

## PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3298



October 26, 2021

GA2021-06PE

Carl S. La Peter, Plant Manager  
Palomar Energy Center  
2300 Harveson Place  
Escondido, CA 92029

SUBJECT: Audit of Palomar Energy Center

Mr. La Peter:

On behalf of Electric Safety and Reliability Branch (ESRB) of the California Public Utilities Commission (CPUC), Saimon Islam, Stacey Ocampo and Kyle King of my staff conducted a power plant audit of Palomar Energy Center from June 21, 2021 through June 25, 2021.

During the audit, my staff observed plant operations, inspected equipment, reviewed data, interviewed plant staff, and identified violations of General Order (GO) 167-B. A copy of the audit findings itemizing the violations is enclosed. Please advise me no later than November 26, 2021, by electronic or hard copy, of all corrective measures taken by Palomar Energy Center to remedy and prevent the recurrence of such violations. Your response should include a Corrective Action Plan with a description and completion date of each action and measure completed.

If you have any questions concerning this audit, you can contact Saimon Islam at [Saimon.Islam@cpuc.ca.gov](mailto:Saimon.Islam@cpuc.ca.gov) or (213) 326-2600.

Sincerely,

A handwritten signature in blue ink that reads "Fadi Daye".

Fadi Daye, P.E.  
Program and Project Supervisor  
Electric Safety and Reliability Branch  
Safety and Enforcement Division  
California Public Utilities Commission

Attachment: Findings

Cc: Lee Palmer, Director, Safety and Enforcement Division, CPUC  
Nika Kjetsli, Program Manager, ESRB, CPUC  
Majed Ibrahim, Senior Utilities Engineer, ESRB, CPUC  
Saimon Islam, Utilities Engineer, ESRB, CPUC

## I. Findings Requiring Corrective Action

### Finding No. 1: ESRB Inspectors witnessed poor housekeeping in the chemical storage area

**GO 167-B, Appendix E, Operation Standard 8: Plant Status and Configuration** states:

*Station activities are effectively managed, so plant status and configuration are maintained to support safe, reliable and efficient operation.*

ESRB Staff observed loose pipes and empty buckets kept inside the chemical storage cabinet. Wooden blocks and chemical drum holders were kept at the entrance which can result in a tripping hazard. A piece of equipment used for the cooling tower was kept inside the chemical storage area. As per NFPA 30: Flammable and Combustible Liquids Code - the chemical storage area is solely for the storage of hazardous chemicals. The equipment should be kept in the warehouse or other places.



*Loose pipes, empty buckets kept inside the chemical cabinet*



*Equipment kept inside chemical storage area*



*Chemical drum holders at the entrance of the chemical storage room*

**Finding No. 2: ESRB Inspectors witnessed leaking condenser vacuum pump and leaking condenser water-box vent valve.**

**GO 167-B, Appendix D, Maintenance Standard 9: Conduct of Maintenance** states:

*Maintenance is conducted in an effective and efficient manner, so equipment performance and material condition effectively support reliable plant operation.*

**GO 167, Appendix E, Operation Standard 8: Plant Status and Configuration** states:

*Station activities are effectively managed, so plant status and configuration are maintained to support safe, reliable and efficient operation.*

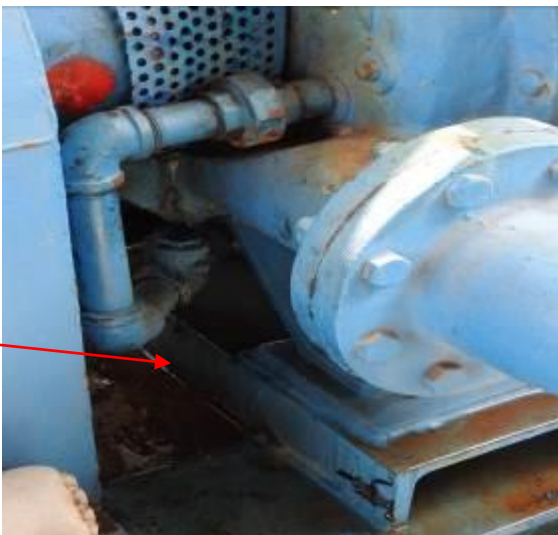
ESRB Staff observed leakage of the condenser vacuum pump, which is a slipping hazard. The staff also observed leakage from the condenser water-box vent valve which was not documented or addressed by the plant.



