

**PETITION FOR CHANGE OF THE PROJECT DESCRIPTION IN THE FINAL
DECISION TO INSTALL AND OPERATE AN EMERGENCY ENGINE**

PALOMAR ENERGY CENTER

(O1-AFC-24C)

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DOCKET	
01-AFC-24C	
DATE	_____
RECD.	<u>MAY 25 2010</u>

By:

**SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA**

Submitted to:

CALIFORNIA ENERGY COMMISSION

MAY 2010

**PETITION FOR CHANGE OF THE PROJECT DESCRIPTION IN THE FINAL
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PALOMAR ENERGY CENTER
(01-AFC-24C)**

1.0 INTRODUCTION

San Diego Gas & Electric Company (SDG&E) is filing this petition for a proposed amendment of the project design as described in the Final Decision for the Palomar Energy Center (PEC), Docket 01-AFC-24 pursuant to 20 Cal. Code Regs. Section 1769(a)(1). San Diego Gas & Electric (SDG&E or "the applicant") is proposing to install one 1945 brake horsepower (bhp) emergency-use internal combustion engine (ICE) at the existing Palomar Energy Center (PEC). The engine will be fired exclusively on pipeline quality natural gas fuel and drive a 1400 kilowatt (kW) electrical generator. This emergency-use device will be a critical services engine, meant to keep certain plant systems in a ready mode when electricity is unavailable from the SDG&E power grid. The goal of this project is to make the PEC a more reliable electricity generating facility (EGF).

The Palomar Energy Center is a NERC Critical Asset necessary for transmission system restoration and provides power to the San Onofre Nuclear Generating Station (SONGS) in the event of a system outage. In the event of a transmission outage while Palomar is on line, the transmission outage will usually cause the Palomar plant to trip or shut down, either for electrical protection of the grid and/or generators, or because insufficient or excessive load outside the capability of the plant is encountered causing the generators to shut down. If the plant is already off line, battery power and/or backup transmission power is insufficient to restart the plant. The PEC utilizes backup batteries to power critical support systems such as lube oil pumps and turning gear on turbines and generators. These batteries last about four hours, but if the power is not restored within four hours then startup of PEC may be extended to several days due to bowing of rotor

shafts. It may take days for a rotor to straighten itself enough to be restarted. Under many loss of power conditions, permanent damage to rotors and bearings may result. The critical services engine would provide backup power to lube oil pumps, turning gear motors, fire pumps, cooling water pumps, generator hydrogen seal oil pumps, etc. so that the plant could be restarted once power is restored. The addition of this critical services engine is the simplest and most effective way to prepare the plant for an extended shutdown due to loss of the transmission system. The engine will normally only be operated for maintenance testing purposes. The San Diego APCD permit limits operation to no more than 52 hours per year for testing.

PEC was originally licensed by the California Energy Commission (CEC), and is currently in operation under temporary operating permits (authority to construct and Title V application shield), issued by San Diego Air Pollution Control District (SDAPCD). Application to the SDAPCD was made prior to this Petition to allow installation and operation of the emergency engine. In addition, the pending Title V permit application for PEC was amended to incorporate the new emergency engine into the Title V permit. A copy of the full application to the SDAPCD is included in a CD submitted with this petition. The SDAPCD issued an approval of this application on May 11, 2010. A copy of the SDAPCD approval and related permit conditions is attached in Appendix 1 hereto. PEC requests that the same conditions be incorporated into its Commission license as an additional Conditions of Certification.

The following sections of this petition contain further information that is required pursuant to 20 CCR Section 1769(a)(1), Post Certification Amendments and Changes.

2.0 DESCRIPTION OF PROPOSED MODIFICATION (Sec. 1769(a)(1)(A))

The following changes are requested to the PEC Conditions of certification:

AQ-XX. An Emergency Engine Generator: Cummins engine, Model QSK60G, natural gas fired, 1945 hp, turbocharged and aftercooled, lean burn, driving a 1400 kw generator is authorized to be installed and operated in accordance with the following conditions:

