

**BEFORE THE HEARING BOARD OF
THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

In the Matter of	)	Case No. 1263-77
	)	
LOS ANGELES DEPARTMENT OF WATER AND POWER	)	
	)	
Order Granting a Regular Variance	)	
	)	
Section 42350 and 40501.3(b) of the California Health and Safety Code	)	
	)	
Facility ID 800170	)	

FINDINGS AND DECISION OF THE HEARING BOARD
[PROPOSED]

This petition for a regular variance was heard on the Hearing Board's Consent Calendar on **March 23, 2023** pursuant to notice and in accordance with the provisions of California Health and Safety Code Section 40825. The following members of the Hearing Board were present: Cynthia Verdugo-Peralta, Chair; Robert Pearman, Esq., Vice Chair; Micah Ali; Mohan Balagopalan; and Allan Bernstein, DPM, MBA. Petitioner, the City of Los Angeles by and through the Los Angeles Department of Water and Power ("Petitioner"), was represented by Tina Shim, Deputy City Attorney. Respondent, Executive Officer ("Respondent"), was represented by, Brian Tomasovic, Principal Deputy District Counsel. The joint Stipulation to Place Matter on Consent Calendar, the Declaration of Robert Painter, and the Proposed Findings and Decision were received as evidence, and the case submitted. The public was given an opportunity to testify. The Hearing Board finds and decides as follows:

Nature of Business and Location of Facilities

Petitioner, LADWP is the largest municipal utility in the nation and supplies water and electric services to 3.8 million residents and businesses in the City of Los Angeles. As a vertically integrated power system, LADWP both owns and operates the majority of its generation, transmission, and distribution systems. A five-member Board of Water & Power Commissioners is appointed by the Mayor and establishes policy.

As part of its operations, LADWP owns and operates Harbor Generating Station (Harbor), a natural gas-fired steam electric generating facility located in Wilmington. Harbor has a generating capacity of 450 megawatts, enough to power approximately 350,000 - 400,000 homes.

Equipment and Permit to Operate

Harbor currently operates two combined-cycle units (Units 1 and 2), and five simple cycle units (Units 10-14). Harbor, including all of the above-described units, is subject to RECLAIM and Title V permitting.

SUMMARY

Harbor Unit 14, which is the subject of this Petition, is a 47.4 MW natural gas-fired simple cycle combustion turbine equipped with a Selective Catalytic Reduction (SCR) system and a carbon monoxide (CO) oxidation catalyst to control NO_x and CO. Unit 14 was commissioned in 2001 and its emissions are monitored by a Continuous Emissions Monitoring System (CEMS) which monitors and records flue gas pollutant and diluent gas on a dry basis. The CEMS for Unit 14 was certified by the South Coast Air Quality Management District (SCAQMD) and the United States Environmental Protection Agency (EPA) in 2001.

Petitioner's permit to operate and SCAQMD rules require Petitioner to conduct a CO Relative Accuracy Test Audit ("RATA") and ammonia slip source test for Unit 14 CEMS on an annual basis. Petitioner is required to complete a CO RATA and an ammonia slip source test for the Unit 14 CEMS by March 31, 2023 and December 31, 2023 respectively.

On March 21, 2022, Harbor Unit 14 was operating close to full generation capacity when it stalled. Petitioner conducted a borescope inspection of Unit 14 along with representatives from the turbine manufacturer, General Electric (GE) Power Systems. After careful research and review, Petitioner has determined that Unit 14 supercore had a catastrophic event when a stage 4 blade in the high pressure compressor broke off and caused extensive damage as it disintegrated and traveled downstream into the engine.

Unit 14's supercore is the main "core" engine of GE's LM6000 gas turbine and is the most fundamental and necessary part of power generation. The supercore consists of a High Pressure Compressor, the combustor, and High Pressure Turbine. The supercore's function is to compress inlet air, mix it with fuel gas, combust the air-gas mixture, and finally exhaust the resulting hot gas after combustion. This exhaust hot gas then drives the High Pressure Compressor (HPC), which in turn forces the Low Pressure Compressor (LPC) in front of the supercore, which then powers the Power Turbine that drives the generator to make electricity.

Petitioner's determination regarding the catastrophic failure of Unit 14's supercore is supported by the Borescope Inspection Report and visual inspections of the machinery, which have demonstrated that damage can be seen in the HPC starting from stages 3 and downstream, along with impact damage to the High Pressure Turbine and the Power Turbine.

