly-southeasterly direction from the Arizona border to Riverside County. The line splits into two approximately 3200 feet northwest of the project site. The western line turns south and parallels Commercial Avenue to Noffsinger Road and beyond. The eastern line continues southeast toward the Arizona border. The two at-grade crossings of Beal Road are controlled by crossing gates.

PUBLIC TRANSIT

Imperial Valley Transit provides bus service from El Centro to Niland four times a day. The bus stops at SR-111 and Main Street (IVT 2006). Greyhound provides limited schedule service but there is no terminal or ticketing facility. Two buses leave Calexico in the afternoon and stop in Brawley, but not in Niland (Greyhound 2006).

School Bus Routes and Bicycle Facilities

The only public school in Niland is the Calipatria Unified School District's Grace Smith Elementary School which is located near the corner of Fourth Street and SR-111, approximately 5000 feet from the project site. There is a school crosswalk on SR-111 which is used by children who live on the west side of the highway. In addition, students from Niland use the crosswalk to get to the bus stop on the west side of SR-111. A bus takes them to the high school in Calipatria. Bicyclists are allowed to use all public roadways within the Niland community. There are no designated bike paths in the project area.

PROJECT FEATURES

This project would include a new generation switchyard on the west side of the combustion turbine generators, and a transmission interconnection between the generation switchyard and the existing Niland substation. A new lateral gas line will be attached to existing gas pipelines along the eastern boundary of the property along south edge of the project site and along the south side of Beal Road. The project's

water requirements, including potable water, will be supplied from existing water lines across the northern and western edges of the property. The site would have two permanent access points; one from Beal Road near the administration building, and the other from the west side of the property.

IMPACTS

Following is the Environmental Checklist that identifies potential impacts in this issue area. Below the checklist is a discussion of each impact, and an explanation of the impact conclusion.

ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
TRANSPORTATION/TRAFFIC -- Would the project:				
A. Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?			X	
B. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?		X		
C. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?			X	
D. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?		X		
E. Result in inadequate emergency access?				X
F. Result in inadequate parking capacity?				X
G. Create a significant hazard to the public or the environment through the routine transportation of hazardous material?			X	

DISCUSSION OF IMPACTS

A. Increase in Traffic: Less than Significant Impact

The project is expected to generate 40 daily round trips during the average construction period for seven months, and 60 daily round trips during the peak construction period, which would last two months. Because the applicant has not factored in the potential for car-pooling, the above numbers represent the maximum number of vehicle trips.

In addition, the applicant estimates that there would be an average of five truck deliveries per day. Adjusting the truck trips to passenger car equivalents (1 truck is equivalent to three cars) would result in 15 car trips, or 55 total round trips during the average construction period, and 75 round trips during the peak period. Operation of the NGTP would not require any full-time staff (IID 2006a, pg. 6.9-11).

Given the average daily traffic (ADT) for SR-111 south of Niland Avenue (4,290), the ADT for Beal Road and Main Street (1,042 and 910 respectively), and the relatively small increase in project related traffic, staff believes that the increase in traffic will be less than significant.

B. Exceed Established Level of Service Standards: Less than Significant with Mitigation Incorporated

The addition of NGTP project traffic will have no impact on the existing LOS A for SR-111 and the roads and streets in the local area. Staff has concluded that these affected roadways will experience no significant and/or adverse impacts from this project as both have sufficient capacity to absorb all project-generated traffic. However, staff believes that the project owner should repair any road or street that is damaged during construction of the project, and is proposing a construction traffic control plan (see **Condition of Exemption TRANS-1**).

Construction of the project's gas pipeline along Beal Road may require a short-term lane closure, which would result in a temporary impact. Construction of additional linear facilities would generally occur on the project site.

No traffic impacts would result during operation of the NGTP since onsite personnel are not required.

C. Change in Air Traffic Patterns: Less than Significant Impact

The NGTP has no major commercial aviation center in the area. As noted earlier, Calipatria Municipal Airport is the closest airport to the site (7.86 miles southwest). The airport has one 3500 foot long runway without lights and does not have a control tower. The airport is occasionally used by crop duster aircraft, 2-3 times a week (City of Calipatria 2006).

As described in the SPPE's Project and Facility Description, the NGTP project is proposed to be a simple cycle power plant that would include two 60-foot-tall combustion exhaust stacks. The NGTP is located within the military airspace boundaries of Visual Route (VR) 288 and two miles from the Chocolate Mountains Naval Gunnery Range. Representatives from the military (Naval Air Ranges Unit) have reviewed the project and even though VR-288 airspace begins at ground level, existing power lines in the area require pilots to fly higher to avoid them. Therefore, they have concluded the project will not have significant impacts on military flights (NAVAIR 2006).

D. Increase in Traffic Hazards: Less than Significant with Mitigation Incorporated

There would be increased vehicle and truck traffic during construction of the project. As noted earlier, the traffic control plan will also address and include measures to minimize possible traffic delays along the natural gas line route on Beal Road. Most traffic is expected to reach the site from the south via SR-111 to Niland Avenue, Noffsinger Road, Commercial Avenue, and Beal Road. This route is longer than the original route discussed in the SPPE filing and was suggested by Imperial County Planning Department staff. The revised site access from the north utilizes the existing truck route through the community of Niland and minimizes traffic through residential areas.

Some vehicles and trucks will access the site from the north via SR-111, Noffsinger Road, Commercial Avenue and Beal Road. Therefore, these vehicles will travel through the school crosswalk mentioned above and would increase the hazard for students crossing SR-111. The routes to the site will be incorporated in the traffic control plan pursuant to staffs proposed **Condition of Exemption TRANS-1**.

Staff has reviewed the community of Niland's section of the Imperial County Colonia Master Plan and agrees with the comment in the Plan that there is an existing hazard associated with children using the crosswalk. SR-111 is a major thoroughfare for truck traffic headed to or from I-10. The Niland Plan recommended the installation of hazard or warning lights, but this has not yet occurred. To mitigate the increased traffic related to the NGTP, staff is proposing **Condition of Exemption TRANS-2**. This would require the project owner to provide funds to the Calipatria Unified School District for a crossing guard at the appropriate time in the morning and afternoon, throughout the construction period.

The applicant has indicated its intent to comply with all weight and load limitations on state and local roadways and would seek permits from Imperial County and Caltrans as needed.

E. Inadequate Emergency Access: No Impact

The Imperial County Sheriff's Department has a small station in Niland that is staffed on a part-time basis. The closest fully staffed police station is in El Centro. Niland is served by the Niland Fire District, which maintains a fire station in Bombay Beach about twelve miles west of Niland. The nearest hospital (Pioneer Memorial Hospital) is located in Brawley and the response time is 20-25 minutes. Local roads in the vicinity of the NGTP site have minimal traffic congestion levels, with LOS expected to remain at A.

Staff concludes that the project's construction, including construction workforce commuting activity and truck traffic, would not affect emergency services access to the plant site.

F. Inadequate Parking Capacity: No Impact

Approximately 60 parking spaces will be provided at the NGTP project site or adjacent to the site for construction site personnel and visitors. This area will be

sufficient for the number of workers proposed during the construction phase of the project.

G. Transportation of Hazardous Material: Less Than Significant Impact

The construction and operation of the plant will require the transportation of various hazardous materials, including: aqueous ammonia, solvents, lube oils, paint, paint thinners, adhesives, batteries, and construction gases. The transport of hazardous materials over local streets has the potential to result in an increase in traffic hazards. NGTP has indicated that the transportation of hazardous materials to and from the site will be conducted in accordance with California Vehicle Code Section 31300. The SPPE submittal does not identify a route for hazardous materials delivery but staff anticipates that based on the preferred truck route, hazardous materials delivery would use SR-111, Niland and Noffsinger Roads, Commercial Avenue, and Beal Road to reach the project site. The applicant has proposed to follow the federal and state LORS for handling and transportation of hazardous materials (as discussed further in the **HAZARDOUS MATERIALS MANAGEMENT** section of this Final Study), therefore no significant impact is expected.

CUMULATIVE IMPACTS

The only additional project in the NGTP area is a proposed 244 single-family residential development on West 4th Street in the community of Niland. The proposal is in the early stages of environmental review and there is no estimate of when construction may begin (Imperial County 2006). In addition, vehicle and truck traffic associated with the NGTP would not utilize West 4th Street. Therefore, staff concludes that there will be no significant cumulative impacts.

RESPONSES TO PUBLIC AND AGENCY COMMENTS

No comments have been received as of this writing.

CONCLUSIONS

Staff believes that if the applicant develops a construction traffic control and implementation program, provides funds for a crosswalk guard, and follows all LORS acceptable to Caltrans and the community of Niland for the handling of hazardous materials, the project will result in less than significant impacts to traffic and transportation issues.

PROPOSED CONDITIONS OF EXEMPTION

TRANS-1 The project owner shall develop and implement a construction traffic control plan for the project in coordination with the community of Niland, Imperial County, and Caltrans. Specifically, the overall traffic control plan shall be designed to:

- schedule heavy vehicle equipment and building materials deliveries to occur during off-peak hours to the extent feasible; and
- encourage heavy vehicles and vehicles transporting hazardous materials to proceed from SR-111 to Niland Road, and then proceed north to Noffsinger Road, east on Noffsinger Road to Commercial Avenue, north on Commercial Avenue to Beal Road, and east on Beal Road to the project site.

The construction traffic control plan shall include measures to minimize traffic impacts associated with the construction of the associated linear facilities (gas pipeline) and shall include information on:

- signing, lighting, and traffic control device placement;
- temporary travel lane closures;
- maintaining access to adjacent residential and commercial properties;
- emergency access; and
- develop plans and a schedule for any required road repairs.

Verification: At least 45 days prior to the start of ground disturbance the project owner shall provide to the community of Niland, Imperial County, and Caltrans for review and comment and to the CPM for review and approval, a copy of its construction traffic control plan.

TRANS-2 The project owner shall negotiate with the Calipatria Unified School District to determine the cost for hiring a school crosswalk guard during project construction for use during the morning and afternoon hours, when children/students arrive or leave school, or catch the school bus to Calipatria. The project owner shall provide the necessary funds to employ the crossing guard throughout the construction period of the NGTP.

Verification: At least 30 days prior to the start of project construction, the project owner shall provide supporting documents to the CPM to demonstrate an agreement has been made with the school district to pay for the crossing guard service during the appropriate hours throughout the construction period, and adequate funds have been provided.

REFERENCES

Airport Land Use Compatibility Plan. Imperial County Airports. June, 1996.

Community of Niland. Imperial County Colonial Master Plan. October 26, 2004.

Circulation Element. Imperial County General Plan. December 16, 2003.

City of Calipatria 2006. Personal Communication with Jesse Soriano, Planning Department, City of Calipatria, and James Adams, California Energy Commission. May 8, 2006.

Greyhound 2006. Accessed website www.greyhound.com on May 2, 2006.

IID2006a (Imperial Irrigation District): Application for Small Power Plant Exemption. March, 2006.

IID2006g (Imperial Irrigation District): Applicant's First Round Data Responses. April 26, 2006.

IID2006k. (Imperial Irrigation District). Revised Traffic Analysis. June 13, 2006.

Imperial Valley Transit 2006. Accessed website www.ivtransit.com on May 2, 2006.

Imperial County 2006. Personal communication with Richard Cabanilla, Imperial County Planning Department, and James Adams. May 9, 2006.

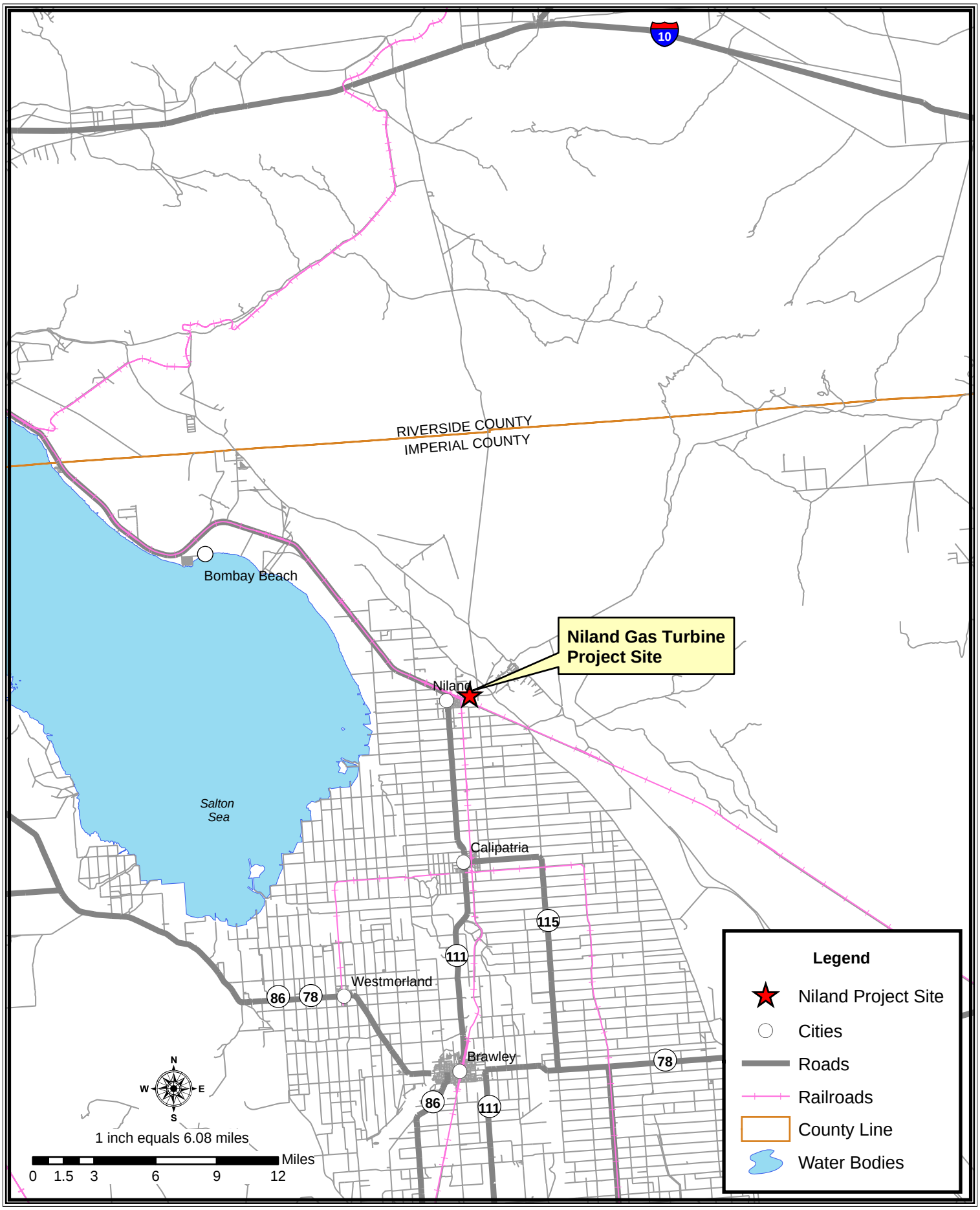
NAVAIR 2006. Personal communication between Anthony Parisi, Sustainability Office, NAVAIR Ranges, and James Adams. April 24, 2006.

Southern California Association of Governments 2004. Regional Transportation Plan.

Communication with Calipatria Unified School District's Grace Smith Elementary School Dianne Koon April 27, 2006.

TRAFFIC & TRANSPORTATION - FIGURE 1

Niland Peaker Project - Regional Transportation Network

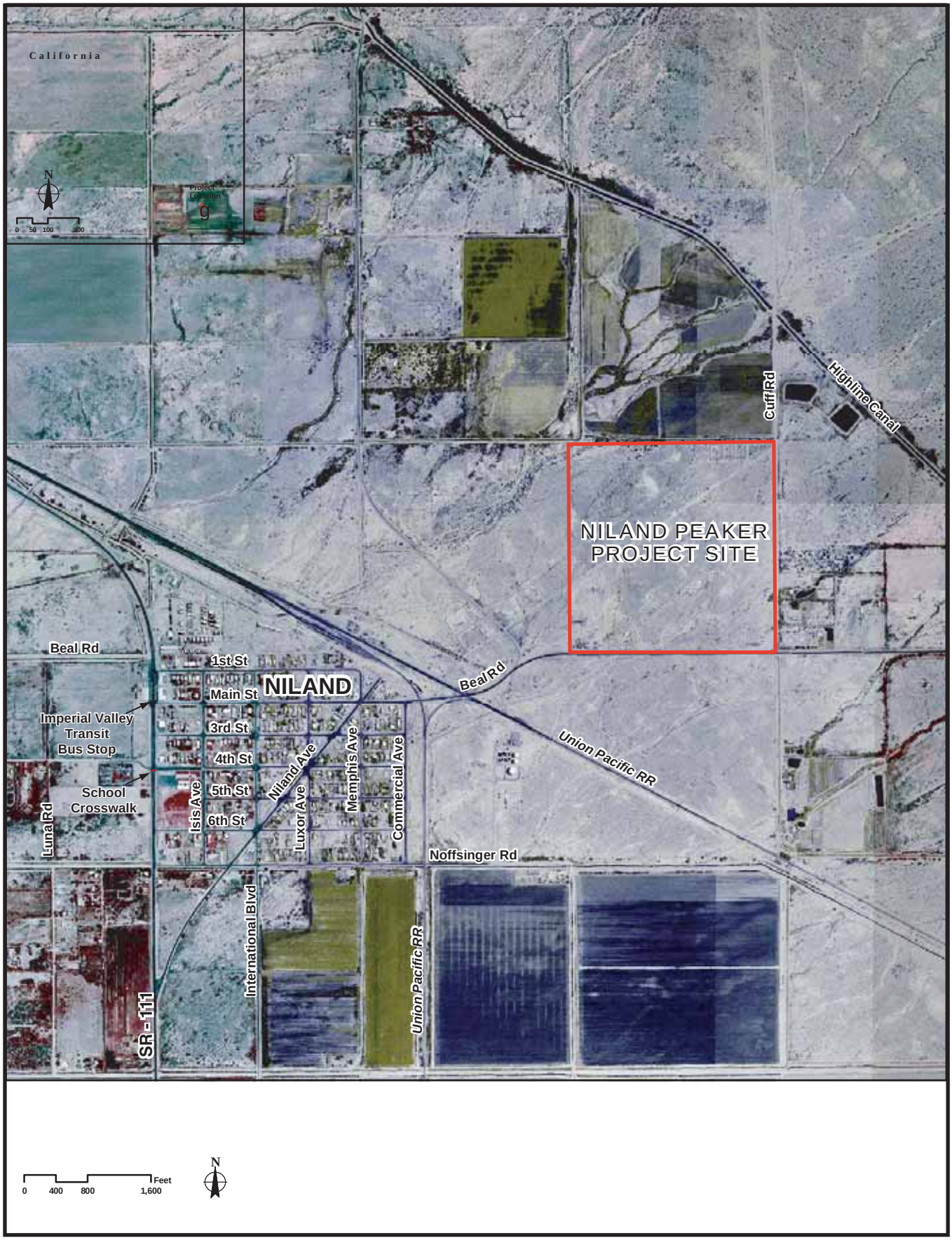


CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, AUGUST 2006

SOURCE: California Energy Commission

TRAFFIC AND TRANSPORTATION - FIGURE 2

Niland Peaker Project Project - Local Transportation Network



CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, AUGUST 2006

SOURCE: AFC Figure 6.11-3

TRANSMISSION LINE SAFETY AND NUISANCE

Testimony of Obed Odoemelam, Ph.D.

INTRODUCTION

The purpose of this analysis is to assess the line construction and operational plan for the Niland Gas Turbine Plant (NGTP) for incorporation of the measures necessary for compliance with applicable health and safety laws, ordinances, regulations, and standards (LORS).

Staff's analysis focuses on the following issues, which relate primarily to the physical presence of the line, or secondarily to the physical interactions of its electric and magnetic fields:

- Aviation safety;
- Interference with radio-frequency communication;
- Audible noise;
- Fire hazards;
- Hazardous shocks;
- Nuisance shocks; and
- Electric and magnetic field (EMF) exposure.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

Staff has identified the requirements of the following LORS as useful significance criteria for evaluating whether or not the proposed line will have any significant adverse health and safety impacts.

AVIATION HAZARD

The physical presence of the proposed line could pose an aviation hazard to area aviation if the line were to protrude high enough into the navigable air space and is located close enough to area airports. The potential for such a hazard is addressed through the following LORS:

- Title 14, Part 77 of the Federal Code of Regulations (CFR), "Objects Affecting the Navigation Space." Provisions of these regulations specify the criteria used by the Federal Aviation Administration (FAA) for determining whether a "Notice of Proposed Construction or Alteration" is required for potential obstruction hazards. The need for such a notice depends on factors related to the height of the structure, the slope of an imaginary surface from the end of nearby runways to the top of the structure, and the length of the runway involved. Such notification allows the FAA to ensure that the structure is located to avoid any significant hazards to area aviation.
- FAA Advisory Circular (AC) No. 70/460-2H, "Proposed Construction and or Alteration of Objects that may Affect the Navigation Space." This circular informs

each proponent of a project that could pose an aviation hazard of the need to file the "Notice of Proposed Construction or Alteration" (Form 7640) with the FAA.

- FAA AC No. 70/460-1G, "Obstruction Marking and Lighting." This publication describes the FAA standards for marking and lighting objects that may pose a navigation hazard as established using the criteria in Title 14, Part 77 of the CFR.

AUDIBLE NOISE AND RADIO INTERFERENCE

The physical interactions of electric fields from transmission lines could produce audible noise and interfere with radio-frequency communication in the area. Such impacts are prevented or mitigated through compliance with the following regulations and practices:

- Federal Communications Commission (FCC) regulations in Title 47 CFR, Section 15.25.
- General Order 52 (GO-52), California Public Utilities Commission (CPUC). Industry design standards and maintenance practices. Although IID is not under the CPUC's jurisdiction, it voluntarily follows these standards and practices.

FIRE HAZARDS

Fire hazards from overhead transmission line operation are mostly related to sparks from conductors of overhead lines or direct contact between the line and nearby trees and other combustible objects. Such fires are prevented through compliance with the following regulations:

- General Order 95 (GO-95), CPUC, "Rules for Overhead Electric Line Construction" specifies tree-trimming criteria to minimize the potential for power line-related fires. Although IID is not under the CPUC's jurisdiction, it voluntarily follows these standards and practices.
- Title 14 Section 1250 of the California Code of Regulations, "Fire Prevention Standards for Electric Utilities" specifies utility-related measures for fire prevention.

SHOCK HAZARD

All transmission and subtransmission line operations pose a risk of hazardous or nuisance shocks to humans. Hazardous shocks are possible from direct or indirect contact between an individual and the energized line. Such shocks are capable of serious physiological harm or death and remain a driving force in the design and operation of transmission and other high-voltage lines. The nuisance shocks by contrast, are caused by current flow at levels generally incapable of causing significant physiological harm. They result most commonly from contact with a charged metallic object in the transmission line environment. The following regulations are intended to prevent such shocks:

- GO-95, CPUC. "Rules for Overhead Line Construction". These rules specify uniform statewide requirements for overhead line construction regarding ground clearance, grounding, maintenance and inspection. Implementing these requirements ensures the safety of the general public and workers working on or around the line. Although IID is not under the CPUC's jurisdiction, it voluntarily follows these standards and practices.