*Standing Water*



*Leaking condenser water-box vent valve*



*Leakage from vacuum pump*

**Finding 3: The hazardous materials storage shed lacks proper NFPA 704 “Hazardous Materials Storage” sign.**

GO 167-B, Appendix E, Operation Standard 10: Environmental Regulatory Requirements states in part:

*Environmental regulatory compliance is paramount in the operation of the generating asset.*

NFPA 704: 4.3 Location of Signs states:

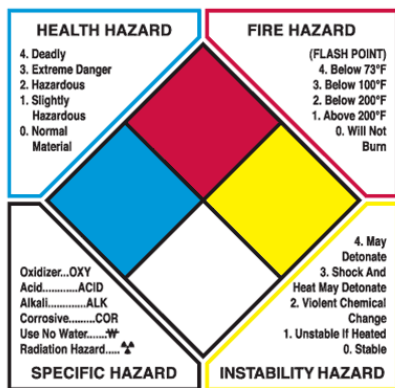
*Signs shall be in locations approved by the authority having jurisdiction and as a minimum shall be posted at the following locations:*

- 1) Two exterior walls or enclosures containing a means of access to a building or facility.
- 2) Each access to a room or area.
- 3) Each principal means of access to an exterior storage area.”

ESRB Staff observed the chemical storage shed lacks proper NFPA sign. (i.e., the fire diamond sign.)



No NFPA signage on the hazardous material storage shed



NFPA Fire diamond sign (just for reference)

**Finding No. 4: ESRB Staff observed several areas in the plant where damaged insulation is evident**

**GO 167-B, Appendix D, Maintenance Standard 9: Conduct of Maintenance, states:**

*Maintenance is conducted in an effective and efficient manner, so equipment performance and materiel condition effectively support reliable plant operation.*

ESRB Staff observed several areas in the plant where damaged insulation is evident. The plant personnel had stepped on the insulation despite having a ‘Do Not Step’ sign. Insulation and cowlings on IP Steam Turbine Combined Reheat and Intercept Valve # 1 and # 2 were damaged.





*Damaged insulation and cowlings in the IP Steam Turbine Combined Reheat and Intercept Valve*

**Finding No. 5: The Plant is not keeping pace with sign deterioration.**

**GO 167-B, Appendix D, Maintenance Standard 9: Conduct of Maintenance, states:**

*Maintenance is conducted in an effective and efficient manner, so equipment performance and materiel condition effectively support reliable plant operation.*

ESRB Staff observed several safety labels and signs that were damaged beyond recognition. These signs are important for the safety of the employees, and they make them aware of the surroundings and any potential safety hazard. For example- confined space sign indicates the danger and requires special permit to enter the confined space.



*Caution sign for the step are worn out*



*Faded confined space warning sign*



*Faded Danger sign for High Voltage*

**Finding 06: Missing NFPA Placard on main gate.**

**GO 167-B, Appendix E, Operation Standard 10: Environmental Regulatory Requirements** states in part:

*Environmental regulatory compliance is paramount in the operation of the generating asset.*

**NFPA 704: 4.3 Location of Signs** states:

*Signs shall be in locations approved by the authority having jurisdiction and as a minimum shall be posted at the following locations:*

- 1) Two exterior walls or enclosures containing a means of access to a building or facility.*
- 2) Each access to a room or area.*
- 3) Each principal means of access to an exterior storage area.”*

ESRB observed that the Plant’s main gate did not have a National Fire Protection Association (NFPA) 704 warning placard. The Plant stockpiles and uses hazardous chemicals as part of its normal operation. NFPA 704 is a standard system for identifying hazards of materials for emergency response. The posting of an NFPA placard on the main gate is a common industry practice so first responders can quickly and easily identify the risks posed by a facility’s hazardous materials. This helps emergency personnel to determine what safety gear and precautions to use and how best to respond in emergencies.



*Missing NFPA Placard on the main gate.*

**Finding No. 7: ESRB Inspectors witnessed poor general housekeeping in the plant**

**GO 167-B, Appendix D, Maintenance Standard 9: Conduct of Maintenance**, states:

*Maintenance is conducted in an effective and efficient manner, so equipment performance and materiel condition effectively support reliable plant operation.*

ESRB staff observed poor housekeeping around the plant. Abandoned nuts and bolts were found near the cooling tower. Hoses were kept on the ground which could be a tripping hazard and abandoned insulation covers were found in several areas of the plant.



*Abandoned nuts and bolts near cooling tower area*



*Hoses on the ground*



*Abandoned insulation cover*



**Finding No. 8: ESRB Inspectors found two defective pressure gauges**

**GO 167-B, Appendix D, Maintenance Standard 9: Conduct of Maintenance**, states:

*Maintenance is conducted in an effective and efficient manner, so equipment performance and materiel condition effectively support reliable plant operation.*

ESRB staff observed two defective pressure gauges. One had water deposition inside resulting from a broken seal and the other was missing a glass cover. Defective pressure gauges can result in erroneous pressure readings.



