PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

August 19, 2022 GA2022-09NCA

Paul Mattesich
Plant Manager
Carlsbad Energy LLC (NRG Center INC)
4950 Avenida Encinas
Carlsbad, CA 92008

SUBJECT: Audit report of Carlsbad Energy Center

Mr. Mattesich:

On behalf of Electric Safety and Reliability Branch (ESRB) of the California Public Utilities Commission (CPUC), Richard Le of my staff conducted a power plant audit of the Carlsbad Energy Center from July 11, 2022 to July 15, 2022.

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 September 19, 2022, by electronic or hard copy, of all corrective measures taken by the Carlsbad 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 wish to make a claim of confidentiality covering any of the information in the report, you may submit a confidentiality request pursuant to Section 15.4 of GO 167-B, using the heading "General Order 167-B Confidentiality Claim". The request should be sent to Richard Le with a copy to me and the GO 167-B inbox GO167@cpuc.ca.gov by September 19, 2022.

If you have any questions concerning this audit, you can contact Richard Le at Richard.Le@cpuc.ca.gov or (213) 999-9053.

Sincerely,

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 Kjensli, Program Manager, ESRB, CPUC
Majed Ibrahim, Senior Utilities Engineer, ESRB, CPUC
Richard Le, Utilities Engineer, ESRB, CPUC

I. Findings Requiring Corrective Action

Finding No. 01: The Plant is not keeping pace with sign damage and 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 material condition effectively support reliable plant operation.*

ESRB staff observed faded danger signs of lock-out tag-out procedures. Damaged warning signs prevent plant staff and contractors from recognizing dangers while conducting work.

Faded danger sign on unit 9 near the turbine compartment

Faded danger sign on unit 7 near the turbine compartment

Finding 02: Missing NFPA (Fire diamond) sign on hazardous waste storage

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 found a hazardous waste storage for used oil in the fuel gas compressor area missing an NFPA sign (the fire diamond). The numbers in the diamond provide critical information related to hazards to plant staff, contractors, and emergency personnel.

Used oil storage without an NFPA sign (fire diamond)

Another used oil storage in the fuel gas compressor area with an NFPA Fire diamond (For reference only)

Finding 03: ESRB staff witnessed leakage from equipment and standing waters in different areas of 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 material condition effectively support reliable plant operation.*

ESRB staff witnessed standing water and evidence of leaking water and oil from plant equipment. Leaks are an indication of either a lack of maintenance or damaged equipment, while standing water poses a tripping hazard.

Leak from a valve on the evaporative cooling piping for unit 10

Evidence of a leak from a bolt on the gas compressor on Compressor A.

Leak from a reclaimed water pump near the reclaimed water tank.

Evidence of a leak and standing water under the turbine compartment of unit 9.

Leak from the shower station by unit 9 and standing water.

Evidence of a leak under the power turbine/generator compartment on unit 8.

Standing water in the turbine compartment on unit 6

II. Documents Reviewed

ESRB Staff reviewed the following records and documents:
(**documents were reviewed on site during the audit)

Safety

1. Orientation Program for Visitors and Contractors
2. Evacuation Procedure
3. Evacuation Map & Plant Layout
4. Evacuation Drill Report & Critique
5. Hazmat Handling Procedure
6. MSDS for All Hazardous Chemicals**
7. Injury & Illness Prevention Plan (IIPP) (last 3 years)
8. OSHA Form 300 (Injury Log) in last 4 years
9. OSHA Form 301 (Incident Report) in last 4 years
10. List of all CPUC Reportable Incidents (last 5 years)
11. Root Cause Analysis of all Reportable Incidents
12. Fire Sprinkler Test Report (last 3 years)
13. Insurance Report / Loss Prevention / Risk Survey (last 3 years)
14. Lockout / Tagout Procedure
15. Arc flash Analysis
16. Confined Space Entry Procedure
17. Plant Physical Security and Cyber Security Procedures and Records
18. Fire Protection System Inspection Record

Training

19. Safety Training Records
20. Skill-related Training Records
21. Certifications for Welders, Forklift & Crane Operators
22. Hazmat Training and Record

Contractor Management

23. Latest list of Qualified Contractors
24. Contractor Selection / Qualification Procedure
25. Contractor Certification Records

Regulatory Compliance

26. Daily CEMS Calibration Records
27. Air Permit
28. Water Permit
29. Spill Prevention Control Plan (SPCC)
30. CalARP Risk Management Plan

Operations and Maintenance (O&M)

31. Daily Round Sheets / Checklists
32. Water Chemistry Manual
33. Logbook**
34. List of Open/Backlogged Work Orders**

35. List of Closed/Retired Work Orders (last 4 quarters)
36. Work Order Management Procedure (last 3 revisions, if applicable)
37. Computerized Maintenance Management System (Demonstration Onsite)**
38. FAC Inspection Procedure & Measurements

Turbine

39. Borescope Inspection Reports
40. Maintenance & Inspection Procedures (or Related Documents) (last 3 revisions, if applicable)
41. Intercooler Inspection Reports
42. Combustors Inspection (CI) Reports
43. Hot Gas Path (HGI) Inspection Reports
44. Bearing Lube Oil Analysis
45. DC Lube Oil Pump Test Record

Compressor

46. Inspection Procedures and Records

Documents

47. P&IDs
48. Vendor Manuals

Spare Parts

49. Spare Parts Inventory List

Management

50. Organizational chart

Generator

51. Bearing Lube Oil Analysis
52. Maintenance & Inspection Procedures (or related documents)
53. Polarization Test Records

Transformer

54. Oil Analysis Reports

Cathodic Protection

55. Procedures and Inspection Records

Cooling

56. Cooling Fans & Motors Inspection Records
57. Circulating Water Pumps Maintenance Records

Instrumentation

58. Instrument Calibration Procedures and Records

Emission Control Equipment

59. Maintenance & Inspection Procedures and Records

Internal Audit

60. Internal Audit Procedures and all Records