- a. Access, facilities, utilities and any necessary safety equipment for source testing and inspection shall be provided upon request of the Air Pollution Control District.
- b. This internal combustion engine shall not exceed 52 hours of operation per calendar year for non-emergency purposes (testing and maintenance).
- c. At no time shall the subject equipment cause or contribute to a public nuisance as specified in District Rule 51.
- d. Visible emissions including crank case smoke shall comply with Rule 50. (Rule 50).
- e. Gaseous fuel engines shall use only gaseous fuel which contains no more than 10 grains of sulfur compounds, calculated, as hydrogen sulfide, per 100 cubic feet of dry gaseous fuel at standard conditions. Gaseous fuels include natural gas, propane, liquefied petroleum gas, (LPG), butane. Gasoline engines shall use only California reformulated gasoline.
- f. A non-resettable engine hour meter shall be installed on this engine, maintained in good working order, and used for recording engine operating hours. If a meter is replaced, the air pollution control district's compliance division shall be notified in writing within 10 calendar days. The written notification shall include the following information:
 - 1) Old meter's hour reading
 - 2) Replacement meter's manufacturer name, model, and serial number if available and current hour reading on replacement meter.
 - 3) Copy of receipt of new meter or of installation work order.

A copy of the meter replacement notification shall be maintained on site and made available to the air pollution control District upon request. (Rule 69.4.1)

g. The owner or operator of this engine shall conduct periodic maintenance of the engine and add-on control equipment, if any, as recommended by the engine and control equipment manufacturers or as specified by the engine servicing company's maintenance procedures. The periodic maintenance shall be conducted at least once each calendar year. (Rule 69.4.1)

h. The owner or operator of this engine shall maintain an operating log containing, at a minimum, the following: dates and times of engine operation, indicating whether the operation was for non-emergency purposes or during an emergency situation and the nature of the emergency, if available (these records are not required if the total engine operations for any purpose, including, emergency situation, do not exceed 52 hours in a calendar year); total cumulative hours of operation per calendar year, based on actual readings of engine hour or fuel meter; records of periodic maintenance including dates maintenance was performed.

i. All operational and maintenance logs required by this permit shall be kept a minimum of 3 years unless otherwise indicated by the conditions of this permit, and these records shall be made available to the Air Pollution Control District upon request.

j. The owner or operator of the engine shall maintain the following records on site for at least the same period of time as the engine to which the records apply is located at the site:

- 1). Applicable fuel certification.
- 2). Manual of recommended maintenance provided by the manufacturer, or maintenance procedures specified by the engine servicing company.
- 3). Records of annual engine maintenance including date the maintenance was performed. These records shall be made available to the air pollution control District upon request. (Rule 69.4.1).

k. The permittee shall, upon determination of applicability and ,written notification by the District, comply with all applicable requirements of the Air

Toxics "Hot Spots" Information and Assessment Act (California Health and Safety Code Section 44300 et seq.)

Verification: The project owner shall provide the District and the CPM with the information necessary to demonstrate compliance with this condition as part of the Quarterly Operational Reports (**AQ-SC7**).

3.0 NECESSITY (Sec. 1769(a)(1)(B))

The Palomar Energy Center (PEC) has been declared a NERC Critical Asset due to its indispensable role in system restoration or black start of the grid. In the event of a loss of the transmission system (due to wildfire, earthquake, tsunami, civil unrest, terrorist activity, etc.) the PEC relies on battery banks to power equipment required to shutdown the plant such as lube oil pumps, generator and turbine turning gear, and generator hydrogen seal oil pumps. In the event of a transmission outage while Palomar is on line, the transmission outage will usually cause the Palomar plant to trip or shut down, either for electrical protection of the grid and/or generators, or because insufficient or excessive load outside the capability of the plant is encountered causing the generators to shut down. If the plant is already off line, battery power and/or backup transmission power capability is insufficient to restart the plant. If power has not been restored by the time the batteries run down then the generator and turbine rotors will bow due to uneven heat distribution. If this occurs then it may take several days or weeks to straighten out depending on the severity. Under many loss of power events, permanent damage to rotors and bearings may result. In such event, then the PEC will not be available to play its part in system restoration. In this scenario the PEC is also without any power for fire pumps, emergency lighting, controls circuits, and communications. The critical services engine not only provides an effective means of allowing the PEC to fulfill its role for NERC and WECC but also provided basic safety and communications for plant personnel.

4.0 TIMING (Sec. 1769(a)(1)(C) and (D))

SDG&E assumed ownership of the PEC about three years after issuance of the Final Decision and certification to Palomar Energy, LLC. After taking over operation of the plant on March 31, 2006, SDG&E undertook a number of engineering and design reviews to determine if plant operations could be improved to better serve the needs of SDG&E ratepayers. SDG&E has also benefited from experience gained operating the plant since assuming ownership. This “fine tuning” could not have taken place during the licensing proceeding because SDG&E was not the applicant, the plant was not yet operating, and Palomar Energy brought its own objectives to the development of the project for the merchant market. The addition of the emergency engine does not change or undermine the assumptions, rationale, findings, or other bases of the Final Decision. The change complies with all laws, ordinances, regulations and standards and does not have a significant environmental impact, as further described below.