- GO-128, CPUC, “Rules for Underground Electric Construction”. These rules covers required clearances, grounding techniques, maintenance, and inspection requirements. Although IID is not under the CPUC’s jurisdiction, it voluntarily follows these standards and practices.
- Title 8, CCR, Section 2700 et seq., “High Voltage Electric Safety Orders”. These safety orders establish essential requirements and minimum standards for safely installing, operating, and maintaining electrical installations and equipment.
- National Electrical Safety Code, Part 2: Safety Rules for Overhead Lines. Provisions of this code are intended to minimize the potential for direct or indirect contact with the energized line.
- The National Electrical Safety Code and the joint guidelines of the American National Standards Institute (ANSI) and the Institute of Electrical and Electronics Engineers (IEEE).

SETTING

The Niland Gas Turbine Plant (NGTP) project is proposed by the Imperial Irrigation District (IID or applicant) for the southwest portion of a 22-acre land parcel adjacent to the existing IID Niland Substation. According to information from the applicant (IID 2006a, pp. 2-3, 2-4, 2-21, and 4-1), the project’s power would be delivered to IID’s transmission system using an overhead 400-ft, 92 kV transmission line extending from a new on-site NGTP Switchyard to the connection point at the Niland Substation. Locating the project immediately adjacent to the Niland Substation would minimize the length of the line to be used. An overhead 13 kV distribution line that presently runs along the north side of the Niland Substation would be relocated underground away from the proposed project line. The project site is within an undeveloped parcel, which is surrounded by mostly cultivated farmland to the north and east, and light industrial areas to the south (IID 2006a, p6.2-4). The absence of residences in the line’s immediate vicinity means that the residential field exposures at the root of the health concern of recent years would be mostly insignificant along the proposed route.

As more fully discussed by the applicant (IID 2006a, pp.2-1 and 4-1 through 4-7), the proposed project and related transmission line would be owned, and operated by IID, which would design and build it according to IID’s design guidelines and construction practices reflecting compliance with applicable safety laws, ordinances, regulations, and standards, as well as California Public Utilities Commission’s (CPUC) general orders on electric and magnetic field (EMF) reduction. As reflected in the information from the applicant (IID 2006a, pp. 4-2 through 4-7), IID and the other California municipal utilities voluntarily comply with these CPUC general orders although they were specifically established by CPUC for utilities under CPUC regulation. Such voluntary compliance reflects the effort of the state’s municipal utilities to facilitate a uniform handling of the EMF reduction issue.

IMPACTS

The following is the Environmental Checklist that identifies potential impacts in the area of transmission line safety and nuisance. Below the checklist is a discussion of each type of impact, and the reasons for staff's conclusions regarding the potential for significance.

ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
TRANSMISSION LINE SAFETY AND NUISANCE -- Would project operation:				
A. Pose an aviation hazard to area aircraft?			X	
B. Lead to interference with radio-frequency communication?			X	
C. Pose a hazardous or nuisance shock hazard?			X	
D. Pose a fire hazard?			X	
E. Expose humans to higher electric and magnetic field levels than justified by existing knowledge?		X		

DISCUSSION OF IMPACTS

A. Aviation Hazard: Less Than Significant Impact

There are several airports in the greater Imperial County area. The Calipatria Municipal Airport, located 7.86 miles southwest, is the closest airport to the project site. Other airports include Brawley Municipal Airport, Imperial County Airport, and the Naval Air Facility at El Centro. In addition, there is protected military airspace over the project site which goes to the surface of the ground. However, none of the public or military airports or heliports are close enough to the proposed line to pose a potential aviation hazard according to FAA assessment criteria. Moreover, the support structures would (as with similar IID lines) be much less than the FAA-specified threshold of 200 feet with respect to aviation hazards. Given these facts, staff does not expect the proposed line to pose a significant collision hazard to the occasional area flights as defined by the FAA.

B. Radio Frequency Interference: Less Than Significant Impact

As discussed by the applicant, (IID 2006a, pp4-2, 4-3, and 4-5), the proposed project line would be designed, erected and operated according to IID's guidelines, which reflect current CPUC safety and field management requirements. Therefore, the line's electric fields would not be strong enough to produce the radio noise or television interference that is possible from lines of 345 kV or higher (as noted by EPRI 1982). The applicant has drawn from experience with its existing 92 kV grid lines in concluding that no such noise or television interference would occur in area residences. Staff does not recommend any conditions of exemption in this regard.

C. Hazardous and Nuisance Shocks: Less Than Significant Impact

The Applicant intends to comply with the requirements of applicable regulations and standards intended to prevent hazardous or nuisance shocks to humans (IID 2006a, p.4-7). Staff does not recommend any related conditions of exemption.

D. Fire Hazard: Less Than Significant Impact

The issue of concern to staff is the likelihood of fire from direct line contact with combustible materials or fire generation by sparks from the line. The applicant (IID 2006a, pp. 4-2 and 4-7) intends to comply with applicable regulations to ensure that the lines are adequately located away from trees and other combustible objects and materials to prevent fires or minimize such fires when they occur. Staff recommends Condition of Exemption (**TLSN-1**) to ensure the distancing and fire prevention requirements are met. Undergrounding the noted 13 kV line from its above-ground location would reduce the potential for contact-or spark-related fires.

E. Electric and Magnetic Field Exposure: Less Than Significant Impact with Mitigation Incorporated

Some researchers have concluded that exposure to power-frequency electric and magnetic fields can result in biological impacts at high intensities. However, as noted by the applicant (IID 2006a, p 4-3), power line fields have not been established (at normal environmental levels) to be capable of significant biological effects in exposed humans. The CPUC has established specific design requirements for dealing with such fields in light of present knowledge. As previously noted, IID and the other California municipal utilities voluntarily comply with these requirements. The question of concern to staff is whether the proposed line's field reducing design and operation plan would be adequate to maintain possible human exposures within the limits reflected in CPUC's requirements on the issue.

The applicant's intended compliance with their current design and operational practices constitutes compliance with CPUC's requirements on the field and non-field impacts at issue. The strengths of fields from such line designs should be similar to those from IID lines of the same voltage and current-carrying capacity. Any noted reduction should reflect the effectiveness of the applied measures. Staff's recommended **TLSN-1** would be adequate to ensure the safety and reduction efficacy assumed for the proposed overhead project line. The proposed under-grounding of the existing, overhead 13 kV line would yield the lowest field strengths possible without impacting line safety, efficiency, maintainability, and reliability.

RESPONSES TO PUBLIC AND AGENCY COMMENTS

No comments have been received as of this writing.

CONCLUSIONS

Staff has determined that the proposed NGTP line would be designed and operated in compliance with all applicable LORS thus ensuring that the project will have less than a significant impact in the area of transmission line safety and nuisance. The following Condition of Exemption is recommended to ensure implementation of the design and operational measures necessary.

PROPOSED CONDITIONS OF EXEMPTION

TLSN-1 The project owner shall construct the proposed overhead transmission line according to the requirements of CPUC's GO-95, GO-52, applicable sections of Title 8, Section 2700 et seq. of the California Code of Regulations and PG&E's EMF-reduction guidelines arising from CPUC Decision 93-11-013. The 13 kV line to be relocated underground shall be designed according to CPUC's GO 128.

Verification: Thirty days before starting construction of the transmission line or related structures and facilities, the project owner shall submit to the Energy Commission's Compliance Project Manager (CPM) a letter signed by a California registered electrical engineer affirming compliance with this requirement.

REFERENCES

Electric Power Research Institute (EPRI) 1982. Transmission Line Reference Book: 345 kV and Above.

Energy Commission Staff 1992. High Voltage Transmission Lines: Summary of Health Effects Studies. California Energy Commission Publication, P700-92-002.

IID (Inland Irrigation District) 2006a. Application for Small Power Plant Exemption for the Natural gas Turbine Project. Submitted to the California Energy Commission on March 13, 2006.

National Institute of Environmental Health Services 1998. An Assessment of the Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields. A Working Group Report, August, 1998.

TRANSMISSION SYSTEM ENGINEERING

Testimony of Ajoy Guha, P. E. and Mark Hesters

INTRODUCTION

The Imperial Irrigation District (IID, applicant) filed an application for a Small Power Plant Exemption (SPPE) with the California Energy Commission to construct a nominal 93-megawatt (MW), natural gas-fired, simple cycle combustion turbine generating facility to be located in the City of Niland of the Imperial County, California. The applicant proposes to connect their project, Niland Gas Turbine Plant (NGTP) to the existing Niland substation. The plant on-line target date is summer of 2008 (IID 2006a, section 1.3).

The Transmission System Engineering (TSE) analysis examines whether or not the facilities associated with the proposed interconnection conform to all applicable laws, ordinances, regulations and standards (LORS) required for safe and reliable electric power transmission. Staff's analysis evaluates the power plant switchyard, outlet line, termination and downstream facilities identified by the applicant. Additionally, under the California Environmental Quality Act (CEQA), the Energy Commission must conduct an environmental review of the "whole of the action," which may include facilities not licensed by the Energy Commission (California Code of Regulations, title 14, §15378). Therefore, the Energy Commission must identify the system impacts and necessary new or modified transmission facilities downstream of the proposed interconnection that are required for interconnection and represent the "whole of the action."

The Imperial Irrigation District (IID) is responsible for ensuring electric system reliability in the IID system for addition of the proposed Niland Gas Turbine Plant (NGTP). Commission staff relies on the interconnecting authority or transmission owner, in this case IID, for the analysis of impacts on the transmission grid as well as the identification and approval of required new or modified facilities downstream from the proposed interconnection required as mitigation measures. Since the IID system is not a part of the California Independent System Operator (CA ISO) grid, the CA ISO is not directly responsible for ensuring electric system reliability for the generator interconnection and does not provide any approval for interconnection of the project. The CA ISO, therefore, would not provide in this case any analysis or testimony in the Commission's process. The staff, therefore, has increased responsibility to evaluate the system reliability impacts of the project, and provide conclusions and recommendations to the Commission.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS)

- California Public Utilities Commission (CPUC) General Order 95 (GO-95), "Rules for Overhead Electric Line Construction," formulates uniform requirements for construction of overhead lines. Compliance with this order ensures adequate service and safety to persons engaged in the construction, maintenance and operation or use of overhead electric lines and to the public in general. IID's Construction Standards include provisions for meeting the minimum requirements of GO-95 Rules.

- California Public Utilities Commission (CPUC) General Order 128 (GO-128), “Rules for Construction of Underground Electric Supply and Communications Systems,” formulates uniform requirements and minimum standards to be used for underground supply systems to ensure adequate service and safety to persons engaged in the construction, maintenance and operation or use of underground electric lines and to the public in general. IID’s Construction Standards include provisions for meeting the minimum requirements of GO-128 Rules.
- The National Electric Safety Code, 1999 provides electrical, mechanical, civil and structural requirements for overhead electric line construction and operation.
- NERC/WECC Planning Standards: The Western Electricity Coordinating Council (WECC) Planning Standards are merged with the North American Electric Reliability Council (NERC) Reliability Standards and provide the system performance standards used in assessing the reliability of the interconnected system. These standards require the continuity of service to loads as the first priority and preservation of interconnected operation as a secondary priority. Certain aspects of the NERC/WECC Planning standards are either more stringent or more specific than the NERC Reliability standards alone. These standards provide planning for electric systems so as to withstand the more probable forced and maintenance outage system contingencies at projected customer demand and anticipated electricity transfer levels, while continuing to operate reliably within equipment and electric system thermal, voltage and stability limits. These standards include the reliability criteria for system adequacy and security, system modeling data requirements, system protection and control, and system restoration. Analysis of the WECC system is based to a large degree on Section I.A of the standards, “NERC and WECC Planning Standards with Table I and WECC Disturbance-Performance Table” and on Section I.D, “NERC and WECC Standards for Voltage support and Reactive Power”. These standards require that the results of power flow and stability simulations verify defined performance levels. Performance levels are defined by specifying the allowable variations in thermal loading, voltage and frequency, and loss of load that may occur on systems during various disturbances. Performance levels range from no significant adverse effects inside and outside a system area during a minor disturbance (loss of load or a single transmission element out of service) to a level that seeks to prevent system cascading and the subsequent blackout of islanded areas during a major disturbance (such as loss of multiple 500 kV lines along a common right of way, and/or multiple generators). While controlled loss of generation or load or system separation is permitted in certain circumstances, their uncontrolled loss is not permitted (WECC 2002).
- North American Reliability Council (NERC) Reliability Standards for the Bulk Electric Systems of North America provide national policies, standards, principles and guidelines to assure the adequacy and security of the electric transmission system. The NERC Reliability standards provide for system performance levels under normal and contingency conditions. With regard to power flow and stability simulations, while these Reliability Standards are similar to NERC/WECC Planning Standards, certain aspects of the NERC/WECC Planning standards are either more stringent or more specific than the NERC Reliability standards for Transmission System Contingency Performance. The NERC Reliability standards apply not only to interconnected system operation but also to individual service areas (NERC 2006).

- CA ISO Planning Standards also provide standards, and guidelines to assure the adequacy, security and reliability in the planning of the CA ISO transmission grid facilities. The CA ISO Grid Planning Standards incorporate the NERC/WECC Planning Standards and NERC Reliability Standards. With regard to power flow and stability simulations, these Planning Standards are similar to the NERC/WECC Planning Standards or NERC Reliability Standards for Transmission System Contingency Performance. However, the CA ISO Standards also provide some additional requirements that are not found in the WECC/NERC or NERC Standards. The CA ISO Planning Standards apply to all participating transmission owners interconnecting to the CA ISO controlled grid. They also apply when there are any impacts to the CA ISO grid due to facilities interconnecting to adjacent controlled grids not operated by the CA ISO (CA ISO 2002a).

EXISTING FACILITIES AND RELATED SYSTEMS

The proposed project 22-acre site northeast of Niland, CA is owned by the IID and adjacent to IID's existing 161/92 kV Niland substation in Imperial County. The plant will be interconnected to the 92 kV bus of the Niland substation. The Niland substation is located on the eastern side of the Salton Sea and is strategically located in the middle of IID's service area which includes Imperial County and part of Riverside and San Diego counties. The Niland substation is connected to the IID transmission grid through two 92 kV lines, one going north to Coachella and the other going south to El Centro. The substation is also connected to three 161 kV lines, one going north, another going south and the third one is the tie line going east to Western Area Power Administration's (Western) Blythe 161 kV substation. IID receives hydro power from the Parker-Davis system through this Western tie line. The IID system is interconnected with the Southern California Edison (SCE) system on the north, with the Western system on the east and southeast, with the Arizona Public system (APS) system on the southeast and with the San Diego Gas Electric (SDG&E) system on the south. Instead of importing more power from outside agencies in future, IID seeks to add this generation to its system as an efficient peaking plant in replacement of some of its older generating facilities. Staff believes that the proposed project would serve fast increasing load demand of the IID system more reliably and economically and it would also provide additional reactive power supply and voltage support in the IID system during peak hours.

PROJECT DESCRIPTION

SWITCHYARD AND INTERCONNECTION FACILITIES

The applicant proposes to construct and operate the NGTP as a nominal 93-meagwatt (MW), natural gas-fired, simple cycle power plant to be located on a 22-acre site northeast of Niland, CA and adjacent to IID's existing 161/92 kV Niland substation. The NGTP would consist of two LM6000 General Electric (GE) combustion turbine (CTG) generating units with a gross maximum output of approximately 50 MW for each unit and with a total net output of approximately 93 MW. Each generating unit would be connected to 13.8 kV switchgear through a 3000-ampere non-segregated bus duct and a 3000-ampere circuit breaker. The low voltage terminals of each dedicated 56/75 MVA,

13.8/92 kV step-up transformer would be connected to the 13.8 kV switchgear through a 3000-ampere non-segregated bus duct. The high voltage terminals of each step-up transformer would be connected with the new NGTP 92 kV switchyard by overhead conductors and terminated on a 1200-ampere 92 kV breaker. The NGTP 92 kV switchyard would consist of a single bus system with three switching bays, one 1200-ampere breaker for each bay. Two of the bays will be used for connecting two new generating units and the third one for the new 92 kV overhead short interconnecting line to the Niland Substation. The new single circuit 92-kV line will be about 520 feet in length and be built on about three new steel monopole structures. The line would be terminated on a new 1200-ampere 92 kV breaker of the existing Niland substation. The NGTP switchyard and the interconnecting line would be constructed, owned and operated by the IID (IID 2006a, Figures 2.2-5B, 2.2-5C, 2.2-3 and 2.2-4A).

The configuration of the new NGTP 92 kV switchyard and the new 92 kV interconnecting transmission line is in accordance with good utility practices and is acceptable to staff.

TRANSMISSION SYSTEM IMPACT ANALYSIS

For the interconnection of a proposed generating unit or transmission facility to the grid, the interconnecting utility and the control area operator are responsible for insuring grid reliability. For the interconnection of the NGTP, IID is responsible for insuring grid reliability. In accordance with FERC/CA ISO/Utility Tariffs, System Impact and Facilities Studies are conducted to determine the preferred and alternate interconnection methods to the grid, the downstream transmission system impacts and the mitigation measures needed to insure system conformance with performance levels required by utility reliability criteria, NERC planning standards, WECC reliability criteria, and CA ISO reliability criteria (CA ISO 2002a & 2003a). Staff relies on the studies and any review conducted by the responsible agencies to determine the effect of the project on the transmission grid and to identify any necessary downstream facilities or indirect project impacts required to bring the transmission network into compliance with applicable reliability standards.

The System Impact and Facilities Studies analyze the grid with and without the proposed project under conditions specified in the planning standards and reliability criteria. The standards and criteria define the assumptions used in the study and establish the thresholds through which grid reliability is determined. The studies must analyze the impact of the project for the proposed first year of operation and thus are based on a forecast of loads, generation and transmission. Load forecasts are developed by the interconnected utility, which would be IID in this case. Generation and transmission forecasts are established by an interconnection queue. The studies are focused on thermal overloads, voltage deviations, system stability (excessive oscillations in generators and transmission system, voltage collapse, loss of loads or cascading outages), and short circuit duties.

If the studies show that the interconnection of the project causes the grid to be out of compliance with reliability standards then the study will identify mitigation alternatives or ways in which the grid could be brought into compliance with reliability standards. If the

interconnecting utility determines that the only feasible mitigation includes transmission modifications or additions which require CEQA review as part of the "whole of the action," the Energy Commission must analyze these modifications or additions according to CEQA requirements.

Scope of System Impact Study (SIS)

The SIS dated February 16, 2006 was performed by K. R. Saline & Associates on behalf of the IID. The study was conducted with a WECC 2008 summer peak full loop case with changes to reflect IID's detailed transmission system and forecasted load. The transmission SIS modeling included planned IID system upgrades that were higher in the transmission system queue than the NGTP project and would be operational by May, 2008. The study included a Power Flow analysis, a Transient stability analysis, a Post-transient Voltage analysis and a Short Circuit analysis. The Power Flow Study was conducted with and without the NGTP with a peak load of 1, 095 MW for the IID system. The study included two scenarios: one for a normally anticipated IID generation dispatch and interchanges, and the other for a maximum available IID generation dispatch and interchanges (IID 2006a & 2006i).

Power Flow Study Results and Mitigation

The SIS demonstrates that the NGTP would be reliably connected to the IID system without any significant adverse impacts on the transmission facilities of the IID under the 2008 system conditions studied. The addition of the project would reduce loading on the Blythe-Niland 161 kV tie line and also on the 161/92 kV Niland substation transformer under normal and certain contingency conditions. The power flow impacts on the tie lines with the interconnecting utilities were found minimal and the interconnecting utilities have concurred with the study results. Staff, therefore, agrees that the NGTP would not cause any adverse impact on the interconnecting neighboring utility systems of SCE, SDG&E, APS and Western. The power flow study results have been tabulated in the study report and supplementary filings submitted by IID (IID 2006a and IID 2006i).

Based on the results of the SIS, there are no overloads identified in the IID system due to the interconnection of the NGTP as proposed under 2008 summer peak normal conditions. However, under certain contingency and high demand conditions the study identified the following overloads and corresponding mitigation measures:

- El Centro 161/92 kV Transformer: The transformer could be overloaded due to outage of the North Gila-Imperial Valley 500 kV line. Mitigation measures as approved by IID include increasing generation of the existing El Centro generating station and/or installation of a Remedial Action Scheme (RAS) under review for the critical contingency, and staff considers them acceptable.
- Niland substation 161/92 kV Transformer: The transformer would be overloaded under double contingencies of the Niland-PRTP1 92 kV line and the Niland-Bombay 92 kV line. Mitigation measures approved by IID include tripping the transformer by an overload relay protection and subsequent curtailment of the NGTP generation. Staff considers the mitigation measures acceptable.

Short Circuit Study Results

The Short Circuit Study identified increase in fault currents in the IID system due to the addition of the NGTP. The highest increase in fault currents by 53.25 percent was observed at the Niland substation 92 kV bus. The effect of fault levels on the interconnecting tie line substation buses was found to be minimal. However, the breakers at the existing substations have adequate interrupting ratings to withstand increased fault currents and there would no adverse short circuit impacts in the IID and interconnected systems. Staff concurs with the study results.

Transient Stability Study Results

The study identified no transient stability concerns in the IID system due to addition of the NGTP. Staff concurs with the study results.

Post-Transient Voltage Study Results

The study shows that for the addition of the NGTP the post-transient voltage deviations for critical contingencies would remain within acceptable limits. Staff concurs with the study results.

DOWNSTREAM FACILITIES

Besides the NGTP switchyard and the interconnection facilities including the new 92 kV transmission line between the NGTP switchyard and Niland substation, accommodating the power output of the NGTP would not require any other new downstream transmission facilities. RAS and other protective mitigation measures would require installation of protection equipment within the fence line of NGTP, Niland substation and El Centro generating station.

CUMULATIVE IMPACTS

Depending on fast increasing load demands in the IID, the amounts of local generation and reduction in imports to the IID system, staff believes that the addition of NGTP generation and concurrent addition (in 2009) of 85 MW generation for repowering of Unit 3 of the El Centro generating station should have minimal or no cumulative impacts on the IID transmission system. The cumulative marginal impacts due to the NGTP, as identified in the SIS, will be mitigated. Also, staff believes that there are some positive impacts as voltages are improved and system losses in the local network would decrease.

ALTERNATIVE TRANSMISSION ROUTES

The applicant did not consider any interconnection alternative other than the proposed interconnections to the Niland 161/92 kV substation, since the project site is adjacent to the nearest Niland substation and involved the shortest possible interconnection with lower environmental impacts and more operational benefits (IID 2006a, Section 1.4). This is allowed under CEQA and acceptable to staff.

