

Memorandum

Date: October 29, 2010

To: Melissa Jones
Executive Director

From: California Energy Commission - Terry O'Brien, Deputy Director
1516 Ninth Street Siting, Transmission & Environmental Protection Division
Sacramento, CA 95814-5512

Subject: **ITEM FOR THE DECEMBER 15, 2010 BUSINESS MEETING
PALOMAR ENERGY CENTER (1-AFC-24C) PETITION TO
INSTALL AND OPERATE AN EMERGENCY ENGINE**

PROJECT BACKGROUND

The Palomar Energy Center (PEC) is owned and operated by San Diego Gas & Electric (SDG&E) and has been declared a North American Electric Reliability Corporation (NERC) Critical Asset due to its indispensable role in system restoration or black start of the grid. The Critical Asset designation allows PEC to be responsible for transmission system restoration and to provide power to the San Onofre Nuclear Generating Station (SONGS) in the event of a system outage. The 500-megawatt PEC project was certified on August 6, 2003. Construction was initiated on June 1, 2004 and the project began commercial operation on April 1, 2006. The facility is located in the City of Escondido in San Diego County.

ISSUE

SDG&E is proposing to install one 1,945 brake horsepower (bhp) emergency-use internal combustion engine (ICE) at the existing PEC. The engine will be fired exclusively on pipeline-quality natural gas fuel that will drive a 1,400 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.

SUMMARY OF ANALYSIS BY STAFF

When the PEC is online, a transmission outage will usually cause the PEC to trip or shutdown, either for electrical protection of the grid and/or generators, or because insufficient or excessive load outside the capability of the plant is encountered. 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 and if the power is not restored within this time, permanent damage to rotors and bearings may occur. Backup support from the ICE would ensure protection to critical power plant equipment beyond the four hour battery period and would allow the plant to resume operations when power transmission is restored.

With the exception of emergency support, the ICE would only be operated for maintenance testing purposes. The San Diego Air Pollution Control District (SDAPCD) permit limits operation to no more than 52 hours per year for testing.

Staff has added 12 new conditions of certification to the Commission Decision to fully mitigate the petition impacts.

PUBLIC REVIEW

A Notice of Receipt was docketed, posted on the Energy Commission website, and mailed to the post-certification mailing list on October 12, 2010. The staff analysis was docketed, posted on the Energy Commission website, and mailed to interested parties on October 26, 2010.

No comments have been received.

STAFF FINDINGS

Pursuant to Title 20, section 1769(a) of the California Code of Regulations, staff finds:

- The petition meets all the filing criteria of Title 20, section 1769(a) concerning post-certification project modifications;
- The modification would not change the findings in the Energy Commission's Final Decision pursuant to Title 20, section 1755;
- The project would remain in compliance with all applicable laws, ordinances, regulations and standards (LORS), subject to the provisions of Public Resources Code section 25525;
- The addition of this critical services engine is the most effective way to prepare the plant for an extended shutdown due to loss of the transmission system; and
- 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 San Diego Gas and Electric (SDG&E) ratepayers, and this critical services engine is one of the results of those reviews.

RECOMMENDATIONS

Staff recommends approval of the Petition to Amend to install and operate the 1,945 bhp emergency-use ICE. The emergency engine is necessary to protect critical equipment from being damaged during extended transmission outages. With the incorporated Conditions of Certification, the project would continue to comply with applicable LORS.

PROPOSED ADDITIONAL CONDITIONS OF CERTIFICATION

The following new conditions of certification would be amended in the Final Commission Decision for the Palomar Energy Center to ensure compliance with all applicable LORS. These are in addition to those contained in the previous decision. ~~Strikethrough~~ is used to indicate deleted language and underline for new language.

Emergency Engine Generator: Cummins engine, Model QSK60G

Conditions of Certification AQ-SC13 and AQ-56 through AQ-66 apply to the Emergency Engine Generator

AQ-SC13 Testing and maintenance of the emergency engine shall be preformed between the hours of 10:00 am and 3:00 pm, and shall not exceed one hour per week.

Verification: The project owner shall make the site available for inspection of equipment and records by representatives of the District, ARB, and the Energy Commission. The project owner shall provide records of dates and times of preformed testing and maintenance. See Verification for condition **AQ-56** for reporting requirements.

AQ-56 This internal combustion engine shall not exceed 52 hours of operation per calendar year for non-emergency purposes (testing and maintenance).

Verification: The project owner shall submit records required by Conditions **AQ-SC13, AQ-59, AQ-60, and AQ-62** and by this condition demonstrating compliance in the fourth quarter, Quarterly Operational Reports as required by condition **AQ-SC7**. The project owner shall submit a photograph of the engine hour meter as part of the compliance report. The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-57 At no time shall the subject equipment cause or contribute to a public nuisance as specified in District Rule 51.

Verification: The project owner shall make the site available for inspection of equipment and records by representatives of the District, ARB, and the Energy Commission.

AQ-58 Visible emissions including crank case smoke shall comply with Rule 50. (Rule 50)

Verification: See verification for Condition **AQ-57**

AQ-59 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.

Verification: The project owner shall make the site available for inspection of equipment and fuel purchase records by representatives of the District, ARB, and the Energy Commission. The owner shall report fuel specifications and quantity used annually. See Verification for Condition **AQ-56** for reporting requirements.

AQ-60 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 installation work order.

D. 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)

Verification: The project owner shall make the site available for inspection of equipment and records by representatives of the District, ARB, and the Energy Commission. See Verification for condition **AQ-56** for reporting requirements.

AQ-61 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)

Verification: See verification for Condition **AQ-57**.

AQ-62 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 meter; records of periodic maintenance including dates maintenance was performed.

Verification: The project owner shall make the site available for inspection of equipment and records by representatives of the District, ARB, and the Energy Commission. . See Verification for condition **AQ-56** for reporting requirements.

AQ-63 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.

Verification: See verification for Condition **AQ-57**.

AQ-64 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 the 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)

Verification: See verification for Condition **AQ-57**.

AQ-65 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: See verification for Condition **AQ-57.**

AQ-66 This Air Pollution Control District Permit does not relieve the holder from obtaining permits or authorizations required by other government agencies.

Verification: See verification for Condition **AQ-57.**

REFERENCES

AECOM – AECOM Environment, NO2 Dispersion Modeling Analysis for Palomar Energy Center Emergency Generator, September 2010.

ARB - California Air Resources Board, Ambient Air Quality Standards, Area Designations <http://www.arb.ca.gov/desig/desig.htm> May 2010.

ARB2010 - California Air Resources Board, Historical Air Quality Data, Top 4 Summary Nitrogen Dioxide <http://www.arb.ca.gov/adam/topfour/topfourdisplay.php> October 2010.

CEC- California Energy Commission, Final Commission Decision, Palomar Energy Project (01-AFC-24), August 2003.

Petition to Amend - San Diego Gas & Electric Company, Petition to Amend Original Decision, Install and Operate Emergency Engine. April 27, 2010.

US EPA - Stationary Spark Ignition Internal Combustion Engines, 40 CFR 60 Subpart JJJJ. January 18, 2008.

SDAPCD - San Diego Air Pollution Control District, Authority to Construct, May, 2010.

COMPLIANCE PROJECT MANAGER

The Compliance Project Manager is Dale Rundquist, (916) 651-2072.

BUSINESS MEETING PARTICIPANTS

Dale Rundquist, CPM
Joseph Hughes, Technical Staff
Kevin Bell, Compliance Staff Counsel

Attachment: Draft Order