5.0 ANALYSIS OF THE EFFECT OF THE MODIFICATIONS ON THE ENVIRONMENT (Sec. 1769(a)(1)(E))

The requested equipment change will have no significant effects on any of the technical areas analyzed in the August 2003 Final Commission Decision. Please see Table 1 below.

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Table 1
Review of Effects of Installation and Operation of Emergency Engine

TECHNICAL AREA	SIGNIFICANT ENVIRONMENTAL IMPACT (Y/N)?		NOTES
AIR QUALITY		N	
CULTURAL RESOURCES		N	Area for construction is prior filled area
EFFICIENCY		N	No impact
GEOLOGICAL HAZARDS		N	No change
HAZARDOUS MATERIALS HANDLING		N	No hazardous material will be used
LAND USE		N	No change
NOISE		N	
PALEONTOLOGICAL RESOURCES		N	Area for construction is prior filled area
BIOLOGICAL RESOURCES		N	Area previously disturbed.

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TECHNICAL AREA	SIGNIFICANT ENVIRONMENTAL IMPACT (Y/N)?		NOTES
PUBLIC HEALTH		N	Emergency engine does not significantly effect air emissions from the facility; See further discussion below
RELIABILITY		N	The project improves plant reliability.
SOCIOECONOMICS		N	No change
SOILS		N	No change
TRAFFIC AND TRANSPORTATION		N	Construction traffic minimal
T-LINE SAFETY AND NUISANCE		N	No change
TRANSMISSION SYSTEM ENGINEERING		N	No change
VISUAL RESOURCES		N	Structures will meet painting and visual requirements of Final Decision; The engine will not be visible offsite. See plot plan in Appendix 2
WASTE		N	No change

TECHNICAL AREA	SIGNIFICANT ENVIRONMENTAL IMPACT (Y/N)?		NOTES
MANAGEMENT			
WATER RESOURCES		N	No additional water will be used;
WORKER SAFETY		N	No change

Air Emissions and Public Health

Emissions of criteria pollutants from the proposed emergency-use engine are estimated in Table 2. The emission rates for oxides of nitrogen (NO_x), carbon monoxide (CO) and particulate matter with an aerodynamic diameter of 10 micrometers (PM₁₀) have been provided by Cummins Power Generation on an engine data sheet. An estimate of the emission rate for total hydrocarbons (THC) has also been provided by the manufacturer. Using an implicit conversion ratio from AP42 (Chapter 3.2, Table 3.2-1), emissions of volatile organic compounds (VOC) have been estimated to be approximately 10 percent of the THC emissions. The emission rate of oxides of sulfur (SO_x) from the proposed engine has been calculated using a default emission factor from the South Coast Air Quality Management District (SCAQMD) Annual Emissions Reporting (AER) program general instruction book.

The proposed operating schedule used to build the emissions inventory is as follows:

Daily Average Operating Hours: 1

Daily Maximum Operating Hours: 1

Annual Average Operating Hours: 52

Annual Maximum Operating Hours: 52

TABLE 2
CRITERIA POLLUTANT SUMMARY

Pollutant	Emission Factor (g/bhp-hr)	Average Hourly Emission Rate/(lb/hr)	Average Hourly Emission Rate (lb/hr)	Maximum Daily Emissions (lb/day)	Average Annual Emissions (lb/yr)	Maximum Annual Emissions (lb/yr)
NOx ¹	1.07	2.29	4.59	4.59	119.3	238.6
CO	1.64	3.52	7.03	7.03	182.8	365.7
VOC	0.34	0.73	1.46	1.46	37.9	75.8
SOx	0.002	0.004	0.008	0.01	0.2	0.4
PM10	0.03	0.06	0.13	0.13	3.3	6.7

Source: Application Application #: APCD2009-APP-000839 to San Diego APCD, Table 3.1-1.

Additional criteria pollutant emissions data can be found in the submitted CD containing the application for amendment to the SDAPCD permit (see Appendix D of the application). A health risk assessment of emissions from the engine was carried out by the SDAPCD as part of their review process, and the project was found not to pose a significant risk.

Visual Resources

The facilities will be designed to have minimal visual impact and will meet surface treatment requirements condition of certification VIS-3. Paint color will match the current plant structure paint color as approved by the Compliance Project Manager. Neither structure will exceed the height of adjacent buildings. For additional details see Appendix 2 for site plans and Appendix 3 for a visual rendering. Additional site plans are included in the application to the SDAPCD.