COMPLIANCE WITH LORS

The SIS demonstrates that the NGTP would be reliably connected to the IID system without any significant adverse impacts on the transmission facilities of the IID and interconnecting neighboring systems. The interconnection, therefore, would comply with the NERC/WECC planning standards and IID reliability criteria. The new NGTP switchyard and new 92 kV overhead transmission line between the switchyard and the Niland Substation would be built by the IID according to NESC standards and GO-95 Rules within the fence line of the NGTP project site and would have no significant or unmitigated environmental impacts requiring CEQA review. The facilities would be in accordance with good utility practices and acceptable to staff in accordance with LORS. The addition of the NGTP would, therefore, conform to Reliability LORS and Engineering LORS.

RESPONSE TO AGENCY AND PUBLIC COMMENTS

No agency or public comments related to the TSE discipline have been received.

CONCLUSIONS

1. The SIS demonstrates that the NGTP would be reliably connected to the IID system without any significant adverse impacts on the transmission facilities of the IID under the 2008 system conditions studied. The addition of the project would reduce loading on some of the facilities. The NGTP would not also cause any adverse impact on the interconnecting neighboring utility systems of SCE, SDG&E, APS and Western, who have concurred with the study results. The protective mitigation measures selected and planned by IID will be effective in eliminating the adverse impacts of the project and ensure system reliability. The interconnection of the NGTP, therefore, would comply with the NERC/WECC planning standards and IID reliability criteria.

2. The proposed new NGTP switchyard, the new 92 kV overhead transmission line from the switchyard to the existing Niland substation and terminations are adequate in accordance with good utility practices and are acceptable to staff according to engineering LORS.

3. New interconnection facilities would be built within the fence line of the NGTP project site and would have no significant or unmitigated environmental impacts. RAS and protective mitigation measures would not require any new or modified downstream facilities and would involve installation of protection equipment within the fence line of NGTP and the existing substations which would not require any CEQA review.

4. The new plant with a net output capacity of 93 MW would allow IID to provide a more efficient and reliable local power resource especially during peak load demand hours in the summer. Staff believes that the project would also provide additional local reactive power, voltage stability and reduce system losses in the local network during peak hours.

5. Since staff has determined that the proposed NGTP plant would be interconnected and operated in conformity of the applicable LORS, staff is not recommending any Conditions of Exemption.

CONDITIONS OF EXEMPTION

None

REFERENCES

CA ISO (California Independent System Operator) 1998a. CA ISO Tariff Scheduling Protocol posted April 1998, Amendments 1,4,5,6, and 7 incorporated.

CA ISO (California Independent System Operator) 1998b. CA ISO Dispatch Protocol posted April 1998.

CA ISO (California Independent System Operator) 2002a. CA ISO Planning Standards, February 7, 2002.

CA ISO (California Independent System Operator) 2003a. CA ISO, FERC Electric Tariff, First Replacement Vol. No. 1, March 11, 2003

IID (Imperial Irrigation District) 2006a. Application for the Small Power Plant Exemption for the Niland Gas Turbine Plant dated 3-13-06. Appendix A-System Impact Study dated February 16, 2006 by K. R. Saline & Associates. Docketed on 3-13-06.

IID (Imperial Irrigation District) 2006i. Data Responses for Transmission System Engineering dated 5-3-06. Docketed on 5-3-06.

NERC (North American Electric Reliability Council) 2006. Reliability Standards for the Bulk Electric Systems of North America, May 2 2006.

WECC (Western Electricity Coordinating Council) 2002. NERC/WECC Planning Standards, August 2002.

DEFINITION OF TERMS

ACSR
: Aluminum cable steel reinforced.

AAC
: All Aluminum conductor.

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

Ampere
The unit of current flowing in a conductor.

Kiloampere
(kA) 1,000 Amperes

Bundled
Two wires, 18 inches apart.

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

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

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

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

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

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

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

Megavar
One megavolt ampere reactive.

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

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

Megawatt (MW)

A unit of power equivalent to 1,341 horsepower.

Normal Operation/ Normal Overload

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

N-1 Condition

See Single Contingency.

Outlet

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

Power Flow Analysis

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

Reactive Power

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

Remedial Action Scheme (RAS)

A remedial action scheme is an automatic control provision, which, for instance, would trip a selected generating unit upon a circuit overload.

SSAC

Steel Supported Aluminum Conductor.

SF6

Sulfur hexafluoride is an insulating medium.

Single Contingency

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

Solid dielectric cable

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

Switchyard

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

Thermal rating

See ampacity.

TSE

Transmission System Engineering.

TRV

Transient Recovery Voltage

Tap

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

Undercrossing

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

Underbuild

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

VISUAL RESOURCES

Testimony of Mark R. Hamblin

INTRODUCTION

Visual resources are the natural and man-made features of the environment that can be viewed. This analysis focuses on whether construction and operation of the NGTP project would cause an impact to visual resources. The determination of a proposed project's potential for visual impact is required by the California Environmental Quality Act (CEQA).

SETTING

The town of Niland is approximately 0.5-mile west of the NGTP site. The town is dominated by single-family, single-story structures. Farther to the west is a mosaic of irrigated farmland in row crops, and the Salton Sea (5 miles from the site). To the east and north is a large expanse of desert open space sloping upwards to the Chocolate Mountains (over 9 miles from the site). To the south of the property are an existing fuel tank farm, and a large patchwork of irrigated agricultural land, and open space.

The NGTP is proposed for a 26-acre (22-acre construction site and 4-acre laydown area) portion of a 160-acre property (subject property) that can be generally described as topographically flat, undeveloped desert open space that includes small clusters of mostly drought-tolerant vegetation. IID's Niland electric substation occupies a 2.5-acre portion of the subject property. Numerous transmission line poles and a wireless communication tower are also on the property (**VISUAL RESOURCES - Figure 1 Aerial View of Property**).

The publicly visible components of the proposed power plant would include: two 60-foot exhaust stacks, two 50-foot combustion turbine generators, a 20-foot 5,000 square-foot administration/control/warehouse building, two 34-foot water tanks, and 26-foot transmission structures.

A new switchyard is proposed to interconnect the NGTP's electricity output to the existing Niland Substation. An existing east-west electric transmission distribution line that runs along the south side of the proposed facility site is to be put underground.

ASSESSMENT OF IMPACTS

METHOD AND THRESHOLD FOR DETERMINING SIGNIFICANCE

Please refer to **APPENDIX VR-1** for a complete description of staff's Visual Resources evaluation process.

VISUAL RESOURCES - Figure 2 (photo locations) shows the areas from which the project would be visible (project viewshed), and the location and view direction of the key observation points (KOP) selected to represent sensitive viewing area(s). The selected KOPs for the NGTP project include the following:

- KOP 1 – view looking southwest from Cuff Road from the closest existing residence with no vegetative screening towards the project site;
- KOP 2 – view looking northeast from the intersection of Commercial Avenue and Main Street (a recreational travel trailer park) in Niland towards the project site.

DIRECT/INDIRECT IMPACTS AND SIGNIFICANCE

The following discussion of project impacts is organized around the four questions found in the CEQA Guidelines Appendix G Environmental Checklist pertaining to Aesthetics. The four questions and their potential impact significance are shown in **VISUAL RESOURCES Table 1** and discussed below.

VISUAL RESOURCES Table 1
CEQA Environmental Checklist Form - Aesthetics

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
AESTHETICS - Would the project:				
A. Have a substantial adverse effect on a scenic vista?				X
B. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
C. Substantially degrade the existing visual character or quality of the site and its surroundings?			X	
D. Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?			X	

Discussion of Checklist Items

A. Would The Project Have A Substantial Adverse Effect On A Scenic Vista: No Impact

A scenic vista for the purpose of this analysis is defined as a distant view through and along a corridor or opening that exhibits a high degree of pictorial quality. There are no scenic vistas in the KOP 1 and KOP 2 views. Also, the project site is not located within an area that has been formally identified as a federal, state, or county scenic vista. The proposed project would have no significant visual impact to a scenic vista.

B. Would The Project Substantially Damage Scenic Resources: No Impact

In the KOP 1 and KOP 2 views, there are no identified scenic resources (e.g., a unique water feature [waterfall, transitional water, part of a stream or river, estuary]; a unique physical geological terrain feature [rock masses, outcroppings, layers or spires]; a tree having a unique visual/historical importance to a community [a tree linked to a famous event or person, an ancient old growth tree]; historic building; or a designated federal scenic byway or state scenic highway corridor; et cetera). In addition there are no views of the project site from a federal, state, county and city park or other recognized public area for recreation including trails. The project would have no visual impact to a scenic resource.

C. Would The Project Substantially Degrade The Existing Visual Character or Quality of The Site and Its Surroundings: Less Than Significant Impact

Construction Impacts

Construction of the proposed power plant may cause temporary visual impacts (approximately nine months) due to the presence of equipment, materials, and workforce. Construction would involve the use of cranes and other heavy construction equipment, temporary storage of materials, and office facilities on a temporary 4-acre laydown/staging area.

Natural gas pipeline construction activities may be visible to travelers along Beal Road for a short period of time. The project proposes a 1,800-foot underground pipeline to connect the existing SCGC pipeline to the NGTP.

An existing 13kV overhead transmission distribution line that runs along the north side of the Niland substation would be partially placed underground to allow an overhead interconnection from the NGTP. An existing east-west distribution line that runs along the south border of the project site would also be placed underground for the portion that is adjacent to the project site.

Pipelines for the project are to be buried. After installation of the pipelines, the surface areas disturbed by construction activities would be returned to their pre-construction visual condition, thereby minimizing the visual impact on the landscape.

On-site and off-site project construction activities may cause temporary visual effects. No significant visual degradation of the site or its surroundings would occur. The project's construction activities would result in a less than significant visual effect under this criterion.

Operation Impacts

KOP 1 – View looking southwest from Cuff Road

Visual Resources Figure 3 presents a photo of the existing view, and a photo-simulation of the proposed project as viewed from Cuff Road. There are four single family residences along Cuff Road. Two residences do not have direct views toward the project site due to visual screening provided by vegetation and structures.

Visual Sensitivity

The view from KOP 1 is of a topographically flat, arid/desert property crossed with several dry shallow seasonal storm runoff channels. Low growing Creosote bush scrub is seen with an abundance of bare soil. The foreground view includes a number of metal and wood vertical pole structures, a group of white fuel tanks, a 150-200-foot (approximate) wireless communication tower immediately west of the project site, and an electric substation. In the background is a mature line of trees along the northeast edge of the town of the Niland, and a radio transmission tower (approximately 250-300 feet) that has aviation safety lights. The visual quality is moderately low.

Residential viewers are typically considered to be highly sensitive to modifications of a viewshed. Because of the moderately low visual quality, and the low number of viewers with views from this KOP, viewer concern is moderately low. The 0.5-mile view to the project site from the KOP is open (not visually impeded by any natural or man-made features). The visibility of the proposed NGTP would be high from this KOP. The view from Cuff Road is currently unobstructed of an existing substation, transmission poles and lines, a wireless communication tower and the distant lighted radio tower. View time for residents along Cuff Road is considered moderate.

Beal Road is the primary east-west access to the project site. Beal Road is shown in SPPE Table 6.9-3 to have a 24-hour average daily traffic (ADT) of 1,042 vehicles. This number of traveling viewers that would view the project is considered moderately low. The project would be highly visible to motorists traveling west on Beal Road to Niland.

From KOP 1, the overall visual sensitivity would be considered moderately low, as a result of moderately low visual quality, moderately low viewer concern, and moderate viewer exposure.

Visual Change

The proposed NGTP introduces new structures with vertical, cylindrical forms and horizontal lines of industrial character that would be clearly visible and prominent. Structures would not extend above the very distant silhouette-line of the hills/mountains across the valley, and would not be conspicuous in the backdrop of the sky. The proposed plant's neutral gray and beige/tan surface colors, as depicted in the photo-simulations, would be in harmony with existing natural colors of the desert landscape. Though the project's contrast would attract some attention, it would not have a commanding position in the visual landscape and may be overlooked by a viewer. The NGTP's visual contrast is rated moderately low.

On page 6.11-8 of the SPPE application, the applicant states "The Project, in the absence of screening, would be highly visible because of the flat, open viewing conditions" (IID 2006a, pg. 6.11-8). On page 6.11-17 under Landscaping, the applicant states "Landscaping will be incorporated into the Project so as not to add incrementally to the overall change in viewsheds" (IID 2006a, pg. 6-11-17). On page 6.11-18, section 6.11.4 Mitigation Measures under *Landscaping*, the applicant states "The Project would comply with any landscaping standards required by Imperial

County" (IID 2006a, pg. 6.11-18). Landscape standards for industrial uses are found in the County of Imperial Codified Ordinances, Title 9 Land Use Code, section 90302.03 *Landscaping standards-Industrial uses* (below).

90302.03 Landscaping standards--Industrial uses.

The following standards shall apply to landscaping for industrial/manufacturing uses.
A. Minimum of five percent of the developed lot area shall be landscaped.
B. Along any interior property line abutting a residentially zoned lot, parcel or area, trees shall be planted at least every twenty-five (25) feet in either individual planters or a maintained median planting area.
C. Planters or landscaped areas shall be provided within off-street parking areas at a minimum of five percent of the total parking area.
D. Within each planter or landscaped area, an irrigation system and live landscaping shall be provided and maintained.
E. Ornamental or landscaping rock and gravel areas, artificial turf, or other areas covered with other artificial materials shall be considered hard surface area but may be credited toward the minimum five percent landscaping requirement.
F. Along any interior property line abutting commercially zoned lots, parcels or areas, trees shall be planted at least every fifty (50) feet. (Prior code § 90302.03)

Source: County of Imperial Codified Ordinances, Title 9, Chapter 2, section 90302.03

From KOP 1 there are no notable scenic features that would be blocked from view by the project. The KOP view is already disrupted by an existing substation and numerous vertical structures. View disruption is considered low.

The photo-simulation of the project from KOP 1 shows that NGTP structures would appear dominant in the view. However, the overall visual change caused by the proposed project is considered to be moderate, as a result of moderately low contrast, low view disruption, and high dominance.

Staff concludes that introduction of the NGTP structures would not substantially degrade the existing visual character or quality of the site and surroundings as viewed from KOP 1. Considering KOP 1's overall visual sensitivity of moderately low, and the overall visual change of moderate, the proposed project would generate a less than significant visual effect.

KOP 2 – View looking northeast from Commercial Avenue and Main Street

Visual Resources Figure 4 presents a photo of the existing view, and a photo-simulation representing the view of the proposed project from several residences at the northeast end of the town of Niland.

Visual Sensitivity

The view at KOP 2 is topographically flat. In the view are a number of man-made vertical pole structures. The vertical structures consist of numerous metal and wood 50 to 80-foot transmission poles. At least six different transmission lines and poles cross the property. A 150-200-foot (approximate) wireless communication tower is

also in the view. The project site is approximately 0.5-mile from KOP 2. Exposed arid soil, two sets of active Union Pacific railroad tracks running northwest to southeast and numerous small bushy trees are in the view. An existing electric substation is in the center of the view and is visually muted within the silhouette-line of the Chocolate Mountains. The proposed NGTP would be built to the east of the substation. The visual quality at this KOP is considered moderately low.

The view at KOP 2 is from people who live in a recreational travel trailer park (J&H Trailer Park). Residents have a mostly unobstructed view of the electric substation and vertical pole structures which disrupt the view of the distant Chocolate Mountains. Viewer concern is rated as moderately low considering the moderately low visual quality and fairly regular freight train activity in the view to the east.

The recreational travel trailer park is occupied by a number of recreational vehicles, less than 20 of which have views toward the proposed project. This number of residences is considered low.

From KOP 2, the overall visual sensitivity is considered moderately low as a result of the moderately low visual quality, moderately low viewer concern, and moderate viewer exposure.

Visual Change

The proposed project would introduce new structures with vertical, cylindrical forms and horizontal lines of industrial character which would be behind the existing substation. The proposed plant's neutral gray and beige/tan surface colors as depicted in the simulations would be in harmony with the existing colors of the desert landscape, and the distant Chocolate Mountains. In this setting, the NGTP structures would have a moderately low overall visual contrast.

On page 6.11-8 of the SPPE application, the applicant states "The Project, in the absence of screening, from the railroad and/or the substation, would by highly visible because of the flat, open viewing conditions" (IID 2006a, pg. 6.11-8). As previously noted on page 6.11-17 under Landscaping, the applicant states "Landscaping will be incorporated into the Project so as not to add incrementally to the overall change in viewsheds"(IID 2006a, pg. 6.11-17).

From KOP 2, there are no notable existing scenic features that would be blocked from view by the proposed project. The Chocolate Mountains are approximately nine miles from the KOP. The project's two 60-foot exhaust stacks appear to blend within the silhouette-line of the Chocolate Mountains. View disruption would be low.

The proposed NGTP would appear subordinate to co-dominant in scale when compared to other landscape components in the view. The NGTP as simulated would occupy a small portion of the total field-of-view from KOP 2. Dominance is rated as moderate.

From KOP 2, the overall visual change caused by the proposed project is considered to be moderately low as result of a moderately low contrast, low view disruption, and moderate dominance.

Staff concludes the introduction of the NGTP structures would not substantially degrade the existing visual character or quality of the site and surroundings as viewed from KOP 2. Considering KOP 2's overall visual sensitivity of moderately low, and the overall visual change of moderately low, the proposed project would generate a less than significant visual effect.

Cooling Tower and Combustion Exhaust Stack Plumes
Although not specifically identified on the Appendix G Environmental Checklist Form under Aesthetics, staff includes the analysis for potential visual impacts generated by the project's cooling tower and exhaust stack plumes at operation under this checklist item.

The NGTP will not have a cooling tower. The NGTP is expected to have a combustion exhaust temperature range from 837 to 956 degrees Fahrenheit, and a stack moisture content ranging between 4.3 percent and 4.5 percent. At such high temperatures, little or no visible water vapor plumes would be expected to form above the exhaust stacks under any combination of operating and ambient conditions at this location. The project would result in a less than significant visual effect related to visible water vapor plumes.

D. Would The Project Create A New Source Of Substantial Light or Glare: Less Than Significant Impact

Nighttime construction of the NGTP is not expected to take place. In the unlikely event that nighttime construction does occur, the applicant would take measures to minimize the off-site visibility of this lighting. These measures would include using the minimal lighting required for operations and safety, and using lighting that is shielded and highly directional. The mitigation measures proposed by the applicant would ensure that construction lighting impacts, if they occur, are kept to less than significant levels.

Operation of the NGTP would require nighttime lighting for operational safety and security. If project lighting were uncontrolled, the resultant direct light trespass and uplighting to the nighttime sky could cause significant adverse visual impacts on nearby residences in Niland and along Cuff Road.

The applicant is committed to minimizing offsite lighting impacts. The applicant states on page 6.11-18, section 6.11.4 Mitigation Measures under *Night Lighting and Light Glare* "To help minimize night lighting impacts to a level below significance, night lighting elements would be shielded and directed downward" (IID 2006a, pg. 6.11-18). In addition the applicant would install separate switches for the lights on the tallest structures, such as the exhaust stacks, so they could remain turned off except during maintenance activities. With the applicant's commitment to minimize light emissions offsite, the NGTP project would not result in a substantial new source of light that could adversely affect nighttime views.

Photo-simulations of the proposed facility provided by the applicant show the power plant utilizing a surface treatment on major project structures, buildings and tanks with a gray and tan color and a flat finish. This finish would not create excessive glare. The applicant states on page 6.11-18, section 6.11.4 Mitigation Measures, under *Night Lighting and Light Glare* "Colors and textures will be chosen to help minimize light glare in the area" (IID 2006a, pg. 6.11-18).

On page 6.11-18, section 6.11.4 Mitigation Measures, under *Transmission Lines*, the applicant states "Structures and conductor will be treated to reduce sun reflectivity" (IID 2006a, pg. 6.11-18).

With the applicant's commitment to treat project structures in a manner that minimizes glare, the project would not be a source of substantial glare that could adversely affect views.

CUMULATIVE IMPACTS

A project may result in a significant adverse cumulative impact where its effects are cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (California Code Regulation, Title 14, section 15130.). The significance of the cumulative impact would depend on the degree to which (1) the viewshed is altered; (2) visual access to scenic resources is impaired; or (3) visual quality is diminished.

Niland Gas Turbine Plant SPPE Appendix H - List of Proposed Projects in Imperial County does not identify any proposed projects to be constructed near the site, or within KOP 1 or KOP 2 viewsheds. "Imperial County planning staff identified no other industrial or commercial projects in the Project's vicinity" (IID 2006a, pg. 6.11-19).

The NGTP would not result in significant alteration to the existing landscape, or visual impairment to notable scenic resources. The proposed project's visual impact considering other existing and proposed development would be less than cumulatively considerable.

RESPONSES TO PUBLIC AND AGENCY COMMENTS

No comments have been received as of this writing.

CONCLUSIONS

The proposed NGTP project would generate a less than significant direct and cumulative visual impact. The applicant's utilization of a surface treatment for major project structures, buildings, tanks and transmission poles in a color and finish that would not create excessive glare, or contrast, and minimizes visual intrusion, ensures that no significant direct or cumulative visual impact on the environment would take place.

Staff has evaluated the applicant's mitigation measures as described in the SPPE application and supplements thereto, and the applicable Landscaping Standards – industrial uses described under Item C-Visual Character or Quality for Operation Impacts, Chapter 2, Section 90302.02 of Title 9, of the County of Imperial Codified Ordinances. We have concluded that IID will effectively implement the proposed mitigation measures for this project, and its associated facilities to avoid or mitigate any impacts from project structures and building surfaces visible to the public.

PROPOSED CONDITIONS OF EXEMPTION

None recommended by staff.

REFERENCES

County of Imperial. Imperial County Codified Ordinances, Title 9, Division 3, Chapter 1 Special Development Standards.

County of Imperial. Imperial County Codified Ordinances, Title 9, Division 3, Chapter 2 Landscaping.

County of Imperial. Imperial County General Plan, Circulation and Scenic Highways Element, December 2003.

IID2006a – Imperial Irrigation District/j. federowicz (tn: 36510). Submittal of the Application for Small Power Plant Exemption for the Niland Gas Turbine Plant Dated 03/13/06. Submitted to CEC/B.B. Blevins,/Dockets on 03/13/06.

IID2006g – Imperial Irrigation District/URS (tn: 36849) First Round Data Responses Dated 04/25/06. Submitted to Dockets on 04/26/2006.

APPENDIX VR-1: STAFF'S VISUAL RESOURCES EVALUATION METHODOLOGY

Visual resources analysis has an inherent subjective aspect. Use of generally accepted criteria for determining environmental impact significance and a clearly described analytical approach aid in developing an analysis that can be readily understood.

Staff's methodology is based on the California Environmental Quality Act (CEQA) Guidelines. The methodology includes an evaluation of the visual characteristics of the existing setting, the visual characteristics of the proposed project, the circumstances affecting the viewer, and the degree of visual impact that the proposed project would cause.