GE's LM6000 gas turbine was designed with a modular supercore or main engine. This means that the supercore part was designed to be removable and replaceable, because the

supercore is where inlet air is at its highest pressure point (~575-580psi) and where combustion occurs, therefore it is where the most stress and damage can happen. This modular design was intended to allow for an extracted supercore to be sent off for maintenance, while a spare supercore could be installed and the unit restored back to service. Unfortunately, the damage extended beyond the supercore and the Power Turbine was also damaged. Due to this damage, a supercore swap was not possible and the entire engine needed to be sent to a GE Service Center in Houston for disassembly and repair.

GE has informed Petitioner that the full engine will not be completed and delivered until September 2023. Due to the specialized nature of the repairs needed, Petitioner is unable to perform the repairs or commission any other company to perform the repairs. Petitioner is required to send the parts to a GE Power Systems facility and has to abide by their repair schedule. Due to GE's schedule to perform repairs necessary to bring Unit 14 back online, the CO RATA and ammonia slip source tests cannot be performed by their respective due dates.

FINDINGS OF FACT AND CONCLUSIONS

The following are the facts and conclusions supporting the findings set forth in Health and Safety Code Section 42352 necessary to grant the regular variance. The Executive Officer did not oppose the granting of the variance.

- a. **The petitioner for a variance is or will be in violation of Section 41701 or of any rule, regulation, or order of the District.**

Petitioner will be in violation of District Rules 3002(c)(1); 203(b); 2004(f)(1); 218(b)(2); 218.1(b)(4)(C), Conditions D29.2; D82.2; Administrative Condition E.2 of Petitioner's Permit to Operate.

1. Rule 3002(c)(1) requires "A person shall construct and operate a Title V facility and all equipment located at a Title V facility in compliance with all terms, requirements, and conditions specified in the Title V permit at all times." The annual CO Relative Accuracy Test Audit (RATA) is due on March 31, 2023 and ammonia source test is due on December 31, 2023. If both tests are not performed by the due dates, any subsequent operation of Unit 14 will not be in compliance with the conditions of the Title V permit.
2. Rule 203(b) requires "The equipment shall not be operated contrary to the conditions specified in the permit to operate." The annual CO Relative RATA is due on March 31, 2023 and ammonia source test is due on December 31, 2023. If both tests are not performed by the due date, any subsequent operation of Unit 14 will not be in compliance with the conditions of the Title V permit.
3. Rule 2004(f)(1) requires "The Facility Permit holder shall, at all times, comply with all rules and permit conditions applicable to the facility, as specified in the Facility Permit." The annual CO RATA is due on March 31, 2023 and the ammonia source test is due on December 31, 2023. If both tests are not performed by the due date, any subsequent operation of Unit 14 will not be in compliance with the conditions of the Title V permit.
4. Rule 218 (b)(2) requires "The owner or operator of any equipment subject to this Rule shall provide, properly install, operate and maintain in calibration and good working order a certified CEMS to measure the concentration and/or emission rates, as applicable, of air contaminants and diluent gases, flow rates, and other required parameters. The owner or operator shall also provide the necessary records and other data necessary to calculate air contaminant emission rates or concentrations as specified in Rule 208 (e) and (f)." The annual CO RATA is due on March 31, 2023. If the RATA is not performed by the due date, any subsequent operation of Unit 14 will not be in compliance with this Rule section.

5. Rule 218.1(b)(4)(C) requires “RATA and RAA, as applicable, shall be performed at least once every 12 months. The test shall be completed annually no later than the end of the calendar quarter in which the date of the original certification test was performed.” The annual CO RATA is due on March 31, 2023. If the RATA is not performed by the due date, any subsequent operation of Unit 14 will not be in compliance with this Rule section.
6. Harbor Facility Permit to Operate Condition D29.2 requires that an ammonia test be conducted on natural gas once every calendar year. The test shall be conducted to determine the ammonia emissions at the outlet using District method 207.1 measured over a 60-minute averaging time period. The ammonia source test is due on December 31, 2023. If the test is not performed by the due date, any subsequent operation of Unit 14 will not be in compliance with the conditions of the Title V permit.
7. Harbor Facility Permit to Operate Condition D82.2 requires “The CEMS to be installed and operated in accordance with an approved AQMD Rule 218 CEMS plan application.” The annual CO RATA on the CEMS is due on March 31, 2023. If the RATA is not performed by the due date, any subsequent operation of Unit 14 will not be in compliance with the conditions of the Title V permit and the facility’s approved CEMS plan.
8. Harbor Facility Permit to Operate Administrative Section E.2 requires “Operator shall maintain all equipment in such a manner that ensures proper operation of equipment.” The annual CO RATA on the CEMS is due on March 31, 2023. If the RATA is not performed by the due date, any subsequent operation of Unit 14 will not be in compliance with the Administrative Section of the Title V permit.