¹ The specification sheet from which this emission factor was taken indicates that the proposed engine is nominally considered to be at 1.0 g/bhp-hr for NOx emissions.

6.0 COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS) (Sec. 1769(a)(1)(F))

The equipment change will not affect compliance with any other LORS requirement. Therefore, the proposed modification is not anticipated to impact SDG&E's ability to comply with the applicable LORS, as listed in Appendix A of the Commission Final Decision. The SDAPCD conducted a review of its review in the course of processing the application and imposing applicable conditions. See also Table 1 above and related discussion.

7.0 POTENTIAL EFFECTS ON PUBLIC AND NEARBY PROPERTY OWNERS (Sec. 1769(a)(1)(G and I))

The requested modification will not have significant adverse environmental impacts and will comply with all applicable LORS. Thus, the proposed equipment change is not anticipated to affect nearby property owners or parties in the application proceedings or the public

8.0 LIST OF PROPERTY OWNERS (Sec. 1769(a)(1)(H))

A list of property owners 1,000 feet of the plant site has previously been provided to the Commission CPM.

9.0 SUMMARY OF REQUEST

As demonstrated above, the requested change to the PEC's Final Decision is not anticipated to have an adverse effect on the public or the environment. The change will not affect compliance with applicable LORS. Accordingly, SDG&E requests that the

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Energy Commission Staff expedite review of this petition, and request Commission approval of the proposed modified conditions in accordance with Title 20 CCR Section 1769.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Taylor O. Miller". The signature is written in a cursive style with a horizontal line extending to the left.

Taylor O. Miller
Counsel to SDG&E

Dated: May 18, 2010

APPENDIX 1

SAN DIEGO AIR POLLUTION CONTROL DISTRICT APPROVAL

APPENDIX 2

CONCEPTUAL DRAWINGS

APPENDIX 3

VISUAL RENDERING



County of San Diego
AIR POLLUTION CONTROL DISTRICT
10124 Old Grove Road, San Diego, CA 92131

(858) 586-2600
FAX (858) 586-2601
Smoking Vehicle Hotline
1-800-28-SMOKE
www.sdapcd.org

May 11, 2010

Hashim Navrozali
SDG&E Co
8315 Century Park Ct CP21E
San Diego, CA 92123-1548

After examination of your Application APCD2009-APP-000839 for an Air Pollution Control District (District) Authority to Construct and Permit to Operate for equipment to be located at 2300 HARVESON PLACE, ESCONDIDO, CA 92029 in San Diego County, the District has decided on the following actions:

Authority to Construct is granted pursuant to Rule 20 of the Air Pollution Control District Rules and Regulations for equipment to consist of:

Emergency Engine Generator: Cummins engine, Model QSK60G, natural gas fired, 1945 hp, turbocharged and aftercooled, lean burn, driving a 1400 kw generator.

This Authority to Construct is issued with the following conditions:

- 1 Access, facilities, utilities and any necessary safety equipment for source testing and inspection shall be provided upon request of the Air Pollution Control District.
- 2 This internal combustion engine shall not exceed 52 hours of operation per calendar year for non-emergency purposes (testing and maintenance).
- 3 At no time shall the subject equipment cause or contribute to a public nuisance as specified in District Rule 51.
- 4 Visible emissions including crank case smoke shall comply with Rule 50. (Rule 50)
- 5 Gaseous fuel engines shall use only gaseous fuel which contains no more than 10 grains of sulfur compounds, calculated as hydrogen sulfide, per 100 cubic feet of dry gaseous fuel at standard conditions. Gaseous fuels include natural gas, propane, liquefied petroleum gas (LPG), butane. Gasoline engines shall use only California reformulated gasoline.
- 6 A non-resettable engine hour meter shall be installed on this engine, maintained in good working order, and used for recording engine operating hours. If a meter is replaced, the air pollution control district's compliance division shall be notified in writing within 10 calendar days. The written notification shall include the following information:
 - A. Old meter's hour reading
 - B. Replacement meter's manufacturer name, model, and serial number if available and current hour reading on replacement meter.
 - C. Copy of receipt of new meter or of installation work order.