*Pressure gauge missing the glass cover*



*Water deposition inside the Pressure gauge*

## II. Documents Reviewed

ESRB Staff reviewed the following records and documents:

(\*\* documents were not provided during the time the audit was conducted\*\*)

### Safety

- 1 Orientation Program for Visitors and Contractors
- 2 Evacuation Procedure
- 3 Evacuation Map and Plant Layout
- 4 Evacuation Drill Report & Critique (last 3 years)
- 5 Hazmat Handling Procedure
- 6 MSDS for All Hazardous Chemicals
- 7 Injury & Illness Prevention Plan (IIPP)
- 8 OSHA Form 300 (Injury Log) in last 4 years (Contract and Plant)
- 9 \*\*OSHA Form 301 (Incident Report) in the last 4 years\*\*
- 10 Extinguisher Monthly Log
- 11 Root Cause Analysis
- 12 Fire Sprinklers Test Report (last 3 years)
- 13 Insurance Report / Loss Prevention / Risk Survey (last 3 years)
- 14 Lockout / Tagout Procedure
- 15 Arcflash Analysis
- 16 Confined Space Entry Procedure
- 17 Plant Physical Security and Cyber Security Procedures and Records
- 18 Fire Protection System Inspection Record
- 19 Job Safety Analysis Program
- 20 SPCC Location Map
- 21 SPCC Inventory List

### Training

- 21 Safety Training Records
- 22 Skill-related Training Records
- 23 Certifications for Welders, Forklift & Crane Operators
- 24 Hazmat Training and Record

### Contractor Management

- 25 Latest list of Qualified Contractors
- 26 \*\*Contractor Selection / Qualifications Procedure\*\*
- 27 Contractor Certification Records
- 28 Contractor Monitoring Program

### Regulatory Compliance

- 29 Daily CEMS Calibration Records
- 30 Air Permit
- 31 Water Permit
- 32 Spill Prevention Control Plan (SPCC)
- 33 California Accidental Release Plan & Risk Management Plan (RMP)
- 34 Relative Accuracy Test Audit Results (past 5 years)
- 35 Hazardous Waste Transfer Manifests (past 5 years)

### Operations and Maintenance (O&M)

- 36 Daily Round Sheets / Checklists
- 37 Feedwater Grab-sample Test Records
- 38 Water Chemistry Manual

- 39 Logbook
- 40 Fire Water Tank ROV Work Order
  - Fire Water Tank Pipe Repair Work Order
- 41 \*\*List of Closed / Retired Work Orders (last 4 quarters) \*\*
- 42 \*\*Work Orders Management Procedure (last 3 revisions)\*\*
- 43 Computerized Maintenance Management System (Demonstrated)
- 44 All Equipment Failure Root Cause Analyses

#### Gas Turbine (GT)

- 45 Borescope Inspection Reports (last 2 years)
- 46 Maintenance & Inspection Procedures (or Related Documents) (last 3 revisions, if applicable)
- 47 Combustors Inspection (CI) Reports
- 48 Hot Gas Path (HGI) Inspection Reports
- 49 Bearing Lube Oil Analysis Reports
- 50 DC Lube Oil Pump Test Records
- 51 Over-speed Trip Test Records

#### Compressors

- 52 Inspection Procedures and Records
- 53 \*\*P&IDs \*\*
- 54 Vendor Manuals

#### Spare Parts

- 55 Shelf life inventory (TBD)
- 56 Inventory List (TBD)

#### Employee Management

- 57 Organizational Chart
- 58 \*\*Employee Performance Review Procedures and Verifications\*\*

#### High Energy Piping (HEP)

- 64 FAC Inspection Procedure & Measurements
- 65 \*\*Corrosion Under Insulation Inspection Program\*\*
- 66 Pipe Hangers / Support Calibration Records

#### Steam Turbine (ST)

- 67 \*\* NDE Reports\*\*
- 68 Over-speed Trip Test Records
- 69 Bearing Lube Oil Analysis Reports
- 70 DC Lube Oil Pump Test Records
- 71 Emergency Stop Valve Test Records on Main Steam Line
- 72 Borescope Inspection Records
- 73 Most recent Major/Minor STG inspection reports

#### Generators

- 74 Bearing Lube Oil Analysis
- 75 Maintenance & Inspection Procedures
- 76 \*\* Polarization Test Records\*\*

#### Transformers

- 77 Hot Spots / IR Inspection Reports
- 78 Oil Analysis Reports

Cathodic Protection

79 Procedures and Inspection Records

Instrumentation

83 Instrument Calibration Procedures (TBD)

Test Equipment

84 Calibration Procedures and Records (TBD)

Emission Control System

85 Maintenance & Inspection Procedures and Records (SCR & CO Catalyst)

86 Constant Emission Control System Maintenance & Test Records

87 Relative Accuracy Test Audits (last five years)

Internal Audit

88 \*\* Internal Audit Procedures and Records\*\*