ELEMENTS OF THE METHODOLOGY

Key Observation Points

A proposed project is potentially visible from a number of areas in a viewshed. Energy Commission staff evaluate the visual impact of the project using a Key Observation

Point[1], or KOP. One or more KOPs are selected to be representative of the most critical locations from which the proposed project would be seen. A KOP is representative of a location from which to conduct a detailed analysis of the project, and includes an existing condition/setting photograph, and simulation of the proposed project using the existing condition photograph.

Prior to application submittal, staff participates in a site visit to select appropriate KOP(s) for the analysis. Other photos to demonstrate the general landscape character of the project area are also included, as appropriate.

LORS Consistency

Energy Commission staff consider federal, state, and local laws, ordinances, regulations, and standards (LORS) relevant to visual resources. Conflicts with such LORS can constitute significant visual impacts. For example visual staff examines land use planning documents, such as local government General Plans and Specific Plans, and zoning ordinances applicable to the project site and surrounding area to gain insight as to the type of land uses intended for the area, and the guidelines given for the protection or preservation of visual resources.

Visible Water Vapor Plume Frequency

Staff models the estimated turbine plume frequency and dimensions for the cooling tower and turbine exhaust using the Combustion Stack Visible Plume (CSVP) model, and a multi-year meteorological data set obtained for the area where the project is proposed.

A plume frequency of 20 percent of seasonal (typically from November through April) daylight no rain/fog high visual contrast (i.e. “clear”) hours is used to determine potential plume impact significance. If it is determined that the seasonal daylight clear hour plume frequency is greater than 20 percent, then plume dimensions are determined and a significance analysis is included in the Visual Resources section of the Staff Assessment for the proposed project. Plume frequencies of less than 20 percent have been determined to generally have a”less-than-significant” impact.

California Environmental Quality Act Guidelines

The CEQA Guidelines define a “significant effect on the environment” to mean a “substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including . . . objects of historic or aesthetic significance” (California Code of Regulations, Title 14, Section 15382).

Appendix G Environmental Checklist Form of the CEQA Guidelines, under Aesthetics, lists the following four questions to be addressed regarding whether the potential impacts of a project are significant:

1. Would the project have a substantial adverse effect on a scenic vista?

[1] The use of KOPs or similar view locations is common in visual resource analysis. The US Bureau of Land Management and the US Forest Service use such an approach.

2. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

3. Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

4. Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

Staff answers each of the four checklist questions for the proposed project, including any related facility such as a transmission line or gas pipeline; and for both construction and operation phases.

The visual analysis typically distinguishes between three different impact durations: temporary impacts, typically lasting no longer than two years; short-term impacts, generally last no longer than five years; and long-term impacts, which are impacts with a duration greater than five years. In general, short-term impacts are not considered significant.

To help make these determinations, visual resource professionals often answer a series of questions developed to help focus the analysis, and examine various ways that the project could create an impact to scenic vistas. The Energy Commission's Visual Resources staff has developed such a list for each of the four CEQA guideline questions, drawing upon published methodologies and academic resources (Smardon, et al.), as well as on past experience with other power plant siting cases.

To answer the first checklist question (Would the project have a substantial adverse effect on a scenic vista?), staff must determine if any such scenic vista exists within the viewshed of the various aspects of the project, and then determine if the project would have a substantial adverse effect on that vista.

Questions developed to help determine whether the project would significantly affect a scenic vista include:

1. Is the project located in the scenic view of a local/state/federal-designated scenic vista?

2. Is there compelling evidence to show that the view is designated/valued by the local community?

3. Will the project eliminate or block views of valuable visual resources?

4. Would the project create a water vapor plume that could have an adverse effect on a state/federal/local-designated scenic vista?

To help answer the second CEQA checklist question above (Would the project substantially damage scenic resources, including, but not limited to, trees, rock

outcroppings, and historic buildings within a state scenic highway?), staff developed the following questions:

1. Is the project located in the scenic view from a local/state/federal-designated scenic highway?

2. Does the project site or its immediate vicinity contain scenic resources, such as trees, rock outcroppings, or historic structures that could be damaged by the project?

3. Would the project create a water vapor plume that could have an adverse effect on the view from a local/state/federal-designated scenic highway?

To answer the third question (Would the project substantially degrade the existing visual character or quality of the site and its surroundings?), staff assesses the existing visual character and quality of the project area, and then determines how the project would affect the character and quality of the project viewshed. To assess whether the project has the potential to substantially degrade the present visual character or quality, staff uses personal observation and such tools as visual simulations to determine if an impact is significant and mitigation is required to reduce the impact to a less-than-significant level. To make that determination, staff examines many factors, such as: how many viewers can see a particular view and for how long, collectively called "viewer exposure;" and to what degree would the project change the aspects of a given view, such as whether the project's components would block a particular view.

To help determine how the community rates and values the visual character and quality of a given site, and whether the project would substantially alter the present visual character or quality, staff developed the following questions:

1. How many residential, recreational, and traveling (motorist) viewers would have views of the project?

2. Is the project site properly zoned?

3. Would a conditional use permit and/or height variance have been required from the city/county (if so what conditions would the city/county place on the power plant)?

4. Does the project conform to the clear written declarations of local/state/federal agencies to protect designated visual resources of importance or the valued aesthetic character of a neighborhood (said declaration must be clear, concise, and uncompromised by conflicting declarations, and be an official action of the governing body (City Council/Board of Supervisors) such as a General Plan element, zoning ordinance, or design guideline)?

5. Will the project substantially alter the existing viewshed, including any changes in natural terrain?

6. Does the project substantially change the existing setting?

7. Has the applicant proposed landscaping?

8. Would the project create a water vapor plume that could have an adverse effect on a KOP view?

The process of answering these questions includes an examination of the present views within the project viewshed in terms of aesthetics (quality of a view), followed by an assessment of how the view would be affected by the project. This could be described as an analysis of how well the project area can absorb the project into the landscape.

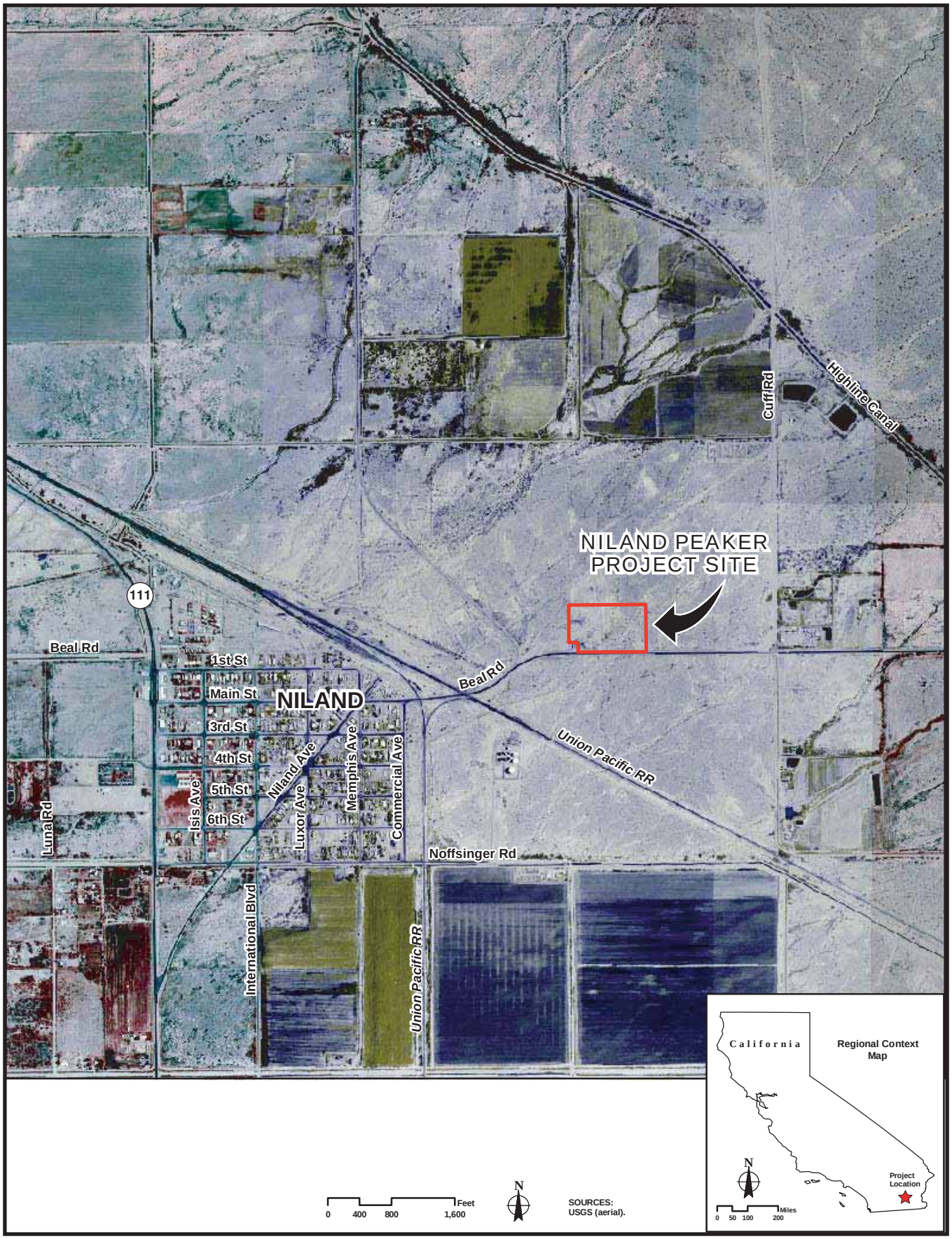
Staff attempts to determine if the local community values a particular view that may be affected by the project. To do this, staff searches applicable planning documents covering the project area produced by local public agencies, and information prepared by community groups. The Energy Commission gives due deference to official statements by elected governmental bodies concerning the value of visual resources within the project area.

To answer the fourth CEQA Guidelines checklist question (Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?), staff analyzes the project's lighting plans to ensure they fit with established norms for low-impact lighting designs, and then answers the following questions to determine if a potential for impact from night-lighting exists:

1. With the Energy Commission's standard condition of certification for lighting control, would light or glare be reduced to acceptable levels?

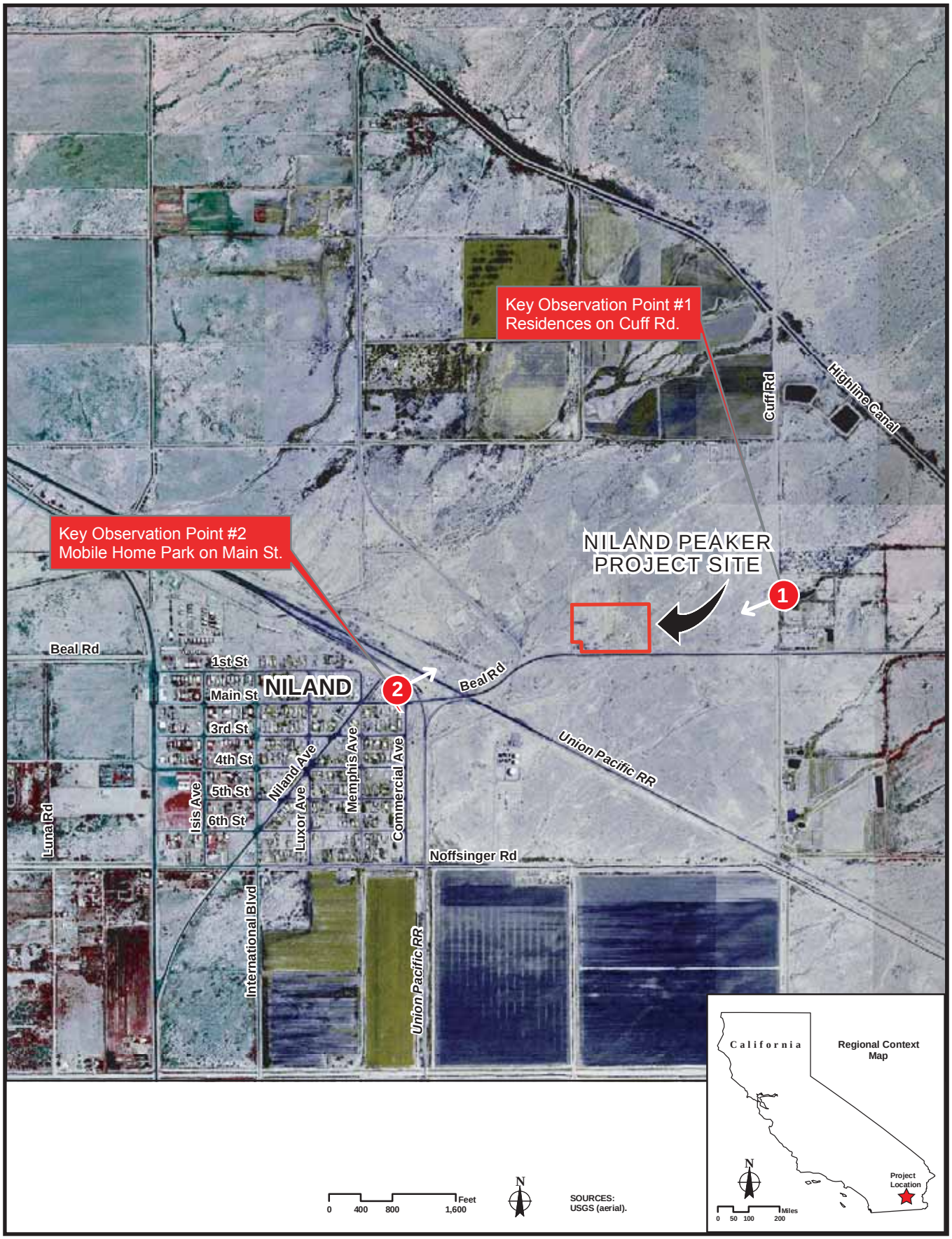
2. Will the project result in significant amounts of backscatter light into the nighttime sky?

VISUAL RESOURCES - FIGURE 1
Niland Peaker Project - Aerial View of Project



CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, AUGUST 2006
SOURCE: SPPE Figure 6.7-1

VISUAL RESOURCES - FIGURE 2
Niland Peaker Project - Key Observation Points (KOPs)



CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, AUGUST 2006
SOURCE: SPPE Figure 6.11-3

VISUAL RESOURCES - FIGURE 3

Niland Peaker Project - Existing and Simulated Views from KOP #1 - Residences on Cuff Road

Existing View from Residences on Cuff Road

Simulated View from Residences on Cuff Road

CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, AUGUST 2006

SOURCE: SPPE Figure 6.11-7

VISUAL RESOURCES - FIGURE 4

Niland Peaker Project - Existing and Simulated Views from KOP #2 - Mobile Home Park on Main Street

Existing View from Mobile Home Park on Main Street

Simulated View from Mobile Home Park on Main Street

CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, AUGUST 2006

SOURCE: SPPE Figure 6.11-8

WASTE MANAGEMENT

Testimony of Alvin J. Greenberg, Ph.D.

SUMMARY OF CONCLUSIONS

Based on the findings of the initial study and subsequent investigations by the applicant, staff concludes that the proposed Niland Gas turbine Plant (NGTP) impact on waste will be less than significant.

INTRODUCTION

The purpose of this section is to assess the potential impacts associated with the Niland Gas Turbine Plant (NGTP) project's proposed generation and management of hazardous and nonhazardous wastes. Energy Commission staff's objective is to ensure that there would be no significant adverse impacts from wastes generated during the project's life-cycle. A brief overview of the project is provided, as are discussions regarding important environmental checklist items with respect to hazardous and nonhazardous wastes. A discussion of additional items listed in the Hazards and Hazardous Materials portion of the checklist is in the **Hazardous Materials Management** section of this Final Study. The section concludes with staff's proposed conditions of exemption.

LAWS, ORDINANCES, REGULATION, AND STANDARDS

WASTE MANAGEMENT Table 1
Laws, Ordinances, Regulations, and Standards (LORS)

Applicable Law	*Description*
Federal	
42 U.S.C. § 6922 Resource Conservation and Recovery Act	The RCRA establishes requirements for the management of hazardous wastes from the time of generation to the point of ultimate treatment or disposal. Section 6922 requires generators of hazardous waste to comply with requirements regarding: • Record keeping practices which identify quantities of hazardous wastes generated and their disposition, • Labeling practices and use of appropriate containers, • Use of a manifest system for transportation, and • Submission of periodic reports to the Environmental Protection Agency (EPA) or authorized state agency.
Title 40, Code of Federal Regulations, part 260	These sections contain regulations promulgated by the EPA to implement the requirements of RCRA as described above. Characteristics of hazardous waste are described in terms of ignitability, corrosivity, reactivity, and toxicity, and specific types of wastes are listed.
State	
California Health and Safety Code §25100 et seq. (Hazardous Waste Control Act of 1972, as amended)	This act creates the framework under which hazardous wastes must be managed in California. It mandates the State Department of Health Services (now the Department of Toxic Substances Control (DTSC) under the California Environmental Protection Agency (Cal EPA)) to develop and publish a list of hazardous and extremely hazardous wastes, and to develop and adopt criteria and guidelines for the identification of such wastes. It also requires hazardous waste generators to file notification statements with Cal EPA and creates a manifest system to be used when transporting such wastes.
Title 14, California Code of Regulations, §17200 et seq. (Minimum Standards for Solid Waste Handling and Disposal)	These regulations set forth minimum standards for solid waste handling and disposal, guidelines to ensure conformance of solid waste facilities with county solid waste management plans, as well as enforcement and administration provisions.
Title 22, California Code of Regulations, §66262.10 et seq. (Generator Standards)	These sections establish requirements for generators of hazardous waste. Under these sections, waste generators must determine if their wastes are hazardous according to either specified characteristics or lists of wastes. As in the federal program, hazardous waste generators must obtain EPA identification numbers, prepare manifests before transporting the waste off-site, and use only permitted treatment, storage, and disposal facilities. Additionally, hazardous waste must only be handled by registered hazardous waste transporters. Generator requirements for record keeping, reporting, packaging, and labeling are also established

	and are enforced by the Cal-EPA Department of Toxic Substances Control.
Title 22, California Code of Regulations, §67100.1 et seq. (Hazardous Waste Source Reduction and Management Review)	These sections establish reporting requirements for generators of certain hazardous and extremely hazardous wastes in excess of specified limits. The required reports must indicate the generator's waste management plans and performance over the reporting period.
Local	
California Building Code and California Fire Code	Enforced by the local Certified Unified Program Agency (CUPA) and Fire Department. Includes a requirement that businesses obtain permits for the use and storage of specified hazardous materials. This permit must be obtained before storing regulated hazardous wastes at the project site.

SETTING

Imperial Irrigation District (IID) proposes to construct, own, and operate an electric generating facility in Imperial County near the community of Niland (IID 2006a). The proposed facility would consist of a simple-cycle power plant rated at a nominal gross generating capacity of 93 megawatts (MW). The proposed facility will be situated on approximately 22 acres. During construction, 4 additional acres of land will be disturbed for temporary structures and construction laydown. A Phase I Environmental Site Assessment (ESA) was conducted for this site by URS in August 2005, in general accordance with ASTM guidelines (E 1527-00). This assessment covered 80 acres located north of Beal Road and west of Cuff Road in Niland, which include the 22-acre project site, and found that the proposed project site consists of undeveloped land with the exception of the northwest corner where a substation and radio tower are located.

Based on aerial photographs submitted in Appendix K of the SPPE application, the subject parcel has not been farmed since 1945 and is currently vacant. The 1996 (most recent) aerial photographs depict the subject property as relatively unchanged, except for the construction of the radio tower located near the existing substation. There are currently no crops grown at the project site as stated above and the parcel has no known history of being farmed. The nearest agricultural usage is on parcels north and northwest of the project site. The project would not involve changes that could impact agricultural lands or result in conversion of farmland to non-agricultural uses. The SPPE application concluded that there was "no evidence of recognized environmental conditions" (IID 2006a, Appendix K), however, staff finds that the above mentioned historical uses and activities occurred well before current environmental regulations and could have resulted in the release of hazardous substances at the site, posing a risk to human health and/or the environment.

IMPACTS

Following is the Environmental Checklist that identifies potential impacts in this issue area. Below the checklist are a discussion of each impact and an explanation of the impact conclusion.

ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
HAZARDS AND HAZARDOUS MATERIALS – Would the project:				
A. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
B. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
C. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
UTILITIES AND SERVICE SYSTEMS – Would the project:				
D. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	

DISCUSSION OF IMPACTS

The proposed project would be considered to have significant impacts relating to waste management if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Result in the emission or handling of hazardous materials, substances, or waste within ¼ -mile of an existing or proposed school.
- Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and would create a significant hazard to the public or environment.
- Not be serviced by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.
- Not comply with federal, state, and local statutes and regulations related to solid waste.

The basis for the outcomes provided in the checklist is discussed below.

A. Create a Significant Hazard to the Public Through Routine Transport, Disposal or Use of Hazardous Materials: Less Than Significant Impact

Preconstruction

The Phase I ESA, conducted by the URS Corporation, determined that the property showed no evidence of recognized environmental conditions and, therefore, there is no need for further assessment. Staff is confident that proposed Condition of Exemption Waste-1 will address any contingency and ensure the protection of public health and worker health.

Two easements, relating to the existing substation, may affect the project site, since electrical transformers stored at the substation in 1954 could have used Polychlorinated Biphenyls (PCB) containing oils. The applicant therefore provided a scope of work and a schedule for conducting a limited Phase II ESA to identify potential PCB contamination near the substation (IID 2006g, Data Response 25, Attachment 2). Staff reviewed the proposed scope of work and determined it was acceptable. The assessment was conducted and four (4) out of the twelve (12) soil samples collected and analyzed contained concentrations of PCBs above the detection level but at a level that would not pose a significant risk to humans or the environment (URS2006e). The applicant has indicated that these soils containing low levels of PCBs will be removed from the site and transported to a permitted hazardous waste repository (URS2006e). The removal of these soils, although not required by LORs, will remove any risk to humans and the environment

Construction

Site preparation and construction of the proposed generating plant would generate both nonhazardous and hazardous wastes in solid and liquid forms.

Nonhazardous Wastes

Nonhazardous solid wastes generated during construction include minor amounts of wood, paper, glass, plastics, concrete, soil, and scrap metal. Wherever possible and practical, these wastes would be recycled. Nonrecyclable wastes would be collected and disposed of in a Class III landfill (see Waste Management Table 1). The applicant estimates that less than one cubic yard per month of non-hazardous solid wastes would be generated during construction (IID 2006a Table 6.14-2).

Hazardous Wastes

Hazardous wastes anticipated to be generated during construction may include spent welding materials, oily rags and absorbent, spent batteries, and empty hazardous materials containers, but the majority of hazardous waste generated during construction would be liquid wastes such as waste oil; flushing and cleaning fluids; and waste solvents, paints and other material coatings. These wastes would be disposed to an appropriate hazardous waste disposal facility, or recycled if possible.

Operation and Maintenance

The proposed Niland project would generate both nonhazardous and hazardous wastes in solid and liquid forms under normal operating conditions.

Nonhazardous Wastes

Nonhazardous solid wastes generated during plant operation are expected to include oily rags and municipal waste such as paper, food, and plastic. Less than 1 cubic yard of municipal solid waste and less than one 55-gallon drum of oily rags are expected to be generated each month of operation (IID 2006a Table 6.14-2).