- A copy of the meter replacement notification shall be maintained on site and made available to the air pollution control District upon request. (Rule 69.4.1)
- 7 The owner or operator of this engine shall conduct periodic maintenance of the engine and add-on control equipment, if any, as recommended by the engine and control equipment manufacturers or as specified by the engine servicing company's maintenance procedures. The periodic maintenance shall be conducted at least once each calendar year. (Rule 69.4.1)
 - 8 The owner or operator of this engine shall maintain an operating log containing, at a minimum, the following: dates and times of engine operation, indicating whether the operation was for non-emergency purposes or during an emergency situation and the nature of the emergency, if available (these records are not required if the total engine operations for any purpose, including emergency situation, do not exceed 52 hours in a calendar year); total cumulative hours of operation per calendar year, based on actual readings of engine hour or fuel meter; records of periodic maintenance including dates maintenance was performed.
 - 9 All operational and maintenance logs required by this permit shall be kept a minimum of 3 years unless otherwise indicated by the conditions of this permit, and these records shall be made available to the Air Pollution Control District upon request.
 - 10 The owner or operator of the engine shall maintain the following records on site for at least the same period of time as the engine to which the records apply is located at the site:
 - A. Applicable fuel certification.
 - B. Manual of recommended maintenance provided by the manufacturer, or maintenance procedures specified by the engine servicing company.
 - C. Records of annual engine maintenance including date the maintenance was performed. These records shall be made available to the air pollution control District upon request. (Rule 69.4.1)
 - 11 The permittee shall, upon determination of applicability and written notification by the District, comply with all applicable requirements of the Air Toxics "Hot Spots" Information and Assessment Act (California Health and Safety Code Section 44300 et seq.)
 - 12 This Air Pollution Control District Permit does not relieve the holder from obtaining permits or authorizations required by other governmental agencies.

This Authority to Construct authorizes temporary operation of the above-specified equipment. This temporary Permit to Operate shall take effect upon written notification to the District that construction (or modification) has been completed in accordance with this Authority to Construct. This temporary Permit to Operate will remain in effect, unless withdrawn or modified by the District, and a revised temporary permit (Startup Authorization) is issued or a Permit to Operate is granted or denied.

Upon completion of construction (or modification) in accordance with this Authority to Construct, and prior to commencing operation, the applicant must complete and mail, deliver or fax the enclosed Construction Completion Notice to the District. After mailing, delivering or faxing the notice, the applicant may commence operation of the equipment. Operation must be in compliance with all the conditions of this Authority to Construct and applicable District Rules.

This Authority to Construct shall be posted on or within 25 feet of the above described equipment or

Application #: APCD2009-APP-000839

maintained readily available at all times on the operating premises.

This Air Pollution Control District Authority to Construct does not relieve the holder from obtaining permits or authorizations, which may be required by other governmental agencies. This Authority to Construct is not authority to exceed any applicable emission standard established by this District or any other governmental agency. This authorization is subject to cancellation if any emission standard or condition is violated.

Within 30 days after receipt of this Authority to Construct, the applicant may petition the Hearing Board for a hearing on any conditions imposed herein in accordance with Rule 25.

This Authority to Construct will expire on 05/11/2011 unless an extension is granted in writing.

This is not a Permit to Operate. Please be advised that installation or operation of this process or equipment without written authorization may be a misdemeanor subject to fines and penalties.

If you have any questions regarding this action, please contact me at (858) 586-2745 or via email at Evariste.Haury@sdcounty.ca.gov.



Evariste Haury
Associate Engineer

CC: Compliance Division

CONSTRUCTION COMPLETION NOTICE

San Diego County Air Pollution Control District
10124 Old Grove Road
San Diego, CA 92131
(858) 586-2745
FAX: (858) 586-2601

Please complete the "APPLICANT USE ONLY" portion of this notice and fax or mail it to the APCD. The following information has been included based on your application information. Please note any corrections to this information.

COMPANY NAME (DBA): SDG&E APPLICATION #: 000839

EQUIPMENT ADDRESS: 2300 HARVESON PLACE
ESCONDIDO, CA 92029

TYPE OF EQUIPMENT: EMERGENCY STANDBY ENGINE, CUMMINS NATURAL GAS ENGINE, MODEL QSK60G,
1945 BHP, TURBOCHARGED AND AFTERCOOLED, LEAN BURN, DRIVING A 1400KW
GENERATOR.

