

**PETITION FOR CHANGE OF THE PROJECT DESCRIPTION IN THE FINAL
DECISION TO INSTALL AND OPERATE A SECOND LOAD COMMUTATOR
INVERTER (LCI) AND ASSOCIATED SWITCHGEAR
PALOMAR ENERGY CENTER
(O1-AFC-24C)**

DOCKET 01-AFC-24C
DATE _____
RECD. <u>AUG 16 2010</u>

By:

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

Submitted to:

CALIFORNIA ENERGY COMMISSION

AUGUST 2010

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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 Palomar Energy Center (Palomar), 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 make improvements to the reliability of the plant and install an addition Load Commutator Inverter (LCI) and associated switchgear. The LCI converts grid supplied electricity to a voltage and frequency which allows the plant's electrical generator to be used as a motor to start the combustion turbine. The two GE 7FA combustion turbines at Palomar currently share a single Load Commutator Inverter used to start the two turbines. This configuration creates a number of potential single point failure modes that could keep the plant from restarting. Failure of any component within the LCI, the breaker or transformer supplying the LCI, the 4160 V bus that supplies the LCI, or any of the cable or protection devices could potentially create the inability to start either of the combustion turbines. The LCI and transformer are very long lead time items. Failure of these components could lead to plant outages lasting many months while new parts are manufactured, delivered and installed. Adding a second LCI will significantly reduce this risk. Adding the second set of equipment has no effect on plant emissions and does not require a change in any Condition of Certification or Verification.

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

No changes to existing Conditions of Certification are proposed. Further details of the proposed reliability upgrade are as follows:

The LCI will be installed in a new prefabricated module, as there is no excess room available in any of the current buildings. Switches will be installed that allow either of the two LCIs to be lined up to either combustion turbine. This provides 100% redundancy, allowing either LCI to start up the whole plant. Switches will also be installed that allow maintenance of either LCI or transformer while the whole plant is on line. This reduces outage requirements to do maintenance, thus increasing plant availability.

The new LCI transformer with foundation and containment will be located directly north of the existing LCI transformer. The new switchgear module will be located directly north of the new LCI transformer, to the east of the Unit 2 GSU. See Appendix 1 for a revised site plan showing the location of the new equipment. Space between the GSU and new equipment will be maintained for access to the generator and removal of the generator rotor for maintenance. The new LCI hardware will be installed in a small walk-in module built above the switchgear module. Stairs and platforms for the new LCI module are part of the project. Previous excavation, backfill and compaction took place during plant construction in the area where the new equipment is to be installed.

The new equipment will be painted the plant color (SW 1022 Cubist grey) and will not be visible from off site. Visual simulations are also attached in Appendix 1. The equipment will be stacked in two small enclosures, the largest of which will measure approximately 8 x 20 feet. The top of the new equipment will be approximately 25 feet high, lower than the adjacent air intake structures. None of the new equipment will generate noise. There are no hazardous chemicals associated with the new equipment. The new transformer will contain a small amount of transformer oil (no PCB's). The new

equipment will not change the output or efficiency of the plant. No new air emissions are associated with the new equipment.

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

Palomar is an important asset for SDG&E to provide electricity within the northern San Diego load pocket, not dependent upon the availability of outside transmission. Adding an additional LCI is necessary to improve overall reliability for the SDG&E system. Palomar has been declared a NERC Critical Asset due to its indispensable role in system restoration or black start of the grid. The ability to restart Palomar after a system disturbance or outage is extremely important. If only one LCI is available to restart the plant, and it is unable to restart the turbines due to the failure of one of many single point failure modes, then Palomar will be unable to perform its critical grid restoration function. In addition, Palomar is a highly cyclic plant because of its ability to quickly and efficiently shut down and re-start due to the fluctuating nature of the rapidly growing renewables inventory. Palomar starts each combustion turbine well in excess of 100 times per year to meet the essential load requirements of the San Diego area system. It is essential that a reliable LCI system with robust redundancy is available to insure the continued reliability of the plant.

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

SDG&E assumed ownership of Palomar about three years after issuance of the Final Decision and certification to Palomar Energy, LLC. Since taking ownership of the plant in 2006, SDG&E has continued to review the engineering and design of the plant 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 LCI 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.

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

TECHNICAL AREA	SIGNIFICANT ENVIRONMENTAL IMPACT (Y/N)?		NOTES
AIR QUALITY		N	no change
CULTURAL RESOURCES		N	Area for construction is prior filled area
EFFICIENCY		N	No impact
GEOLOGICAL HAZARDS		N	No change
HAZARDOUS MATERIALS HANDLING		N	No change

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TECHNICAL AREA	SIGNIFICANT ENVIRONMENTAL IMPACT (Y/N)?		NOTES
LAND USE		N	No change
NOISE		N	No Change
PALEONTOLOGICAL RESOURCES		N	Area for construction is prior filled area
BIOLOGICAL RESOURCES		N	Area previously disturbed.
PUBLIC HEALTH		N	no change
RELIABILITY		N	Will improve 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		N	No change

TECHNICAL AREA	SIGNIFICANT ENVIRONMENTAL IMPACT (Y/N)?		NOTES
SYSTEM ENGINEERING			
VISUAL RESOURCES		N	Structures will meet painting and visual requirements of Final Decision; See plot plan and visual simulations in Appendix 1. Structures not visible off site.
WASTE MANAGEMENT		N	No change
WATER RESOURCES		N	No change
WORKER SAFETY		N	No change

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.