Hazardous Wastes

Hazardous wastes anticipated to be generated during routine project operation include waste lubricating oil, used oil filters, spent selective catalytic reduction (SCR) and CO catalyst, oily rags and absorbents, cleaning chemicals and detergents. The quantities of hazardous wastes generated during project operation would be relatively small. Hazardous wastes would be disposed in a Class I landfill or recycled by certified recyclers (IID 2006a Table 6.14-3).

B. Emit or Handle Hazardous Waste Within One-quarter Mile of an Existing or Proposed School: No Impact

There are no schools within one-quarter mile of the proposed project. The nearest residence is approximately 1,560 feet (0.3 miles) east of the proposed facility, the nearest public schools are Smith Elementary School and C.U.I. Headstart at approximately 3,200 feet (0.6 miles) southwest of the proposed site, and the nearest medical clinic is Niland Family Health Center located approximately 0.5 miles southwest of the proposed site (IID 2006a Section 6.14.4.2 and Figure 6.8-1). At these distances, there is virtually no risk of hazardous wastes causing an off-site impact.

C. Located on a Hazardous Waste Site: No Impact

The proposed site is not located on any list of hazardous materials sites compiled pursuant to Government Code section 65962.5.

D. Served by a Landfill with Sufficient Capacity: Less Than Significant Impact

Project operation would generate less than one cubic yard per month of nonhazardous solid wastes typical of office and maintenance activities at an industrial facility. Anticipated wastes include paper, trash, plastic, and other materials.

The total amounts of all nonhazardous solid wastes from both construction and operation activities will slightly reduce the available capacity of the two landfills identified for this project, but will not significantly affect either their daily capacity or anticipated remaining lifetimes (see Waste Management Table 1, below). Thus, this impact will be less than significant, given the capacity of the landfills and the inclusion of recycling efforts.

Waste Management Table 2: Available Waste Disposal Facilities

Waste Disposal Facility	Location	Type of Landfill or Waste	Remaining Lifetime	Permitted Capacity	Remaining Capacity
Allied Imperial Landfill	104 E. Robinson Rd. Imperial, CA 92251	Class III Solid Waste	8-10 years on existing 42 acres (167-acre proposed expansion would add 50 years)	3.588 million cubic yards	2.417 million cubic yards
La Paz County Landfill	26999 HWY 95 Mile Marker 128 Parker, AZ 85344	Class II Treated wood	Approximately 50 years	26.5 million cubic yards	24.8 million cubic yards (as of 12-05)

Source: Response to Data Request # 28, April 2006 (IID 2006g).

Similarly, the project's small amounts of hazardous waste generated during operation would insignificantly affect the capacity of the state's Class I (hazardous) landfills, which are the Buttonwillow Landfill in Kern County, the Superstition Hills Landfill in Imperial County, and the Kettleman Hills Landfill in King's County. In total, there is an excess of 20 million cubic yards of remaining hazardous waste disposal capacity at these landfills, and up to 16 years of remaining operating lifetimes.

CUMULATIVE IMPACTS

Due to the minor amounts of wastes generated during project construction and operation, the less than significant impacts on individual recycling and disposal facilities, and the availability of regional landfills, cumulative impacts will be insignificant for both hazardous and nonhazardous wastes.

RESPONSE TO PUBLIC AND AGENCY COMMENTS

None received.

CONCLUSIONS

Management of hazardous and nonhazardous wastes generated during construction and operation of the Niland Project will not result in any significant adverse impacts if Niland implements the waste management procedures described in the SPPE application and staff's proposed Conditions of Exemption. In order to ensure that the workers on the site would not be exposed to hazardous waste in the soil, a limited Phase II ESA was conducted to identify potential PCB contamination near the substation. The results showed levels of PCBs in four (4) of twelve (12) soil samples but at levels below those which would pose a significant risk to humans and the environment. The applicant has nevertheless chosen to remove these soils thus removing any risk.

PROPOSED CONDITIONS OF EXEMPTION

WASTE-1 The project owner shall provide the resume of a Registered Professional Engineer or Geologist, who shall be available for consultation during soil excavation and grading activities, to the Department of Toxic Substances Control (DTSC)/Imperial County Certified Unified Program Authority (CUPA) for review and approval. The resume shall show experience in remedial investigation and feasibility studies. The Registered Professional Engineer or Geologist shall be given full authority by the project owner to oversee any earth moving activities that have the potential to disturb contaminated soil. If potentially contaminated soil is unearthed during excavation at either the proposed site or linear facilities as evidenced by discoloration, odor, detection by handheld instruments, or other signs, the Registered Professional Engineer or Geologist shall inspect the site, determine the need for sampling to confirm the nature and extent of contamination, and file a written report to the project owner and the CUPA stating the recommended course of action. Depending on the nature and extent of contamination, the Registered Professional Engineer or Geologist shall have the authority to temporarily suspend construction activity at that location for the protection of workers or the public. If, in the opinion of the Registered Professional Engineer or Geologist, significant remediation may be required, the project owner shall contact representatives of the CUPA and the Cypress Office of the Cal EPA Department of Toxic Substances Control (DTSC) for guidance and possible oversight.

Verification: At least 30 days prior to the start of site mobilization the project owner shall submit the resume to the DTSC/CUPA for review and approval. The project owner shall submit any final reports filed by the Registered Professional Engineer or Geologist to the DTSC/CUPA within 5 days of their receipt. The project owner shall notify the DTSC/CUPA within 24 hours of any orders issued to halt construction.

WASTE-2 The project owner shall obtain a hazardous waste generator identification number from the Department of Toxic Substances Control prior to generating any hazardous waste during construction and operations.

Verification: The project owner shall keep its copy of the identification number on file at the project site and notify the DTSC/CUPA of its receipt.

WASTE-3 The project owner shall prepare a Construction Waste Management Plan and an Operation Waste Management Plan for all wastes generated during construction and operation of the facility, respectively, and shall submit both plans to the DTSC/CUPA and the Imperial County Solid Waste Local Enforcement Agency (LEA) for review and approval. The plans shall contain, at a minimum, the following:

- A description of all waste streams, including projections of frequency, amounts generated and hazard classifications; and
- Methods of managing each waste, including treatment methods and companies contracted with for treatment services, waste testing methods to assure correct classification, methods of transportation, disposal

requirements and sites, and recycling and waste minimization/reduction plans.

Verification: No less than 30 days prior to the start of site mobilization, the project owner shall submit the Construction Waste Management Plan to the DTSC/CUPA and the LEA for approval.

The Operation Waste Management Plan shall be submitted to the CUPA and the LEA no less than 30 days prior to the start of project operation for approval. The project owner shall submit any required revisions within 20 days of notification by the CUPA and the LEA.

WASTE-4 The project owner shall consult with the CUPA and the DTSC for guidance for the site management and mitigation of all contaminated soils as a result of the Phase II EAS. In no event shall any project construction commence that involves either the movement of the contaminated soil or construction on contaminated soil until the DTSC or CUPA has determined that all necessary remediation has been accomplished.

Verification: At least sixty (60) days prior to the start of site mobilization, the project owner shall provide the appropriate documentation that the site has been appropriately remediated with closure approved by DTSC or Imperial County CUPA.

REFERENCES

IID2006a – Imperial Irrigation District/j. federowicz (tn:36510). Submittal of the Application for Small Power Plant Exemption for the Niland Gas Turbine Plant Dated 03/13/06. Submitted to CEC/B.B. Blevins,/Dockets on 03/13/06.

IID2006g – Imperial Irrigation District/URS (tn:36849) First Round Data Responses Dated 04/25/06. Submitted to Dockets on 04/26/2006.

URS2006e - URS Corporation/D. Hahn (tn:37593) IID Data Request Response Waste Management - Doug Hahn URS. Dated 8/3/2006. Submitted to CEC/Dockets on 8/3/2006.

GENERAL CONDITIONS OF EXEMPTION

Testimony of Donna Stone

INTRODUCTION

The Imperial Irrigation District's (IID) Niland Gas Turbine Plant (NGTP) Compliance Plan has been established as required by Section 25532 of the Public Resources Code. The plan provides a means for assuring that the facility is constructed and operated in compliance with air and water quality, public health and safety, other applicable laws, ordinances, regulations and standards, and conditions of exemption.

The Compliance Plan is divided into two sections:

1. Compliance with general conditions of exemption which specify the framework for record keeping and reporting throughout the construction and operation phases of the project; and,
2. Conditions of exemption which contain measures that must be taken to mitigate any and all potential adverse project impacts to an insignificant level.

The compliance general conditions are presented first. The conditions of exemption follow and are organized by technical area.

Each condition of exemption has a verification statement describing the means by which compliance with the condition can be verified. The verification procedures may be modified by the Energy Commission Compliance Project Manager (CPM) as necessary to ensure compliance with the adopted conditions of exemption. Verification of compliance with the conditions will also be accomplished by periodic reports filed by the project owner as required by the general conditions, auditing of project records, and by staff inspections of the power plant site and related facilities.

GENERAL CONDITIONS OF EXEMPTION DEFINITIONS

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

SITE MOBILIZATION

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

GROUND DISTURBANCE

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

GRADING

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

CONSTRUCTION

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

a. The installation of environmental monitoring equipment.

b. A soil or geological investigation.

c. A topographical survey.

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

e. Any work to provide access to the site for any of the purposes specified in a., b., c., or d.

COMPLIANCE PROJECT MANAGER RESPONSIBILITIES

A Compliance Project Manager (CPM) will be designated to oversee compliance with the general compliance conditions and conditions of exemption. The assigned CPM, after consultation with the appropriate technical staff, and approval of Energy Commission management, shall:

1. Ensure that compliance files are established and maintained for the NGTP project;

2. Track compliance filings;

3. Ensure the timely processing of proposed changes to the Energy Commission Decision;

4. Use all available means to encourage the resolution of disputes; and,

5. Coordinate compliance monitoring activities of Energy Commission.

PROJECT OWNER RESPONSIBILITY

It shall be the responsibility of the project's owner(s) and operator(s) to ensure that the compliance general conditions and all conditions of exemption are satisfied. IID must comply with the conditions of exemption and compliance general conditions. Failure to

comply with any of the conditions of exemption or the compliance general conditions may result in reopening of the case and revocation of the SPPE, or other action as appropriate.

IID shall send all verification submittals to the CPM whether such condition was satisfied by work performed by IID or other agent, and whether or not such verification was also submitted to the CPM by an agent.

COMPLIANCE RECORD

IID shall maintain, for the life of the project, files of all conditions of exemption and compliance general conditions related correspondence, and final as-built drawings.

The Energy Commission shall maintain as a public record:

1. All documents received regarding compliance with the compliance general conditions and conditions of exemption;

2. All complaints filed with the Energy Commission; and,

3. All petitions for changes to conditions and documentation of the resulting staff or Energy Commission action taken.

COMPLIANCE SUBMITTALS

All compliance submittals and correspondence pertaining to compliance matters shall include a cover letter with a description of the submittal and a reference to the compliance general condition and/or the condition of exemption number(s) which the submittal is intended to satisfy.

All submittals shall be addressed as follows:

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

CONSTRUCTION COMPLIANCE REPORTS

The project owner must submit construction compliance reports to assist the CPM in tracking activities and monitoring compliance with the terms and conditions of the Energy Commission Decision. During construction, the project owner or authorized agent will submit Monthly Compliance Reports. These reports, and the requirement for an accompanying compliance matrix, are described below.

COMPLIANCE MATRIX

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

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

PRE-CONSTRUCTION MATRIX

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

TASKS PRIOR TO START OF CONSTRUCTION

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

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

The first construction Monthly Compliance Report [if required based on conditions of exemption] is due the month following the Energy Commission business meeting date

on which the project was approved, unless otherwise agreed to by the CPM. The first Monthly Compliance Report shall include an initial list of dates for each of the events identified on the Key Events List. The Key Events List is found at the end of this section.

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

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

2. documents required by specific conditions to be submitted along with the Monthly Compliance Report. Each of these items must be identified in the transmittal letter, and should be submitted as attachments to the Monthly Compliance Report;

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

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

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

6. a cumulative listing of any approved changes to conditions of certification;

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

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

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

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

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

CONFIDENTIAL INFORMATION

Any information which IID deems proprietary shall be submitted to the Energy Commission Docket Unit (Mail Stop 4) to be processed pursuant to California Code of Regulations Title 20 section 2505(a). Any information which is determined to be confidential shall be kept confidential as provided for in CCR Title 20 section 2501 et seq. Information deemed not to be confidential will become public information.

ACCESS TO THE FACILITY

The CPM, or other designated Energy Commission staff or agent, shall be guaranteed and granted access at any time to the project site, transmission line right-of-way, and related sites to conduct audits, inspections, surveys, or general site visits.

POST CERTIFICATION CHANGES TO THE ENERGY COMMISSION DECISION

For the life of the project, the project owner must provide written notification to the CPM when planning changes to the project description. When a proposed change affects the conditions of exemption, the project owner must file a petition for the change with the CPM. The petition must contain the following information:

1. A complete description of the proposed modification(s), including proposed new language for the condition(s) of exemption that will be affected;

2. A discussion of the necessity for the proposed modification(s), including an explanation of why the modification was not considered during the original exemption proceeding for the project, and an explanation of the new information that has made the proposed modification necessary;

3. An analysis of the potential impacts the modification may have on the environment and the proposed measures to mitigate all potential impacts to a level of insignificance; and

4. A list of the property owners potentially affected by the proposed modifications.

The CPM will review petition filings and may authorize those petitions where there is no possibility that the modification(s) will result in a significant effect on the environment, or cause the project not to comply with any applicable laws, ordinances, regulations, or standards. Full Commission approval will be required for petitions that do not meet the above criteria.

A. Ownership or Operator Changes

   The project owner must notify the CPM in writing of any changes in ownership including identification of the new owner [contact person, address, phone number], any changes in the operational relationship between the owner and the operator, and a statement signed by the new owner that the new owner understands the

Compliance Plan and the Conditions of Exemption, and agrees to abide by those duties and obligations as described and intended by the conditions of exemption.

The project owner of record must provide to the CPM notice of any change in project ownership, as described above, for the life of the project.

KEY EVENT LIST

PROJECT: Niland Gas Turbine Plant

DOCKET #: 06-SPPE-1

COMPLIANCE PROJECT MANAGER: Donna Stone

EVENT DESCRIPTION	DATE
Certification Date	
Online Date	
POWER PLANT SITE ACTIVITIES	
Start Site Mobilization	
Start Ground Disturbance	
Start Rough Grading	
Start Construction	
First Combustion of Gas Turbine	
Start Commercial Operation	
Complete All Construction	
TRANSMISSION LINE ACTIVITIES	
Start T/L Construction	
COMPLETE T/L CONSTRUCTION	
SYNCHRONIZATION WITH GRID	
FUEL SUPPLY LINE ACTIVITIES	
Start Fuel Supply Line Construction	
COMPLETE FUEL SUPPLY LINE CONSTRUCTION	
WATER SUPPLY LINE ACTIVITIES	
START WATER SUPPLY LINE CONSTRUCTION	
COMPLETE WATER SUPPLY LINE CONSTRUCTION	

NILAND GAS TURBINE PLANT
PREPARATION TEAM

PROJECT MANAGER	JACK CASWELL
STAFF COUNSEL	KERRY WILLIS
PROJECT ASSISTANT	ANGELA HOCKADAY
AIR QUALITY	TUAN NGO
BIOLOGICAL RESOURCES	JOANNA REINHARDT
COMPLIANCE	DONNA STONE
CULTURAL RESOURCES	DOROTHY TORRES
ENERGY RESOURCES	SHAHAB KHOSHMASHRAB
GEOLOGY, MINERAL RESOURCES & PALEONTOLOGY	PATRICK PILLING
HAZARDOUS MATERIALS	GEOFF LESH
LAND USE & AGRICULTURE	AMANDA STENNICK
NOISE & VIBRATION	STEVE BAKER
PUBLIC HEALTH	ALVIN GREENBERG
SOCIOECONOMICS	JOE DIAMOND
SOIL & WATER RESOURCES	MICHAEL STEPHENS & LINDA BOND
TRAFFIC AND TRANSPORTATION	JIM ADAMS
TRANSMISSION LINE SAFETY & NUISANCE	OBED ODOEMELAM
TRANSMISSION SYSTEM ENGINEERING	AJOY GUHA
VISUAL RESOURCES	MARK HAMBLIN
WASTE MANAGEMENT	ALVIN GREENBERG

DECLARATION OF
Jack W. Caswell, Project Manager

I, Jack W. Caswell

1. I am presently employed at the California Energy Commission, in the Siting Office of the Energy Facilities Siting and Compliance Office as a Project Manager.

2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.

3. I prepare the staff testimony on the Executive Summary for the Niland Gas Turbine Plant project, on my independent analysis of the Small Power Plant Exemption application, supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.

4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.

5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify thereto.

   I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 8/31/06 Signed: Jack W. Caswell

At: Sacramento, California

JACK W. CASWELL

California Energy Commission Project Manager

EXPERIENCE SUMMARY

Thirty Five years of experience in project and staff management: Energy Commission; Project Manager, State Water Resources Control Board, Business Management Officer, Electrical Construction, Supervisor for residential and commercial projects, Quality Control/ Quality Assurance, Supervisor in the steel manufacturing industry, United Steelworkers of America; Union Grievance Person and US Army SGT.

PROFESSIONAL EXPERIENCE

ENERGY COMMSSION PROJECT MANAGER 2000 to Present

California Energy Commission: Project lead for the following licensing and amendment processes; Western Midway (99-AFC-09), Hanford Energy Park (00-SPPE-1), Warnerville SRG (00-AFC-11), Huntington Beach GRS (01-AFC-13), Valero Cogeneration Project (01-AFC-05), Russell City Energy Center (01-AFC-7), Tesla Power Project (01-AFC-21), Kings River Conservation District Peaking Plant (03-SPPE-2) and Morro Bay Power Plant Project (00-AFC-12), Blythe Energy Project Transmission Line Modification (99-AFC-8C), Delta Energy 98-AFC-03C) and Los Medanos Energy Centers (98-AFC-01C), air quality minor amendments and transmission line major amendment (2005-2006).

FACILITIES BUSINESS MANAGEMENT OFFICER 1993 to 2000

State Water Resources Control Board: Associate Business Management Analysts (ABMA); senior technical person and project lead for real estate and construction; including construction budget analysis, project cost benefit analysis, project scope development. Lead staff person responsibility for the Facilities Analysis Section for Regional Water Quality Control Boards (RWQCB). Provide project recommendations to SWRCB Director and RWQCB Executive Officers. Project Manager for SWRCB facility system development state wide.

LEAD ELECTRICIAN 1990 to 1993

Department of General Services: Installation of electrical transmission lines and equipment; provide cost estimates, develop drawings, operation of small power generating plants, manage complex electrical projects, supervise contractors on state projects and develop maintenance procedures.

ELECTRICAL CONSTRUCTION SUPERVISOR 1981 to 1990

Electrical Contractors: Construction supervision for commercial construction projects; responsible for industrial manufacturing plants, water and sewer treatment plants, to include large residential projects. Responsible for the supervision of project staff, development of schedules, advised on technical engineering changes, and construction material ordering.

QUALITY CONTROL INSPECTOR 1973 to 1981

Steel Manufacturing: Conducted quality control inspections and implement quality assurance procedures in the steel manufacturing industry. Elected as a grievance representative in 1974; responsible for representing Sacramento local United Steelworkers of America membership in grievance proceedings with a local steel product manufacturing company.

US ARMY/RA 1970 to 1972

Infantry Sergeant/Fort Ord California and Fort Lewis Washington, Military Police, Pan Mun Jom Korea.

Education

- Sierra College
- State Training Center, Analyst Course Studies and Supervisory Development Program
- Electrical Construction Technical School

DECLARATION OF
Tuan Ngo

I, **Tuan Ngo** declare as follows:

1. I am presently employed by the California Energy Commission in the Environmental Office of the Energy Facilities Siting Division as a **Mechanical Engineer.**

2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.

3. I helped prepare the staff testimony on **Air Quality** for the **Niland Gas Turbine Plant** project based on my independent analysis of the Small Power Plant Exemption and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.

4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.

5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: August 28, 2006 Signed: _____

At: Sacramento, California

TUAN A. NGO, P.E.
1516 Ninth Street
Sacramento CA 95814
(916) 654-3852

EDUCATION

Graduate from the University of California, Davis, in 1981 with a B.S. degree in Chemical Engineering.
Registered Chemical Engineer with the State of California, #CH-4433.
Course works in Air Pollution Control:

- Effective stack height and plume rise,
- Dispersion modeling,
- Fabric collector plan review,
- Wet scrubber plan review,
- Degreasing operations,
- Control of VOC emissions from leaking process equipment,
- PSD regulation,
- Hazardous waste incineration,
- ESP plan review,
- Boiler operations.

Teaching in Air Pollution Control:

- Degreasing operations,
- Dry cleaning,
- VOC emissions from leaking process,
- Control of VOC emissions.

EXPERIENCES

California Energy Commission – Mechanical Engineer - Siting Division/Air Quality Section – 1992 to present.

Evaluate applications for certification for power plants to identify any possible air quality impacts and assess appropriate mitigation measures. Manage contracts of, and conduct research studies on power plant emissions, and track the developments in new and innovative air pollution control technologies that are related to power plants. Maintain contact with local, state and federal air quality management agencies for update on the air quality issues.

California Air Resources Board – Associate Air Resources Engineer – Industrial Projects Section (1984 to 1992)

Oversight reviewing of District and EPA approved industrial projects to ensure that the issued permits conform with all applicable rules and

regulations, offsets have been properly provided, and that appropriate control equipment have been addressed.
Plan and organize studies to evaluate the effectiveness of local District's New Source Review Programs.
Plan, design, organize and conduct highly technical research studies on feasibility of new control technology.
Coordinate the engineering review of large power plants from the District, ARB, EPA and California Energy Commission staff.
Lead the development of control strategies, suggested control measures, and state regulations to reduce the emissions from industrial processes and consumer products.
Conduct workshops and consultation meetings to solicit information needed for the development of suggested control measures and regulations.
Conduct seminars and teach EPA training courses on air pollution control technologies.

Kern County Air Pollution Control District – Air Sanitation Engineer II – Permit Section (1982 to 1984).

Evaluate application for completeness determination, process application for Authority to Construct and Permit to Operate for industrial processes. Make recommendations for approval or denial of application for permits. Meet with industry representatives to discuss application completeness, suggest alternatives or modifications for them to apply to gain project's approval. Conduct control technology feasibility studies. Conduct site visits, and compliance inspections. Handle public nuisance complaints, and witness source testing as necessary.

DECLARATION OF
Joanna Reinhardt

I, **Joanna Reinhardt** declare as follows:

1. I am presently employed by the California Energy Commission in the Environmental Office of the Energy Facilities Siting and Environmental Protection Division as a Planner 1.

2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.

3. I helped prepare the staff testimony on Biological Resources Section, for the Niland Gas Turbine Plant Small Power Plant Exemption based on my independent analysis of the Small Power Plant Exemption and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.