APCD PROJECT ENGINEER: EVARISTE HAURY TELEPHONE: (858) 586-2745

APPLICANT USE ONLY

DATE CONSTRUCTION WAS COMPLETED: _____

SERIAL NUMBER OF EQUIPMENT: _____

PERSON PROVIDING NOTIFICATION (Please Print): _____

SIGNATURE: _____

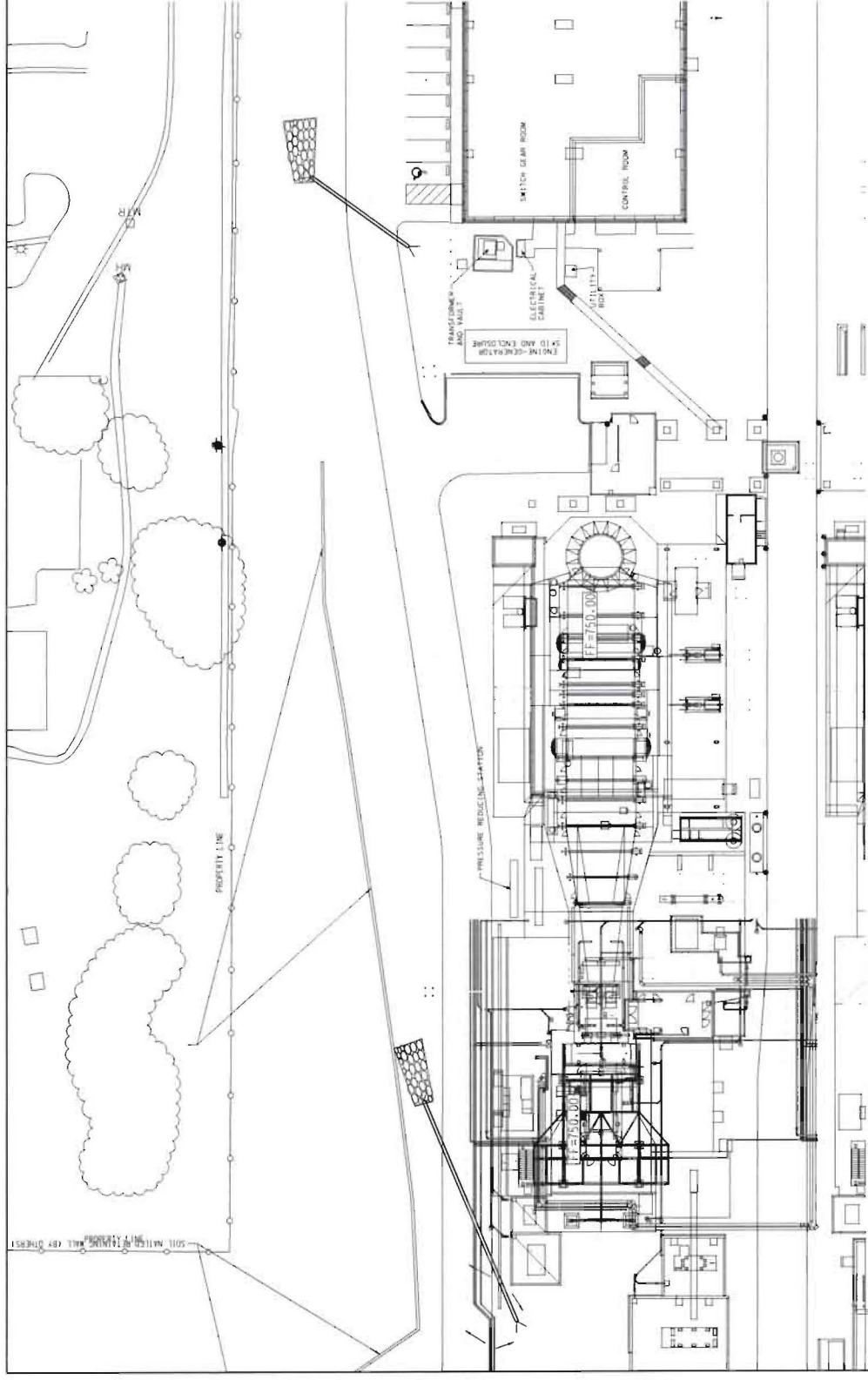
DATE OF NOTIFICATION: _____ TELEPHONE: _____

APCD USE

I.D. #: 2001-SITE-04276

VAX ENTRY DATE: _____

DATE RECEIVED: _____



SITE PLAN
SCALE 1" = 20'



SAN DIEGO GAS & ELECTRIC COMPANY
PALOMAR ENERGY CENTER

CRITICAL POWER PROJECT
SITE PLAN

01-2

REVISIONS

NO.	DATE	BY	APP'D BY	DESCRIPTION





Proposed Emergency Engine Generator