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

The requested modification will not have any 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 Palomar's Final Decision will not 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 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,

Taylor O. Miller
Counsel to SDG&E

Dated: August 13, 2010

APPENDIX 1

**SITE PLAN AND
VISUAL SIMULATIONS**

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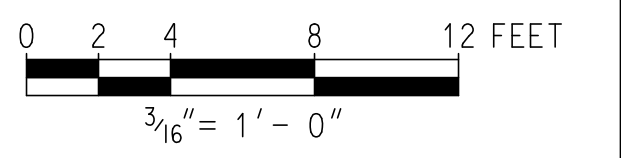
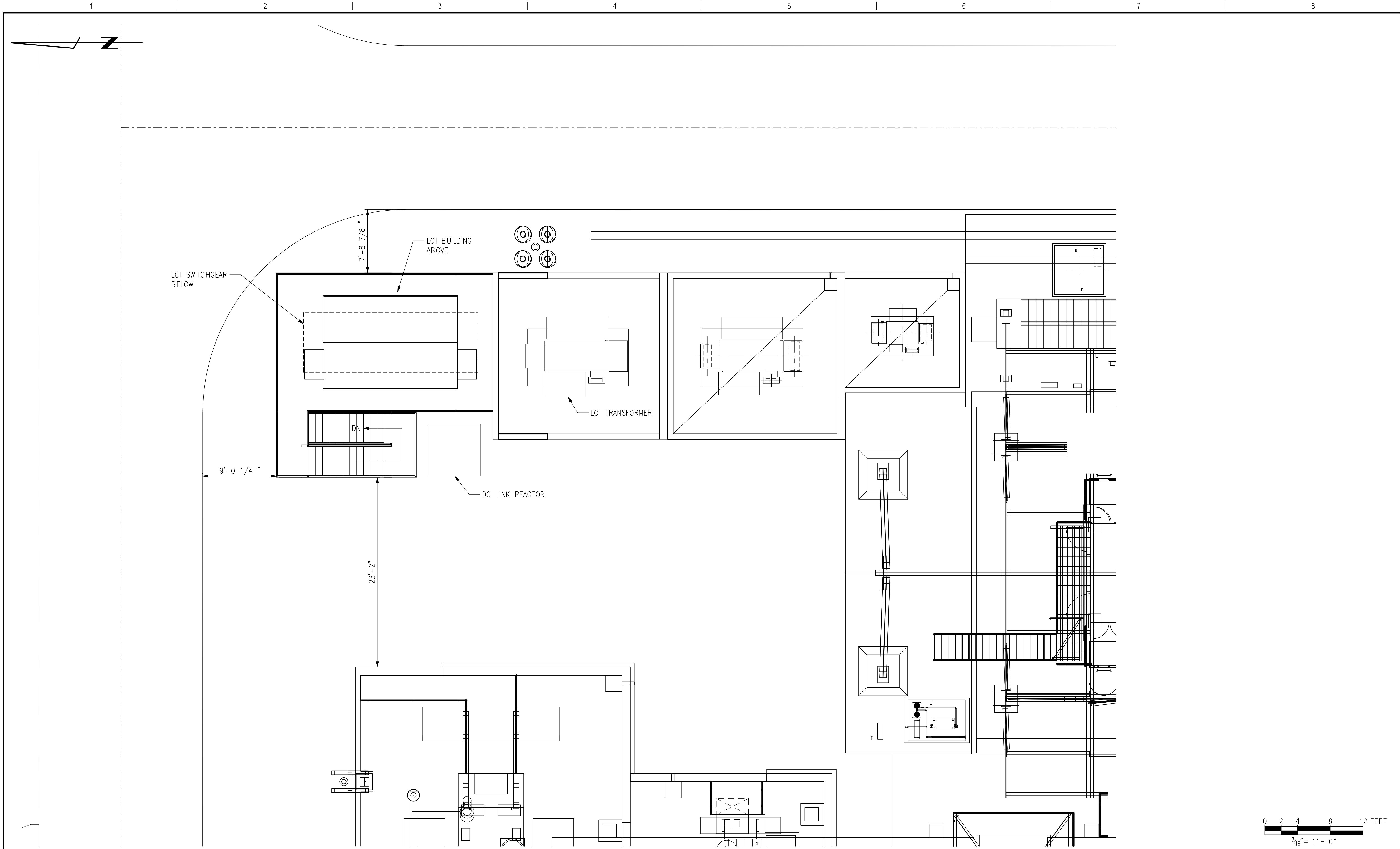
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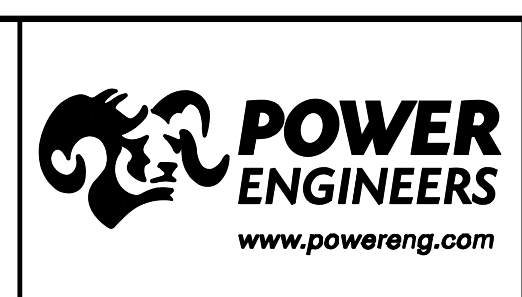


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INTER-DISCIPLINE REVIEW							
DISC	ARCH	CIVIL	ELECT	HVAC	I&C	MECH	STRUCT
DATE							
INIT							

REV	ISSUED FOR REVIEW	DATE	DRN	DSGN	CKD	APPD
A	ISSUED FOR REVIEW	07/29/10	DW	SA	BT	DC

DSGN	SA	07/26/10
DRN	DW	07/27/10
CKD	BT	07/27/10
SCALE: 3/16"=1'-0"		
FOR 22x34 DWG ONLY		



SEMPRA ENERGY RESOURCES, LLC
 PALOMAR ENERGY PROJECT
 ESCONDIDO, CALIFORNIA
 CONCEPTUAL LAYOUT

JOB NUMBER	REV
120404	A
DRAWING NUMBER	ESK1-1



Existing Condition



Simulated Condition