4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.

5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: August 16, 2006 Signed: Joanna Reinhardt

At: Sacramento, California

JOANNA REINHARDT
Planner 1

EDUCATION

B.S. Degree in Aquatic Biology, University of California, Santa Barbara. CA June 1997.

M.S. Degree in Marine Science, Moss Landing Marine Laboratories, Moss Landing, CA December 2003.

EXPERIENCE

Planner 1, California Energy Commission, July 2005- Present. Currently assigned to the Facilities Siting Division, Biological Resources Unit, participating in the certification of thermal power plants. Through the review of project data, workshops and data requests, assess the potential impacts to biological resources associated with proposed projects and prepare written testimony. Specific expertise involves power plants that utilize once through cooling. Other duties include providing technical expertise to other agencies including Ocean Protection Council and State Water Board as they relate to marine resources.

Graduate Researcher, San Jose State University / Pacific States Marine Fisheries Commission, June 2000 to October 2003. This project attempted to help fill gaps in knowledge critical to understanding the population dynamics of California's nearshore marine fishes. Specifically my research examined age, growth, and maturity of cabezon, *Scorpaenichthys marmoratus*, in California. This involved design and implementation of a sampling protocol and collaboration with multiple agencies to obtain samples. Results from this research were used in the 2003 and 2005 cabezon stock assessments.

Biological Science Technician, National Marine Fisheries Service, Santa Cruz, CA, June 2001 to August 2002. This position involved examining life history characteristics of nearshore groundfishes in central California. Duties included collection and identification of fishes aboard a fishing vessel, collection of pertinent life history data, and database management. Other duties included age estimates of widow rockfish (Sebastes entomelas) for west coast stock assessments and age estimates of olive rockfish (Sebastes serranoides).

Research Scientist 1, TENERA , San Luis Obispo, CA. March 1998 to June 2001. This position included participation in a 316(b) project, which examined the impacts of the Diablo Canyon Nuclear Power Plant's cooling water system on ichthyo- and zooplankton. I participated in collection of nearshore and entrainment ichthyo- and zooplankton samples using paired bongo nets, sample preservation, and sorting of samples for fishes, crab (Cancer spp), and urchin larvae. I also participated in collecting relevant sea data using a CTD (Seabird). I also was in charge of research and collection of pertinent literature for this project. Other scientific technique accomplishments included measuring larval fishes (using Optimas 6.0), intertidal surveys to examine the changes in local marine fauna, scientific diving, data management and quality control. I also participated in similar data collection at the Moss Landing Power Plant (Moss Landing, CA) and Morro Bay Power Plant (Morro Bay, CA).

DECLARATION OF
Donna Stone

I, **Donna Stone** declare as follows:

1. I am presently employed by the California Energy Commission in the Compliance Office of the Energy Facilities Siting Division as a **Compliance Project Manager.**

2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.

3. I helped prepare the staff testimony on **General Conditions** for the **Niland Gas Turbine Plant** project based on my independent analysis of the Small Power Plant Exemption and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.

4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.

5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 8/23/2006 Signed: Donna Stone

At: Sacramento, California

DONNA STONE

Planner II

EXPERIENCE SUMMARY

Donna Stone has twenty years of experience in electric power regulation and planning. She has worked in the Compliance Office of the California Energy Commission's Energy Facilities Siting & Environmental Protection division since January 2001, overseeing construction and operation activities of energy facilities. Prior to that Donna worked in the Commission's Electricity Analysis Office providing lead analysis and planning activities for both Los Angeles Department of Water and Powers' Planning Area and Southern California Edison's Planning territory, including modeling support. Prior to working in the Electricity Analysis Office of the Commission, Donna worked for the California Department of Water Resources' Energy Division for six years performing a variety of analytical and research-oriented assignments related to the Department's Electric Planning System and hydroelectric project development..

EXPERIENCE

January 2001 To Present — California Energy Commission, Energy Facilities Siting and Environmental Protection Division

Compliance Project Manager – Provides oversight of energy facility construction and operation activities to ensure compliance with conditions of certification. Functions as a team leader for all compliance monitoring activities, processing of post-certification amendments, complaints, and facility closures.

May 1992 - January 2001 — California Energy Commission, Energy Information and Analysis Division

Planner and Electricity Specialist – Performed a variety of research-oriented assignments. Wrote regulations, database coordination. Prepared written and oral testimony. Lead electricity planner for Southern California Edison and Los Angeles Department of Water and Power Planning Areas. Main responsibilities included following pertinent industry and utility issues, forecasting, energy pricing, shortage contingency planning, cost-benefit analysis, generation system modeling and analysis. Team Leader on data adequacy review, utility supply option characteristics, long-term avoided DSM cost work, 25% rate reduction and unbundled rate work for Edison.. Authored portions of various reports.

September 1986 - May 1992 — California Department of Water Resources, Energy Division

Energy Resource Specialist – Performed a variety of analytical and research oriented assignments related to the Department's Electric Planning System and hydroelectric project development. Interpreted regulations and prepared documents necessary for permit and license approvals of hydroelectric facilities. Analyzed impacts to the Department of regulatory changes in licensing, relicensing, and hydroelectric development. Monitored electrical utility industry regulatory and planning activities of various regulatory agencies. Assisted in conducting technical and economic studies related to development of the State Water Project facilities. Prepared regional resource evaluations and assisted in the preparation of the Department's Resource Plan. Prepared written and oral testimony.

DECLARATION OF
Dorothy Torres

I, Dorothy Torres declare as follows:

I am presently employed by the California Energy Commission in the Environmental Office of the Facilities Siting Division as a Planner II.

A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.

I prepared the draft initial study on Cultural Resources for the Niland Energy Center Expansion based on my independent analysis of the application for a Small Power Plant Exemption and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.

It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.

I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 8/15/06 Signed: Dorothy Torres

At: Sacramento, California

Dorothy E. Torres

EXPERIENCE:

September 2002-
Present

Planner II: Biology and Cultural Unit,
Systems Assessment and Facilities Division, California Energy Commission. Duties: As a Planner II, I Identify, describe, and analyze complex cultural resources issues related to electrical energy production facilities, alternative energy technologies, energy research and development and Commission programs. This includes the preparation of sections of initial studies, environmental impact reports and Commission reports.

In addition, I prepare independent assessments of the cultural resources aspects of Notices of Intention, Applications for Certification, and Small Power Plant Exemptions. The final analyses include the preparation and presentation of expert technical testimony, which is presented at Commission hearings.

I also coordinate and work with federal, state, regional and local governments; cultural resources related agencies; environmental organization and universities; Native American or other ethnic groups; archaeological or historical professional organizations; and members of the general public regarding energy-related issues to assure their input into the Commission power plant siting process and other Commission programs.

Moreover, I lead or participate in workshops and meetings concerning Commission projects, programs and policies, amongst and between project applicants, staff, other governmental agencies, private organizations, and the public.

In addition, I examine and evaluate existing and proposed laws, ordinances, regulations, standards, and policies pertinent to the visual, cultural aspects of proposed energy facilities on Commission programs. After permitting, I evaluate the licensee's compliance with conditions of certification for power plant facilities.

April 2001-
August 2002

Planner I: Cultural, Socioeconomic and Visual Unit,

Systems Assessment and Facilities Division, California Energy Commission. Duties: I gather, organize and analyze cultural resources data and identify issues, impacts and mitigation measures ensuring compliance with the California Environmental Quality Act. I provide oversight for consultants working on siting applications in the area of cultural resources. I participate in workshops and meetings concerning Energy Commission projects and programs. In addition, I Interact with Division technical staff and staff representing other Divisions, local and regional government staff/decision makers, federal and state agency representatives and consultants/experts in the areas of anthropology, archaeology, history and related fields. I prepare written assessments of energy related documents.

December 1998-
March 2001

Energy Analyst: Community and Cultural Resources Unit, Energy Facilities Siting and Environmental Protection Division, California Energy Commission. Duties: I assist in gathering, organizing and analyzing cultural resources data and identify issues, impacts and mitigation measures. I assist in coordinating with local governments, resource protection agencies, environmental organizations and business organizations. Furthermore, I participate in workshops and meetings concerning Energy Commission projects and programs. I evaluate existing and proposed laws, ordinances, regulations, standards, and policies pertinent to the cultural resource aspect of proposed energy facilities. I prepare written assessments of energy related documents.

EDUCATION:

Spring 1988 — M.A., Anthropology
California State University, Sacramento

Spring 1980 — B.A., Anthropology and History
California State University, Sacramento

Professional Organizations — Society for California Archaeology
Sacramento Archaeological Society

DECLARATION OF
Shahab Khoshmashrab

I, Shahab Khoshmashrab, declare as follows:

1. I am presently employed by the California Energy Commission in the **Engineering Office** of the Energy Facilities Siting Division as a **Mechanical Engineer**.

2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.

3. I prepared the staff testimony on **Energy Resources** for the **Niland Gas Turbine Plant Project** based on my independent analysis of the Application, supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.

4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.

5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: August 23, 2006 Signed: Shahab Khoshmashrab

At: Sacramento, California

Shahab Khoshmashrab
Mechanical Engineer

Experience Summary

Nine years experience in the Mechanical, Civil, Structural, and Manufacturing Engineering fields involving engineering and manufacturing of various mechanical components and building structures. This experience includes QA/QC, construction/licensing of electric generating power plants, analysis of noise pollution, and engineering and policy analysis of thermal power plant regulatory issues.

Education

- California State University, Sacramento-- Bachelor of Science, Mechanical Engineering
- Registered Professional Engineer (Mechanical), California

Professional Experience

2001-2004--Mechanical Engineer, Systems Assessment and Facilities Siting– California Energy Commission

Performed analysis of generating capacity, reliability, efficiency, noise and vibration, and the mechanical, civil/structural and geotechnical engineering aspects of power plant siting cases.

1998-2001--Structural Engineer – Rankin & Rankin

Engineered concrete foundations, structural steel and sheet metal of various building structures including energy related structures such as fuel islands. Performed energy analysis/calculations of such structures and produced structural engineering detail drawings.

1995-1998--Manufacturing Engineer – Carpenter Advanced Technologies

Managed manufacturing projects of various mechanical components used in high tech medical and engineering equipment. Directed fabrication and inspection of first articles. Wrote and implemented QA/QC procedures and occupational safety procedures. Conducted developmental research of the most advanced manufacturing machines and processes including writing of formal reports. Developed project cost analysis. Developed/improved manufacturing processes.

DECLARATION OF
PATRICK A. PILLING, Ph.D., P.E., G.E.

I, Patrick A. Pilling, declare as follows:

1. I am presently employed by Black Eagle Consulting, Inc. under contract with the California Energy Commission Facilities Siting and Environmental Protection Division as a Geotechnical Engineer.

2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.

3. I prepared the staff testimony on **GEOLOGY AND PALEONTOLOGY**, for the Niland Gas Turbine Plant project based on my independent analysis of the Small Power Plant Exemption and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.

4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.

5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: July 17, 2006 Signed: _____

At: Reno, Nevada

PATRICK A. PILLING, Ph.D., P.E., G.E.
Executive Vice President
Principal Geotechnical Engineer

Education

$ B.S. B Civil Engineering B1986 B Santa Clara University
$ M.S. B Civil Engineering B 1991 B San Jose State University
$ Ph.D. B Civil Engineering B 1997 B University of Nevada, Reno

Registrations

- P.E. - Civil - Nevada – No. 9153
- P.E. - Civil – California – No. C 49578
- P.E. - Geotechnical – California – No. GE 2292
- P.E. - Civil - Oregon – No. 19675PE
- P.E. – Geotechnical – Oregon – No. 19675PE
- P.E. - Civil – Arizona – No. 35310
- P.E. - Civil – Utah – No. 971338-2202

Associated Experience

- University of Nevada, Reno - Course Instructor - CE 771 - Mining Waste Containment Design
- University of Nevada, Reno - Course Instructor - CE 771 - Practical Foundation Engineering

Experience

1997 to Present: Black Eagle Consulting, Inc.; Executive Vice President. Dr. Pilling maintains over 18 years of construction, geotechnical, transportation, and mining engineering experience, and has supervised the engineering and construction of such projects throughout the western United States and South America. As Executive Vice President, Dr. Pilling oversees daily office operations, including personnel and accounting issues, coordinates company marketing efforts, and performs project management, engineering and laboratory analyses, and report preparation on most projects. Dr. Pilling presently serves as our project manager of the Reno Retrack construction management team reviewing geotechnical design submittals for this rail project.

1996 to 1997: SEA, Incorporated; Senior Geotechnical Engineer. Dr. Pilling provided project coordination, management, supervision, and development, and performed field exploration, engineering analyses, and report preparation.

1990 to 1996: WESTEC; Project Manager. Mr. Pilling was responsible for general geotechnical analyses on most projects, as well as design, management, and permitting of heap leach and tailings storage facilities projects. His experience varied from foundation design recommendations for small pump house structures to detailed liquefaction and seepage/slope stability analyses for large earthen embankments.

1986 to 1990: Case Pacific Company; Project Manager. Mr. Pilling provided cost estimating, project management, and contract negotiation on a wide variety of projects. Responsibilities included design and construction of drilled shafts, earth retention, and underpinning systems, in addition to construction scheduling and cost control.

Affiliations

- American Public Works Association
- American Concrete Institute: Concrete Field Testing Technician Grade I
- National Society of Professional Engineers
- Secretary/Treasurer - National Society of Professional Engineers, Northern Nevada Chapter
- American Society of Civil Engineers
- International Association of Foundation Drilling
- National Council of Examiners for Engineering and Surveying
- American Society of Engineering Education
- Deep Foundations Institute

Publications

Ashour, M., P. A. Pilling, G. M. Norris, and H. Perez, June 1996, ADevelopment of a Strain Wedge Model Program for Pile Group Interference and Pile Cap Contribution Effects,@ Report No. CCEER-94-4, University of Nevada, Reno; Federal Study No. F94TL16C, Submitted to State of California Department of Transportation (CalTrans).

Ashour, M., P. A. Pilling, and G. M. Norris, March 1997, ADocumentation of the Strain Wedge Model Program for Analyzing Laterally Loaded Isolated Piles and Pile Groups,@ Proceedings, 32nd Symposium on Engineering Geology and Geotechnical Engineering, Boise, Idaho, pp. 344-359.

Ashour, M., P. Pilling, and G. Norris, 1998, "Updated Documentation of the Strain Wedge Model Program for Analyzing Laterally Loaded Piles and Pile Groups," Proceedings, 33rd Engineering Geology and Geotechnical Engineering Symposium, University of Nevada, Reno, pp. 177-178.

Ashour, M., G. Norris, and P. Pilling, April 1998, ALateral Loading of a Pile in Layered Soil Using the Strain Wedge Model,@ Journal of Geotechnical and Geoenvironmental Engineering, ASCE, Vol. 124, No. 4, pp. 303-315.

Ashour, M., G. M. Norris, S. Bowman, H. Beeston, P. Pilling, and A. Shamsabadi, March 2001, "Modeling Pile Lateral Response in Weathered Rock," Proceeding 36th Engineering Geology and Geotechnical Engineering Symposium, University of Nevada, Las Vegas, 2001.

Ashour, M., G. Norris, and P. Pilling, July/August 2002, "Strain Wedge Model Capability of Analyzing the Behavior of Laterally Loaded Isolated Piles, Drilled Shafts, and Pile Groups," Journal of Bridge Engineering, ASCE, Vol. 7, No 4, pp. 245-354.

Ashour, M., P. Pilling, and G. M. Norris, March 26 – 31, 2001, "Assessment of Pile Group Response Under Lateral Load," Proceedings, 4th International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics, University of Missouri – Rolla, MO, Paper 6.11.

Norris, G. M., M. Ashour, P. A. Pilling, and P. Gowda, March 1995, AThe Non-Uniqueness of p-y Curves for Laterally Loaded Pile Analysis,@ Proceedings, 31st Symposium on Engineering Geology and Geotechnical Engineering, Logan, Utah, pp. 40-53.

Norris, G. M., P. K. Gowda, and P. A. Pilling, February 1993, AStrain Wedge Model Formulation for Piles,@ Report No. CIS 91-11, University of Nevada, Reno.

Pilling, P. A., 1997, AThe Response of a Group of Flexible Piles and the Associated Pile Cap to Lateral Loading as Characterized by the Strain Wedge Model,@ Doctoral Dissertation, University of Nevada, Reno.

Pilling, P. A. and P. V. Woodward, March 1995, ADependent Facility Closure in California,@ Proceedings, Mine Closure: Creating Productive Public and Private Assets, Sparks, Nevada, pp. 315-326.

Pilling, P.A. and H. E. Beeston, March 1998, AExpansion Testing of Clay Soils in Forensic Investigations,@ Proceedings, 33rd Symposium on Engineering Geology and Geotechnical Engineering, Reno, Nevada, pp. 119-127.

Pilling, P.A., M. Ashour, and G.M. Norris, 2001, "Strain Wedge Model Hybrid Analysis of a Laterally Loaded Pile Group," Journal of the Transportation Research Board, Transportation Research Record No. 1772, Paper No. 01-0174, pp. 115-121.

Pilling, P.A., July 2002, "Assessing the Liquefaction Potential of Sand Deposits Containing an Appreciable Amount of Gravel," Program with Abstracts 2002 Annual Meeting Association of Engineering Geologists and American Institute of Professional Geologists, Reno, Nevada, p35.

Awards

- Hugh B. Williams Industry Advancement Scholarship, International Association of Foundation Drilling (ADSC), 1993-94.

- National Society of Professional Engineers, Northern Nevada Chapter, Young Engineer of the Year, 1996.

DECLARATION OF
Geoffrey Lesh

I, Geoffrey Lesh declare as follows:

1. I am presently employed by the California Energy Commission in the **Engineering Office** of the Energy Facilities Siting and Environmental Protection Division as a **Mechanical Engineer.**

2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.

3. I helped prepare the staff testimony on **Hazardous Materials Management** Section for the **Niland Gas Turbine Plant** based on my independent analysis of the Application for Small Power Plant Exemption supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.

4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.

5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 8/25/06 Signed: Geoffrey Lesh

At: Sacramento, California

Geoffrey Lesh, P.E.
Mechanical Engineer

WORK HISTORY

California Energy Commission Mechanical Engineer 2002 - Current
• Review and analyze applicants' plans for safe management of hazardous materials, and for protecting worker safety.

Self-Employed Independent Investor 2000 - 2002
• Wrote market analysis computer software and traded personal account.

Read-Rite Corp Wafer Engineering Manager 1994 - 2000
• Designed and developed wafer manufacturing processes for computer data storage systems. Managed team of engineers and technicians responsible for developing wet and dry chemical processes for manufacturing, including process and safety documentation.
• Managed process and equipment selection for manufacturing processes.
• Processes included vacuum processed metals and ceramics, grinding-polishing, plating, etching, encapsulation, process troubleshooting, and SPC reporting.

Dastek Corp (Komag Joint Venture Start-up) Wafer Engineering Manager 1992 - 1994
• Developed wafer processes for new technology recording head for hard disk drives.
• Managed team of engineers and technicians.
• This position included start-up of wafer fab, including line layout, purchase, installation, and startup of new process equipment, etc.

Komag, Inc Alloy Development Manager 1989 - 1992
• Developed new vacuum-deposited recording alloys
• Responsible for planning and carrying-out tests, designing experiments, analyzing results, managing test lab conducting materials characterizations.
• Extensive process modeling and data analysis.

Verbatim Corp (Kodak) Process Development Manager 1983 - 1989
• Mechanical engineering for computer disk manufacturing, including product, process, and equipment including metal-ceramic-plastic processes for optical disk development.
• Production processes included plating, metal evaporation, reactive sputtering, laser-based photolithography, injection molding.
• Steering Committee Member, *Center for Magnetic Recording Research, UC San Diego*

IBM Corp Mechanical/Process Engineer 1977 - 1983
• Product development for photocopiers and computer tape-storage systems.

EDUCATION

Stanford University, Master of Science Degree	Materials Science and Engineering
UC-Berkeley, Bachelor of Science Degree (Double Major)	Mechanical Engineering, Materials Science and Engineering
University of Santa Clara, Graduate Certificate	Magnetic Recording Engineering
Registered Professional Engineer, California	Mechanical #M32576 Metallurgical #MT1940

DECLARATION OF
AMANDA STENNICK

I, **AMANDA STENNICK** declare as follows:

1. I am presently employed by the California Energy Commission in the Environmental Protection of the Energy Facilities Siting and Environmental Protection Division as a Planner II.

2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.

3. I helped prepare the staff testimony on **LAND USE** for the **NILAND GAS TURBINE PLANT** based on my independent analysis of the Small Power Plant Exemption and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.

4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.

5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: August 23, 2006 Signed: Amanda Stennick

At: Sacramento, California

AMANDA STENNICK

EDUCATION

B.A. 1986 University of California, Davis, Urban and Economic Geography

WORK EXPERIENCE

April 1998 present

Planner II. California Energy Commission, Energy Facilities Siting and Protection Division.

Provide technical analysis of proposed energy planning, conservation, and development programs on land use and socioeconomic resources. Specific tasks include the analysis of potential land use and socioeconomic impacts, identification of mitigation measures, presentation of oral and written testimony for hearings on siting cases, and project monitoring to ensure compliance with local, state and federal environmental laws and regulations. Recent work includes preparation of agenda and other materials for staff's environmental justice training seminar; research in the areas of demographics and poverty for environmental justice in siting cases; review of environmental justice legislation; research on energy and environmental justice issues specific to US/Mexico Border; as part of a team, authored the 2000 Quality Control Responsibilities for Division Products; authored the Environmental Justice sections for the 2001, 2003, and 2005 Environmental Performance Report; technical lead for land use section for 2005 Environmental Performance Report; CEQA review and comment on Cabrillo LNG Deepwater Port Facility NOI/NOP, City of Pittsburg Trans Bay Cable Project, and EIS/EIR for LNG facility in the Port of Long Beach.

Oct. 1993 to April 1998

Planner I. California Energy Commission, Energy Facilities Siting and Protection Division.

Provide technical analysis of proposed energy planning, conservation, and development programs on land use and socioeconomic resources. Specific tasks include the analysis of potential impacts, identification of mitigation measures, presentation of oral and written testimony for public hearings on siting cases, and project monitoring to ensure compliance with local, state and federal environmental laws and regulations. Other work includes participation in the environmental justice task force; preparation of environmental justice white paper presented to Commissioners; research and preparation of discussion on discount rates and net present value for the SFEC siting project; preparation of socioeconomic section on 1996 Quincy Library Group Report; preparation of forestry section on 1997 CEC Global Climate Change Report; demographic research for environmental justice issues in siting cases.

1992 to 1993

Project Manager/Environmental Analyst/Planner. Beak Consultants.

Environmental Planner for EIR/EA for the Mammoth County Water District. Analyzed potential impacts resulting from lake water transfers and maintenance of in-stream flows in the Mammoth Lakes Basin; prepared land use, socioeconomics, recreation, and public services and utilities sections of EIR/EA; provided team project management.

Environmental Planner for an Effluent Treatment Plant EIR for Simpson Paper Company in Humboldt County. Authored land use, socioeconomics, recreation, public services and utilities, cumulative impacts sections, and mitigation monitoring; provided team project management.

Environmental Planner for Folsom/SAFCA Reoperation. Work involved determining parameters of project description with respect to water modeling, project geographic boundaries, and agency jurisdictional boundaries; ensured compliance with federal, state, and local plans and policies; provided team project management.

1990 to 1992

Environmental Analyst/Project Manager. ECOS. Inc.

Project Manager/Planner. EIR for a Planned Development, General Plan Amendment, and rezone request for a 504-acre Business and Industrial Park expansion for the Port of Sacramento. Prepared work scope and budget for Public Improvements Plan and Specific Plan for an 80-acre Mixed Use/Water Related development, including a Mitigation Monitoring Plan and Statement of Overriding Considerations for the City of West Sacramento. Specific tasks included coordination with subcontractors on technical sections of EIR, meetings with Assistant Port Director and City staff to present Public Improvements Plan, Specific Plan, tentative parcel map, and critical project phasing; and discussion with CDFG and Port staff on regional approach to mitigation for project-impacted endangered species.

Project Manager/ Planner. EIR for the Wildhorse Residential/Recreational Planned Development for the City of Davis. Specific tasks included CEQA compliance, writing technical sections on land use, project alternatives, and cumulative impacts, and determining appropriate project alternatives based on traffic models and allowable housing densities.

Project Manager. Yolo County Powerline Ordinance. Project tasks included developing siting policies and mitigation measures for placement of powerlines and substations in Yolo County.

1989 to 1990 **Assistant Planner.** Sacramento County Planning Department.

Principal Author. Energy Component of the Public Services and Facilities Element of the Sacramento County General Plan. Coordinated work efforts with the CEC, SMUD, and PG&E to develop environmental and siting policies for energy facilities and transmission lines; identified environmental impacts and appropriate mitigation measures.

1987 to 1989 **Planner/Assistant Planner.** Yolo County Community Development

Planning liaison for Homestake Mining Company's McLaughlin Mine. Conducted meetings on the Technical Review Panel's environmental monitoring of HMC's McLaughlin Mine; prepared staff reports on the implementation of use permit phasing on water quality and impacts of the tailings pond on biologic resources; organized site visits to monitor the revegetation plan and other mitigation measures as specified in the use permit; presented oral and written staff reports to the Planning Commission.

1988 **Consultant.** Pan Pacific Energy Development Corporation.

Consulting job to develop a regional energy plan for rural areas of developing countries including decentralized non-fossil fuel power plants in agricultural regions. Attended IREC and AWEA International Conference in Honolulu.

PROFESSIONAL AND CONTINUING EDUCATION

1988	California Environmental Quality Act (UC Davis)
1989	Subdivision Map Act (UC Davis)
1991	Fiscal Impact Analysis (UC Davis)
1994	APA Conference (San Francisco)
1994	Environmental Justice Conference (UC Berkeley)
1998	California Environmental Quality Act (California Energy Commission)
1999	Roundtable on Environmental Justice US/Mexico Border
2000	Local Agency Formation Commission - LAFCO (UC Davis)
2005	Geographic Information System – GIS (UC Davis)
2006	Mapping Your Community GIS and Community Analysis (Sacramento, CA)

PROFESSIONAL AFFILIATIONS

Association of Environmental Professionals
American Planning Association

DECLARATION OF
Steve Baker

I, **Steve Baker,** declare as follows:

1. I am presently employed by the California Energy Commission in the **Engineering Office** of the Energy Facilities Siting Division as a **Senior Mechanical Engineer**.

2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.

3. I prepared the staff testimony on **Noise and Vibration** for the **Niland Gas Turbine Plant Project** based on my independent analysis of the Application, supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.

4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.

5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: August 23, 2006 Signed: _____

At: Sacramento, California

STEVE BAKER, P.E.
Senior Mechanical Engineer

Experience Summary

Thirty-two years experience in the electric power generation field, including mechanical design, QA/QC, construction/startup and business development/licensing of nuclear, coal-fired, hydroelectric, geothermal and windpower plants; and engineering and policy analysis of thermal power plant regulatory issues.

Education

- California State University, Long Beach--Master of Business Administration
- California State Polytechnic University, Pomona--Bachelor of Science, Mechanical Engineering
- Registered Professional Engineer (Mechanical), California —
  No. M27737 expires 6/30/06

Professional Experience

1990 to Present--Senior Mechanical Engineer, Facilities Siting Division - California Energy Commission

Technical lead person for the analysis of generating capacity, reliability, efficiency, noise, geology, paleontology and the mechanical, civil/structural and geotechnical engineering aspects of power plant siting cases. Key contributor to Commission's investigation into market impediments to the deployment of advanced high-efficiency generating technologies.

1987 to 1990--Generation Systems/Facility Design Unit Supervisor, Siting & Environmental Division - California Energy Commission

Responsible for supervising the analysis of generating capacity, reliability, efficiency, safety, and mechanical, civil/structural, and geotechnical engineering aspects of power plant siting cases.

1981-1986--Operations Manager, Alternate Energy - Santa Fe Pacific Realty Corporation

Participated in and supervised identification, evaluation and feasibility analysis, licensing and permitting of hydroelectric, geothermal, windpower and biomass power projects.

1974-1981--Mechanical Engineer, Quality Engineer - Bechtel Power Corporation and Bechtel National, Inc.

Wrote equipment specifications, drew flow diagrams and P&ID's, performed system design and safety analysis for nuclear power plants and nuclear fuel processing plant. Wrote and implemented QA/QC procedures for nuclear power plant. Participated in construction/startup of large coal-fired power plant.

DECLARATION OF
Alvin J. Greenberg, Ph.D.

I, **Alvin J. Greenberg, Ph.D.** declare as follows:

1. I am presently a consultant to the California Energy Commission, Energy Facilities Siting and Environmental Protection Division.

2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.

3. I helped prepare the staff testimony on the **Public Health** and **Waste Management** sections for the **Niland SPPE** based on my independent analysis of the request for a Small Power Plant Exemption and data responses hereto, data from reliable documents and sources, and my professional experience and knowledge.

4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.

5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: Aug. 22, 2006 Signed: _____

At: Sacramento, California

Risk Science Associates

121 Paul Dr., Suite A, San Rafael, Ca. 94903-2047
415-479-7560 fax 415-479-7563
e-mail agreenberg@risksci.com

Name & Title: **Alvin J. Greenberg, Ph.D., FAIC, REA, QEP**
Principal Toxicologist

Dr. Greenberg has had over two decades of complete technical and administrative responsibility as a team leader for hazardous waste site characterization, preparation of human and ecological risk assessments, air quality assessments, interaction with regulatory agencies in obtaining permits, hazardous materials handling and risk management prevention, infrastructure vulnerability assessments, conducting lead surveys and studies, with particular expertise in the assessment of dioxins, lead, diesel exhaust, petroleum hydrocarbons, mercury, and the intrusion of subsurface contaminants into indoor air. Dr. Greenberg's expertise in risk assessment has led to his appointment as a member of several state and federal advisory committees, including the California EPA Advisory Committee on Stochastic Risk Assessment Methods, the US EPA Workgroup on Cumulative Risk Assessment, the Cal/EPA Peer Review Committee of the Health Risks of Using Ethanol in Reformulated Gasoline, the California Air Resources Board Advisory Committee on Diesel Emissions, the Cal/EPA Department of Toxic Substances Control Program Review Committee, and the DTSC Integrated Site Mitigation Committee. Dr. Greenberg is the former Chair of the Bay Area Air Quality Management District Hearing Board, a former member of the State of California Occupational Health and Safety Standards Board (appointed by the Governor), and former Assistant Deputy Chief for Health, California OSHA. And, since the events of 9/11, Dr. Greenberg has been the lead person for developing vulnerability assessments, power plant security programs, and conducting safety and security audits of power plants for the California Energy Commission. In addition to providing security expertise to the State of California, Dr. Greenberg is Team Leader and main consultant to the State of Hawaii on the updating of their Energy Emergency Preparedness Plan.

Years Experience: 25

Education:

B.S. 1969 Chemistry, University of Illinois Urbana

Ph.D. 1976 Pharmaceutical/Medicinal Chemistry, University of California, San Francisco

Postdoctoral Fellowship 1976-1979 Pharmacology/Toxicology, University of California, San Francisco

Postgraduate Training 1980 Inhalation Toxicology, Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM

Professional Registrations:

Board Certified as a Qualified Environmental Professional (QEP)
California Registered Environmental Assessor - I (REA)
Fellow of the American Institute of Chemists (FAIC)

Professional Affiliations:

Society for Risk Analysis
Air and Waste Management Association
American Chemical Society
American Association for the Advancement of Science
National Fire Protection Association

Technical Boards and Committee Memberships - Present:

Squaw Valley Technical Review Committee
(appointed 1986)

Technical Boards and Committee Memberships - Past:

July 1996 – March 2002
Member, Bay Area Air Quality Management District Hearing Board
(Chairman 1999-2002)

September 2000 – February 2001
Member, State Water Resources Control Board Noncompliant Underground Tanks Advisory Group

January 1999 – June 2001
Member, California Air Resources Board Advisory Committee on Diesel Emissions

January 1994 - September 1999
Vice-Chairman, State Water Resources Control Board Bay Protection and Toxic Cleanup Program Advisory Committee

September 1998
Member, US EPA Workgroup on Cumulative Risk Assessment

April 1997 - September 1997
Member, Cal/EPA Private Site Manager Advisory Committee

January 1986 - July 1996
Member, Bay Area Air Quality Management District Advisory Council
(Chairman 1995-96)

January 1988 - June 1995
Member: California Department of Toxic Substance Control Site Mitigation Program Advisory Group

January 1989 - February 1995
Member: Department of Toxics Substances Control Review Committee, Cal-EPA

October 1991 - February 1992
Chair: Pollution Prevention and Waste Management Planning Task Force of the Department of Toxics Substances Control Review Committee, Cal-EPA

September 1990 - February 1991
Member: California Integrated Waste Management Board Sludge Advisory Committee

September 1987 - September 1988
ABAG Advisory Committee on Regional Hazardous Waste Management Plan

March 1987 - September 1987
California Department of Health Services Advisory Committee on County and Regional Hazardous Waste Management Plans

January 1984 - October 1987
Member, San Francisco Hazardous Materials Advisory Committee

March 1984 - March 1987
Member, Lawrence Hall of Science Toxic Substances and Hazardous Materials Education Project Advisory Board

Jan. 1, 1986 - June 1, 1986
Member, Solid Waste Advisory Committee, Governor's Task Force on Hazardous Waste

Jan. 1, 1983 - June 30, 1985
Member, Contra Costa County Hazardous Waste Task Force

Sept. 1, 1982 - Feb. 1, 1983
Member, Scientific Panel to Address Public Health Concerns of Delta Water Supplies, California Department of Water Resources

Present Position

January 1983- present
Owner and principal with Risk Sciences Associates, a Marin County, California, environmental consulting company specializing in multi-media human health and ecological risk assessment, air pathway analyses, hazardous materials management-infrastructure security, environmental site assessments, and litigation support for toxic substance exposure cases.

Previous Positions

Jan. 2, 1983 - June 12, 1984
Member, State of California Occupational Safety and Health Standards Board (Cal/OSHA), appointed by the Governor

Aug. 1, 1979 - Jan. 2, 1983
Assistant Deputy Chief for Health, California Occupational Safety and Health Administration

Feb. 1, 1979 - Aug. 1, 1979
Administrative Assistant to Chairperson of Finance Committee, Board of Supervisors, San Francisco

Jan. 1, 1976 - Feb. 1, 1979
Research Pharmacologist and Postdoctoral Fellow, Department of Pharmacology and Toxicology, School of Medicine, University of California, San Francisco

Jan. 1, 1975 - Dec. 31, 1975
Acting Assistant Professor, Department of Pharmaceutical Chemistry, University of California, San Francisco

Experience

General

Dr. Greenberg has been a consultant in Human and Ecological Risk Assessment, Occupational Health, Toxicology, Hazardous Materials Management and Security, Hazardous Waste Site Characterization and Toxic Substances Control Policy for over 25 years. He has broad experience in the identification, evaluation and control of health and environmental hazards due to exposure to toxic substances. His experience includes Community Relations Support and Risk Communication through experience at high-profile sites and presentations at professional society meetings.

He has considerable experience in the review and evaluation of exposure via the air pathway - particularly to emissions from power plants and diesel exhaust - and a thorough knowledge of the regulatory requirements through his experience at Cal/OSHA, the BAAQMD Hearing Board, as a consultant to the California Energy Commission, and in preparing such assessments for local government and industry. He has assessed exposures to diesel exhaust during construction and operations of stationary and mobile sources and has testified at evidentiary hearings numerous times on this subject.

He served for over five years as the Vice-chair of the California State Water Resources Control Board Advisory Committee convened to address toxic substances in sediments in bays, rivers, and estuaries. He has also conducted numerous ecological risk assessments and characterizations, including those for marine and terrestrial habitats.

Since the events of 9/11, Dr. Greenberg has taken the lead for the California Energy Commission in developing a power plant vulnerability assessment methodology and model power plant security plan. He also assisted the CEC in the preparation of a "background" report on the risks and hazards of siting LNG terminals in California and consulted for the City of Vallejo on a proposed LNG terminal and storage facility at the former Mare Island Naval Shipyard. In August 2004, a team of experts led by Dr. Greenberg was awarded an 18-month contract by the State of Hawaii to update and improve the state's Energy Emergency Preparedness Plan and make recommendations for increased security of critical energy infrastructure on this isolated group of islands.

Dr. Greenberg has extensive experience in data collection and preparation of human and ecological risk assessments on numerous military bases and industrial sites with Cal/EPA DTSC and RWQCB oversight. He has also been retained to provide technical services to the Cal/EPA Department of Toxic Substances Control (preparation of human health risk assessments) and the

Office of Environmental Health Hazard Assessment (review and evaluation of air toxics health risk assessments and preparation of profiles describing the acute and chronic toxicity of toxic air contaminants). He has also conducted several surveys of sites containing significant lead contamination from various sources including lead-based paint, evaluated potential occupational exposure to lead dust and fumes in industrial settings, prepared numerous human health risk assessments of lead exposure, and prepared safety and health plans for remedial investigation of lead oxide contaminated soil at DOD facilities.

Dr. Greenberg is also a recognized expert on the requirements of California's Proposition 65 and has served as an expert on Prop. 65 litigation.

DECLARATION OF

Joseph Diamond, Ph. D.

I, Joseph Diamond, Ph. D. declare as follows:

I am presently employed by the California Energy Commission as a Planner II-Economist.

A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.

I helped prepare the Socioeconomics Final Initial Study (FIS) testimony on 6/12/2006 for the Niland Gas Turbine Plant Small Power Plant Exception (SPPE) based on my independent analysis of the SPPE and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.

It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.

I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 6/12/2006 Signed: Joseph Diamond Ph. D.

At: Sacramento, California

Joseph Diamond Ph. D.
Work: (916) 654-3877

Ph.D. with experience in economic policy.

BUSINESS AFFILIATION

California Energy Commission
1516 9th St. MS-40
Sacramento, CA 95814

EDUCATION

Michigan State University	Ph.D.	Resource Development
University of Rhode Island	M.A.	Economics
University of New Hampshire	B.A.	Economics

DECLARATION OF
Michael L. Stephens, Engineering Geologist

I, Michael L. Stephens

1. I am presently employed at the California Energy Commission, in the Siting Office of the Energy Facilities Siting and Compliance Unit as a Project Manager.

2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.

3. I prepare the staff testimony on the Executive Summary for the Niland Gas Turbine Plant project, on my independent analysis of the Small Power Plant Exemption application, supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.

4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.

5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify thereto.

   I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 8/29/06 Signed: Michael L. Stephens

At: Sacramento, California

MICHAEL STEPHENS, PG, CEG, C.HG, REA II

SUMMARY

18 years in management and technical areas related to environmental management, water resource planning and assessment, groundwater and surface water quality investigations, and regulatory compliance.

EMPLOYMENT

10/05-present *Planner II (California Energy Commission, Sacramento, CA)*
Provided technical analyses on potential impacts to surface and groundwater resources related to the construction, operation, and maintenance of energy facilities in California.

6/03-9/05 *Senior Geologist (SECOR, Sacramento, CA)*
Reviewed timesheets, handled personnel issues, conducted performance evaluations. Conducted senior review on project reports prepared by staff. Performed water quality assessments including drinking water source water assessments, water quality degradation studies for projects that included logging, erosion, storm-water, petroleum spills, and lumber milling. Prepared stream restoration plans. Conducted TMDL analyses. Prepared erosion control and stormwater BMPs.

6/01-6/03 *Project Manager (DTSC, Sacramento, CA)*
Served as project manager for environmental compliance related to new school construction in California. Also managed and oversaw projects for technical quality.

8/90-6/01 *Water Resource Manager (Tetra Tech, Sacramento, CA)*
Provided management and technical support for various water resource related projects ranging from environmental assessments to rehabilitation of impaired natural resources. Conducted hydrogeologic studies.

7/88-8/90 *Engineering Geologist (American Environmental, Sacramento, CA)*
Conducted environmental investigation and remediation at hazardous waste sites. Project manager for large scale Caltrans storm-water conveyance restoration project.

EDUCATION

1988 Bachelor of Geology, Sacramento State University, California

PROFESSIONAL AFFLIATIONS

Certified Hydrogeologist, 583, California, 1998
Certified Engineering Geologist, 2112, California, 1998
Registered Geologist, 6588, California, 1996
Registered Environmental Assessor 1, 05104, California, 1993
Registered Environmental Assessor 11, 2007, California, 2001

DECLARATION OF
Linda D. Bond

I, **Linda D. Bond**:

1. I am presently employed by the California Energy Commission in the **Environmental Office** of the Energy Facilities Siting Division as a **Hydrogeologic Consultant through Aspen Environmental Group**.

2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.

3. I helped prepare the staff testimony on **Soil and Water Resources**, for the **Niland Gas Turbine Plant** based on my independent analysis of the Small Power Plant Exemption and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.

4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.

5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: August 15, 2006 Signed: _____

At: Sacramento, California

LDBond & Associates

Linda D. Bond, P.G.
Consulting Hydrogeologist

SUMMARY

Twenty five years experience developing science-based solutions for decision makers. Expertise in regional water-resource analyses, CEQA impacts assessments, litigation support and groundwater-basin management. Broad-based knowledge of California hydrogeology and the effects of overdraft, drought, conjunctive use, water transfers, groundwater-stream interactions, agricultural-water use, urban growth and large water-use projects. Expertise in computer modeling and co-author of FEMFLOW3D, a finite-element groundwater modeling program, published by the U.S. Geological Survey.

EDUCATION

- Master of Science, Applied Hydrogeology, 1986, Stanford University, Palo Alto, CA
- Bachelor of Arts in Geology, 1983, San Francisco State University, San Francisco, CA (Summa Cum Laude and Hood Recipient for the School of Science)

REGISTRATION, CERTIFICATIONS AND ASSOCIATIONS

- Professional Geologist, California (P.G. No. 4656)
- California State Small Business Certification (No. 37566)
- State Women Business Enterprise (SWBE and DBE) Certification (No. 34553)
- Environmental Consulting Services (NAICS Code 541620) firm listing in the California Unified Certification Program (CUCP)
- Groundwater Resources Association (GRA)
- Association of Ground-Water Scientists & Engineers (AGWSE)
- American Geophysical Union (AGU)

CAREER SUMMARY

- LDBond & Associates, Davis, CA: Consulting Hydrogeologist, 1998 to present
- Hydrologic Consultants, Inc. (HCI), Sacramento, CA: Principal Hydrogeologist, 1989 to 1998
- MWH (formerly James M. Montgomery Consulting Engineers, Inc.) Walnut Creek, CA: Hydrogeologist, 1986 to 1989
- U.S. Geological Survey, Water Resources Division, Menlo Park, CA. Hydrologist (GS-7), 1983 to 1986
- Sohio Petroleum, Alaska Exploration Division, San Francisco, CA: Exploration Geologist, 1981 to 1983

2751 Brentwood Place, Davis CA 95616-4877
Phone: (530) 757-1500 Fax: (530) 757-1577 Email: ldbond@davis.com

PROJECTS (LDBond & Associates)

California Energy Commission, Soil and Water Resources Division: Water Resource Specialist and Expert Witness since 1998

LDBond & Associates (LDBond) has served as the primary hydrogeologic consultant to the Systems Assessment and Facilities Siting Division of California Energy Commission (CEC) for over 7 years. LDBond has developed CEQA-equivalent water-use impact assessments and mitigation solutions for a wide range of hydrologic conditions and issues for the CEC. In addition to written testimony, LDB has provided expert witness testimony in regulatory licensing proceedings and post-licensing evaluations of construction compliance. All of the power projects evaluated by LDBond are large, gas-fire, water-cooled plants that depend on groundwater for all or part of their operational requirements. Power plant water requirements often have significant impacts because, on an acre-foot per acre basis, the water use for water-cooled plants exceeds agricultural and domestic requirements by an order of magnitude.

CEC Certification Assessments:

- High Desert Power Project, Victorville, CA
- Three Mountain Power Plant Project, Burney, CA
- Blythe Energy Project Phase I and II, Blythe, CA
- Mountainview Power Plant, San Bernardino County, CA
- Rio Linda/Elverta Power Project, Rio Linda, CA
- Pico Power Project, Santa Clara, CA
- Pastoria Energy Facility Expansion, Lebec, CA

CEC Compliance Assessments:

- High Desert Power Project, Victorville, CA
- Blythe Energy Project Phase I, Blythe, CA
- Three Mountain Power Plant Project, Burney, CA
- Sunrise II Power Plant, Kern County, CA
- Walnut Energy Center, Turlock, CA
- Pastoria Energy Facility, Lebec, CA

HydroFocus, Inc: Hydrogeologic Consultant

LDBond has provided HydroFocus on-call hydrogeologic and geologic consulting services since 2001. Work has included QA/QC reviews, groundwater modeling, and well installation and testing supervision. Most recently, LDBond assisted HydroFocus, Inc. in the review of a regional groundwater resource model of Nevada for the Southern Nevada Water Authority. Work included the development of new regional structure maps to delineate the faulted carbonate aquifer system of southern Nevada. Work also included the testing and review of computer programs designed to

construct the model.

Wolfe & Associates: Litigation Support

LDBond provided expert analysis of water supply impacts for the CEQA administrative hearing on the Boronda Crossing Draft Subsequent Environmental Impact Report. The Boronda project, to be located in Salinas, CA., proposed to pump groundwater in the vicinity of the saltwater intrusion front that threatens to degrade the Salinas Valley groundwater supply. In response to comments on the project EIR, the application for the project was withdrawn and a different location has been proposed for the project.

U.S. Bureau of Reclamation (USBR): Litigation Support

LDBond provided litigation support to the USBR in recovering repair costs for construction defects in the water supply siphons of the Central Arizona Project. LDBond identified fundamental flaws in the technical analysis, a finite element model of the siphon deterioration process that was developed by defendant's technical expert. In response to the information developed by LDBond, the defendant subsequently withdrew their technical analysis from evidence.

Butte Basin Water Users Association and Butte County: Hydrogeologic Consultant

LDBond developed a comprehensive evaluation of the regional groundwater resources of Butte Basin (Sacramento Valley, California). (Initial work was performed by Linda D. Bond at HCI.) LDBond constructed of a three-dimensional groundwater model of the region that includes a synthesis of 26 years of hydrologic and geologic data, a characterization of water use and crop consumption, and a detailed representation of agricultural and urban water service districts. LDBond has used the model to quantify the hydrologic impacts of

- 1994 drought water bank transfers on Butte County,
- potential impacts of future drought cycles,
- conjunctive use alternatives,
- potential contract-specified surface-water allocation cutbacks for the Feather River Water Districts,
- regional groundwater-use impacts on Sacramento and Feather River flows,
- water and land-use conversion, and
- urban growth impacts.

Additional projects included quantification of the regional groundwater storage potential of the proposed Feather River Watershed Restoration Project and development of the technical basis for the 1994 Butte County Well Spacing Ordinance.

OTHER PROJECTS (Linda D. Bond)

U.S. Geological Survey/HCI: Modeling Code Developer
Linda D. Bond co-authored with Timothy J. Durbin (HCI) FEMFLOW3D, a computer modeling program designed to analyze a wide rage of groundwater problems and conditions. The program provides a systematic method to evaluate the effect of variable land uses and surface water conditions on groundwater, as well as variable 3-dimensional structural and flow conditions within the aquifer system. (Publication: *Durbin, T.D., Bond, L.D.*, FEMFLOW3D: a Finite-Element Program for the Simulation of Three-Dimensional Aquifers: U.S. Geological Survey, Open File Report 97-810.)

Putah Creek Water Rights: Litigation Support
Linda D. Bond (HCI project leader) provided litigation support for water-rights adjudication investigations for Putah Creek Landowners Association (Yolo and Solano counties, CA). LDBond subsequently provided continued litigation support to individual Putah Creek landowners. Work included the development and presentation of an analysis of stream hydrology involving the historical diversions from Putah Creek, operation of Monticello Dam and changes in stream recharge to groundwater system. The work successfully supported the groundwater rights of the landowners.

City of Chico: Hydrogeologic Consultant
Linda D. Bond (HCI project leader) developed a groundwater resources analysis for the Chico General Plan Study, which estimated 20-year groundwater level changes based on projected urban growth, zoning changes, wastewater treatment conversions and changes in the urban/agricultural interface.

Yolo County Flood Control & Water Conservation District: Hydrogeologic Consultant
Linda D. Bond (HCI project leader) developed a numerical groundwater model that quantified the magnitude of potential land subsidence that would be caused by drought-bank water transfers from Yolo County, California. Land subsidence is a significant issue in some portions of Yolo County with potential to cause flood-control problems and land-leveling problems in agricultural areas.

Turlock and Modesto Irrigation Districts:
Hydrogeologic Consulting and Litigation Support
Linda D. Bond (HCI technical lead) developed a three-dimensional numerical groundwater flow model for Turlock and Modesto Irrigation Districts. Initially, this model was developed to support negotiations and license renewal for New Don Pedro Reservoir by the Federal Energy Regulatory Commission (FERC). The model was subsequently used for litigation support, urban expansion impacts and salinity analyses. Additional applications included:

- Development of a quantitative analysis that was used to successfully defend Turlock Irrigation District in a challenge to the District's right to augment surface-water deliveries with groundwater during the 1989 drought. Demonstrated the District's right to

groundwater through its contribution to long-term regional groundwater recharge from surface-water irrigation.

- Evaluation of groundwater impact of the potential use of surface water by rapidly growing municipalities in the Turlock area.
- Evaluation of salinity degradation of groundwater from wells in the Turlock area caused by the upwelling of saline water from marine formations underlying the fresh-water aquifer system.

City of Lompoc: Hydrogeologic Consulting
Linda D. Bond (HCI model development support) developed water-use parameters and calibration for a groundwater-flow model of the Santa Ynez Valley for the city of Lompoc. The model provided a technical basis for negotiations with the U.S. Bureau of Reclamation and other parities concerning the reoperation of the Cachuma Reservoir. The model analyzes the interaction between the Santa Ynez River and the regional groundwater system and accounts for the effects of groundwater pumping, reservoir operations, streambed leakage, and consumptive use by agricultural, phreatophyte vegetation and municipalities.

George Air Force Base, Victorville, CA: Hydrologic Consulting
Linda D. Bond (MWH hydrogeologist) developed groundwater flow and transport models to assess contamination at numerous industrial, municipal and federal sites. Bond applied models to identify sources and migration paths of contaminant plumes, to direct field investigations, and to evaluate alternatives for aquifer remediation.

Parjaro Valley Seawater Intrusion Study: Hydrogeologic Researcher (USGS)
Linda D. Bond developed a solute-transport groundwater model of Pajaro Valley, California to evaluate the problem of regional seawater intrusion. Bond identified the pathways, the mechanisms, and the rate of movement of seawater intrusion into the Valley's primary aquifer. Bond's study demonstrated that the location of near-shore pumping was the most critical factor in causing seawater intrusion, rather than overall pumping rates. (Publication: *Bond, L.D.* and Bredehoeft, J.D., 1987, Origins of Seawater Contamination in a Coastal Aquifer - A Case Study of the Pajaro Valley, California: Journal of Hydrology, v. 92, p. 263-388.)

DECLARATION OF
James Adams

I, **James Adams** declare as follows:

1. I am presently employed by the California Energy Commission in the Environmental Office of the Energy Facilities Siting Division as a Planner.

2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.

3. I helped prepare the staff testimony on **Traffic and Transportation** for the **Niland Gas Turbine Plant** project based on my independent analysis of the Small Power Plant Exemption and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.

4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.

5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 8/15/06 Signed: [signature]

At: Sacramento, California

James S. Adams, M.A.
Environmental Protection Office
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5504
PH (916) 653-0702, FAX (916) 651-8868
jadams@energy.state.ca.us

5/1999
Present **Environmental Planner**
Review applications for certification to acquire permits from the California Energy Commission to build electric generating power plants. Specific technical fields include socioeconomics, traffic and transportation, land use and visual resources. Work on special projects as requested.

11/1997
Present **Energy and Resource Consultant**
Provide clients with technical expertise on various issues related to natural resource use and development. Current activities include managing an intervention by the Surfrider Foundation before the California Public Utilities Commission regarding decommissioning issues concerning Humboldt Bay, Diablo Canyon and San Onofre nuclear reactors.

9/1994--
10/1997 **Senior Analyst - Safe Energy Communication Council (SECC)**
Responsible for developing and/or implementing campaigns on various energy issues involving the promotion of energy efficiency and renewable energy and advocating less reliance on nuclear power. Managed educational outreach efforts to newspaper editorial writers throughout the U.S. to encourage coverage of energy issues. Participated in meetings and negotiations with key Clinton administration officials, members of Congress and staff, national coalitions, and grassroots organizations on important energy issues (e.g. U.S. Department of Energy Budget for Fiscal Years 1996-1998). Successfully raised $140,000 from private foundations to support SECC activities.

6/1978--
12/1992 **Principal Consultant - Redwood Alliance**
Provided consulting services to the Alliance; a renewable energy/political advocacy organization. Major responsibilities included managing and/or participating in several interventions/appearances before the California Public Utilities Commission, California Energy Commission, California Legislature, U.S. Congress and the U.S. Nuclear Regulatory Commission. Issues included electric utility planning options, greater reliance on energy efficiency and renewable energy, nuclear power economic analyses, decommissioning cost estimates, and nuclear waste management and disposal.

2/1983--
8/1986 **Natural Resource Specialist**
Assisted private consulting, firms, non-profit corporations and government agencies in various projects related to the enhancement and protection of national forests in Northern California and Southern Oregon. This included contracts with the U.S. Forest Service, Fish and Wildlife Service, National Park Service, the California Coastal Conservancy, and private landowners.

6/1978--
present Consultant/Journalist/Paralegal/Lobbyist
Throughout the period of work outlined above, I have written a considerable amount of news articles and reports connected to ongoing-projects and issues of personal interest. The leg, al/administrative interventions have required extensive paralegal work to support attorneys, and technical expertise to identify and assist consultants. In addition, many of the projects required consulting services and lobbying, at the local, state and federal level whenever necessary, as well as working with the print and television media as appropriate.

From 1978 through 1984 1 served on the Board of Directors for two locals non-profit agencies devoted to sustainable community development, Redwood Community Development Council and Redwood Community Action Agency (RCAA). I also was hired on staff at RCAA as a natural resource specialist which is explained more fully above. I am proficient with computers, printers, fax machines and related equipment.

EDUCATION

M.A. Social Science. Political science and natural resources emphasis. California State University at Humboldt. Graduated December 1988.

B.A. Political Science. Political and economic aspects of natural resource development, with a particular emphasis in forest ecology and appropriate technology. California State University at Humboldt. Graduated June 1978.

Academic
Honors. Member of PI GAMMU MU Honor Society since 1986.

MILITARY SERVICE

7/1969--
9/1975 U.S. Navy. Air Traffic Controller.
Honorable Discharge.

DECLARATION OF

Dr.Obed Odoemelam

I, **Obed Odoemelam** declare as follows:

1. I am presently employed by the California Energy Commission in the Facilities Siting Division as a Staff Toxicologist.

2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.

3. I helped prepare the staff testimony on **Transmission Line Safety and Nuisance** for Niland Gas Turbine Plant based on my independent analysis of the Small Power Plant Exemption and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.

4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.

5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 8/16/06 Signed: O Odoemelam

At: Sacramento, California

RESUME

DR. OBED ODOEMELAM

EDUCATION:

1979-1981 University of California, Davis, California. Ph.D., Ecotoxicology

1976-1978 University of Wisconsin, Eau Claire, Wisconsin. M.S., Biology.

1972-1976 University of Wisconsin, Eau Claire, Wisconsin. B.S., Biology

EXPERIENCE:

1989
The Present: California Energy Commission. Staff Toxicologist.

Responsible for the technical oversight of staffs from all Divisions in the Commission as well as outside consultants or University researchers who manage or conduct multi-disciplinary research in support of Commission programs. Research is in the following program areas: Energy conservation-related indoor pollution, power plant-related outdoor pollution, power plant-related waste management, alternative fuels-related health effects, waste water treatment, and the health effects of electromagnetic fields. Serve as scientific adviser to Commissioners and Commission staff on issues related to energy conservation. Serve on statewide advisory panels on issues related to multiple chemical sensitivity, ventilation standards, electromagnetic field regulation, health risk assessment, and outdoor pollution control technology. Testify as an expert witness at Commission hearings and before the California legislature on health issues related to energy development and conservation. Review research proposals and findings for policy implications, interact with federal and state agencies and industry on the establishment of exposure limits for environmental pollutants, and prepare reports for publication.

1985-1989 California Energy Commission.

Responsible for assessing the potential impacts of criteria and noncriteria pollutants and hazardous wastes associated with the construction, operation and decommissioning of specific power plant projects. Testified before the Commission in the power plant certification process, and interacted with federal and state agencies on the establishment of environmental limits for air and water pollutants.

1983-1985 California Department of Food and Agriculture.

Environmental Health Specialist.

Evaluated pesticide registration data regarding the health and environmental effects of agricultural chemicals. Prepared reports for public information in connection with the eradication of specific agricultural pests in California.

DECLARATION OF
AJOY GUHA

I, Ajoy Guha, declare as follows:

1. I am presently employed by the California Energy Commission in the **Transmission System Engineering unit** of the Energy Facilities Siting Division as an Associate Electrical Engineer.

2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.

3. I helped prepare the staff testimony on **Transmission System Engineering**, for the **Niland Gas Turbine Plant** based on my independent analysis of the Amendment petition and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.

4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.

5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 8-23-06 Signed: Ajoy Guha

At: Sacramento, California

RESUME

AJOY GUHA

Associate Electrical Engineer
California Energy Commission
1516 Ninth Street, MS 46
Sacramento, CA 95814

EDUCATION:
MSEE, POWER SYSTEMS ENGINEERING, PURDUE UNIVERSITY, INDIANA
BSEE, ELECTRICAL ENGINEERING, CALCUTTA UNIVERSITY, INDIA

CERTIFICATIONS:
REGISTERED PROFESSIONAL ENGINEER, CALIFORNIA, INDIANA & ILLIINOIS
MEMBER OF IEEE; MEMBER OF THE INSTITUTION OF ENGINEERS OF INDIA

SUMMARY OF PROFESSIONAL BACKGROUND:

Ajoy Guha, P. E. has years of electric utility experience with an extensive background in evaluating and determining current and potential transmission system reliability problems and their cost effective solutions. He has a good understanding of the transmission issues and concerns. He is proficient in utilizing computer models of electrical systems in performing power flow, dynamic stability and short circuit studies, and provide system evaluations and solutions, and had performed generator interconnection studies, area transfer and interconnected transmission studies, and prepared five year transmission alternate plans and annual operating plans. He is also experienced in utilizing Integrated Resource Planning computer models for generation production costing and long term resource plans, and had worked as an Executive in electric utilities and experienced in construction, operation, maintenance and standardization of transmission and distribution lines.

WORK EXPERIENCE:

CALIFORNIA ENERGY COMMISSION, ENERGY FACLITIES SITING AND ENVIRONMENTAL DIVISION, SACRAMENTO, CA, 11/2000-Present.
Working as Associate Electrical Engineer in the Transmission System Engineering unit on licensing generation projects. Work involves evaluating generation interconnection studies and their impacts on transmission system, and providing staff assessments and testimony to the commission, and coordination with utilities and other agencies.

ALLIANT ENERGY, DELIVERY SYSTEM PLANNING, MADISON, WI, 4/2000-9/2000.
Worked as Transmission Services Engineer, performed Generator Interconnection studies and system planning studies.

IMPERIAL IRRIGATION DISTRICT, POWER DEPT., Imperial, California, 1985-1998.
Worked as Senior Planning Engineer in a supervisory position and in Transmission, Distribution and Integrated Resource planning areas. Performed interconnection studies for 500 MW geothermal plants and developed plan for a collector system, developed methodologies for transmission service charges , scheduling fees and losses. Worked as the Project Leader in the 1992 Electricity Report (ER 92) process of the California Energy Commission. Worked as the Project Leader for installation of an engineering computer system and softwares. Assumed the Project Lead in the standardization of construction and materials, and published construction standards.

CITY LIGHT & POWER, Frankfort, Indiana, 1980 – 1985.
Worked as Assistant Superintendent and managed engineering, construction and operation depts.

WESTERN ILLINOIS POWER CO-OP., Jacksonville, Illinois, 1978 – 1980.
Worked as Planning Engineer and was involved in transmission system planning.

THE CALCUTTA ELECTRIC SUPPLY CORPORATION LTD. (CESC), Calcutta, India, 1964 –1978.
Worked as District Engineer and was responsible for managing customer relations, purchasing and stores, system planning, construction, operation and maintenance departments of the most industrialized Transmission and Distribution division of the Utility. Worked as PROJECT MANAGER for construction of a 30 mile Double Circuit 132 kV gas-filled Underground Cable urban project. During 1961-63, worked as Factory Engineer for design, manufacturing and testing of transformers, motor starters and worked in a coal-fired generating plant.

DECLARATION OF
Mark R. Hamblin

I, Mark R. Hamblin declare as follows:

I am presently employed by the California Energy Commission in the Environmental Protection Office of the Energy Facilities Siting Division as a Planner II.

A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.

I prepared the Visual Resources section in the Initial Study for the Niland Gas Turbine Plant based on my independent analysis and supplement(s) thereto, data from reliable documents and sources, and my professional experience and knowledge.

It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.

I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: August 23, 2006 Signed: Mark R. Hamblin

At: Sacramento, California

MARK R. HAMBLIN

Summary

Public administrator/land use planner with 15 years experience addressing land use development matters of concern to citizens and government leaders. Expertise in interpreting public policy pertaining to land use and environmental assessment. Demonstrated ability in working with individuals, and on teams involved in the development permitting process.

Professional Experience

California Energy Commission, Sacramento, CA.
Planner II November 2000 to present.
Prepares an independent technical analysis in the area(s) of land use, traffic & transportation, and visual resources to inform interested persons and to make recommendations to the Energy Commission regarding the consequences of a natural gas fired power generation plant proposal; reviews information provided by the applicant and other sources to assess the environmental effects of a proposal as required by the California Environmental Quality Act (CEQA), and the California Energy Commission siting regulations; evaluates project in accordance with federal, state and local laws, ordinances, regulations, standards (LORS); coordinates proposal with federal, state and local agencies; conducts field studies; oversees technical consultant(s); participates in public workshop(s) on proposal; presents sworn testimony during evidentiary hearings; implements compliance monitoring programs for projects approved by the Energy Commission to ensure that power plants are constructed and operated according to the conditions of certification of their license.

Yolo County Planning and Public Works Department, Woodland, CA.
Associate Planner June 1992 to October 2000.
Advised and assisted individuals in the processing of land use requests (general plan amendments, conditional use permits, subdivision maps, etc.); reviewed information provided by the applicant and other sources for consistency with the state zoning and planning law, the county General Plan, the county government code, and the requirements of the CEQA; collected and analyzed information pertaining to a land use request and presented it in a staff report for consideration by the county planning commission and/or county board of supervisors; board of supervisors liaison, and planning department staff person to citizen and inter-agency committees (county airport advisory committee, county habitat conservation plan steering committee, and community general plan citizen advisory committee(s); drafted zoning ordinances and regulations; prepared environmental assessment documents in accordance with CEQA and NEPA (National Environmental Protection Act); hired and supervised consultants; executed county zoning administrator duties; conducted zone code enforcement; reviewed building plans for issuance of permits; answered questions at the public counter, or on the telephone regarding land use issues and development proposals in the County.

Yolo County Community Development Agency, Woodland, CA.
Assistant Planner January 1991 to June 1992.
Advised and assisted individuals in the processing of land use requests; reviewed information provided by the applicant and other sources for consistency with the county

General Plan, the state and county government code, and the requirements of CEQA; collected and analyzed information pertaining to a land use request and presented it in a staff report for consideration by the county planning commission; drafted zoning ordinances; prepared environmental assessment documents in accordance to the CEQA; supervised consultants; conducted zone code enforcement; reviewed building plans for issuance of permits; answered questions at the public counter, or on the telephone regarding land use and development in the County.

Tulare County Planning and Development Department, Visalia, CA.
Planning Technician II March 1988 to January 1990.
Advised and assisted individuals in the processing of land use requests, specifically special-use permits, variances, parcel and subdivision maps; reviewed information provided by the applicant and other sources for consistency with the county General Plan, the state and county government code, and the requirements of CEQA; collected and evaluated information for presentation in a staff report on the proposed land use request for consideration by the county zoning administrator, site plan review committee, or planning commission; prepared environmental assessment documents in accordance with CEQA; conducted zone code enforcement; reviewed building plans for issuance of permits; answered questions at the public counter, or on the telephone regarding land use and development in the County.

Education

University of California, Davis Extension. Coursework in California Land Use Planning and the California Environmental Quality Act 1988 to 1995.
Cosumnes River College. Coursework in Television and Radio Broadcasting1990 to 1991.
California State University, Bakersfield. Master of Public Administration; August 1988. Concentration in Public Policy. Coursework in Business Administration and Political Science.
California State University, Sacramento. Bachelor of Science in Public Administration; May 1984. Concentration in Human Resources Management.
Porterville College. Associate in Arts Social Science; May 1982. Coursework in Administration of Justice.

Awards

2001 Superior Accomplishment Award - Recognition of outstanding performance and contribution as a Team Member of the "21 Day, 4, 6, and 12 Month Processes Team." California Energy Commission.

2001 Superior Accomplishment Award - Recognition of outstanding performance and contribution as a Team Member of the "Expedited 4 Month AFC/SPPE Team," California Energy Commission.

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

SMALL POWER PLANT EXEMPTION FOR THE NILAND GAS TURBINE PLANT (Imperial Irrigation District)	**DOCKET NO. 06-SPPE-1** **(Established 3/29/06)**

PROOF OF SERVICE LIST

DOCKET UNIT

Send the original signed document plus the required 12 copies to the address below:

CALIFORNIA ENERGY COMMISSION
DOCKET UNIT, MS-4
*Attn: Docket No. 06-SPPE-1
1516 Ninth Street
Sacramento, CA 95814-5512
docket@energy.state.ca.us

* * * *

In addition to the documents sent to the Commission Docket Unit, also send individual copies of any documents to:

APPLICANT

Dana Diller
Project Manager
6410 E. Everett Drive
Scottsdale, AZ 85254
(480) 664-8154
(480) 444-9080 (Cell)
ddiller@cox.net

Henryk Olstowski
Assistant Manager, IID Energy
485 E. Villa Road
El Centro, CA 92243
(760) 339-0517
(760) 996-0022 (Cell)
haolstowski@IID.com

Balta Aguilera
Assistant Project Manager
485 E. Villa Road
El Centro, CA 92243
(760) 339-0590
(760) 604-0833 (Cell)
baaguilera@IID.com

Douglas Hahn
8181 Tufts Avenue
Denver, CO 80237
(303) 740-2628
(719) 216-4213 (Cell)
douglas_hahn@urscorp.com

Jeremy Rowland
8181 Tufts Avenue
Denver, CO 80237
(303) 740-3820
(303) 570-1943 (Cell)
jeremy_rowland@urscorp.com

INTERVENORS

David Tateosian, Power Engineers
P. O. Box 2037
Martinez, CA 94553
(925) 372-9284
(925) 519-2180 (Cell)
dtateosian@powereng.com

INTERESTED AGENCIES

No agencies to date.

COUNSEL FOR APPLICANT

Allan Thompson
21 "C" Orinda Way #314
Orinda, CA 94563
(925) 258-9962
(925) 708-0363 (Cell)
allanori@comcast.net

DECLARATION OF SERVICE

I, **Angela Hockaday** declare that on **August 30, 2006**, I deposited copies of the attached **Final Initial Study for the Niland Gas Turbine Plant SPPE (06-SPPE-1)** in the United States mail at Sacramento, CA with first class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above. Transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. I declare under penalty of perjury that the foregoing is true and correct.

[signature]

* * * *

INTERNAL DISTRIBUTION LIST

FOR YOUR INFORMATION ONLY! Parties **DO NOT** mail to the following individuals. The Energy Commission Docket Unit will internally distribute documents filed in this case to the following:

JAMES D. BOYD
Commissioner & Presiding Member
MS-3

JOSEPH DESMOND
Chairman & Associate Member
MS-3

GARRET SHEAN
Hearing Officer
MS-9

Jack Caswell
Project Manager
MS-15

Kerry Willis
Staff Counsel
MS-14

PUBLIC ADVISER

MARGRET KIM
Public Adviser
1516 Ninth Street, MS-12
Sacramento, CA 95814
pao@energy.state.ca.us