b(l). Non-compliance with District Rule(s) is due to conditions beyond the reasonable control of the petitioner.

Petitioner always makes sure that Unit 14 completes its scheduled annual maintenance outages. The last maintenance, which was done from March 22, 2021 to April 25, 2021 consisted of a borescope inspection on the unit's supercore, in addition to routine repairs, repair of critical valves, piping systems, safety valves, inspection of the air pollution control equipment, generator, and replacement of filters and failed instrumentation components.

Even with the proper maintenance, the Petitioner did not expect Unit 14's supercore to fail on March 21, 2022. Unit 14 must have the ability to run again before the CO RATA and ammonia slip source test can be conducted. Comprehensive repairs are required and will not be completed in time to meet the March 31, 2023 and December 31, 2023 testing deadlines for the CO RATA and ammonia slip source test respectively. The supercore failure and the time and extent of the repairs necessary to bring Unit 14 back online are beyond the reasonable control of the Petitioner, hindering the Petitioner from meeting the testing deadlines.

b(2). Requiring compliance would result in either (1) an arbitrary or unreasonable taking of property, (2) the practical closing and elimination of a lawful business, or an unreasonable burden on an essential public service.

The permanent inability to operate Unit 14 would result in almost incalculable costs and potential hardship to the residents of the City of Los Angeles. Petitioner's ratepayers would ultimately bear the costs associated with the unit unavailability and the ensuing stress on Petitioner's ability to generate power.

Additionally, Petitioner's ratepayers would also bear the expense of any resulting fines and penalties if this variance is not granted. Although Unit 14 is now scheduled to be offline for repairs, Petitioner is required to operate and maintain the CEMS, pursuant to the AQMD Rules and Title V permit conditions listed in Item No. 9 of this petition. Thus, Petitioner could be subject to a Notice of

Violation for the entire duration that the CO RATA and ammonia slip source tests are not successfully performed. For a potential one-year time period, Petitioner could face a penalty of up to \$1,000/day or approximately \$365,000 for the entire period the tests have not been performed.

c. The closing or taking would be without a corresponding benefit in reducing air contaminants.

Due to unexpected failure of Unit 14's supercore and ensuing damage to other parts, Unit 14 has not been available to run since it stalled on March 21, 2022. Because of the extensive ongoing repairs, the unit will remain inoperable. Until the repair and reinstallation of Unit 14 is complete, there simply will be zero emissions from Unit 14. Requiring compliance and denying the variance, then, would be without a corresponding benefit in reducing air contaminants.

d. The petitioner for the variance has given consideration to curtailing operations of the source in lieu of obtaining a variance.

Unit 14's operations have been terminated since March 20, 2022. Because of the extensive ongoing repairs, the unit will remain inoperable throughout the duration of the variance. Even with operations temporarily terminated, Petitioner still recognizes that it requires a variance to obtain relief from the required CO RATA and ammonia slip source tests, which are due on March 31, 2023 and December 31, 2023 respectively.

e. During the period the variance is in effect, the petitioner will reduce excess emissions to the maximum extent possible.

Petitioner has given consideration to curtailment; Unit 14 is in fact currently out of service. However, petitioner would still require a variance as petitioner needs relief from the CO RATA and ammonia slip source tests, which are due on March 31, 2023 and December 31, 2023, respectively.

- f. **During the period the variance is in effect, the petitioner will monitor or otherwise quantify emission levels from the source, if requested to do so by the District, and report these emission levels to the District pursuant to a schedule established by the District.**

Petitioner will reduce excess emissions to the maximum extent feasible as Unit 14 is currently not operating and is out of service.

ORDER

THEREFORE, good cause appearing, the Hearing Board orders as follows:

- A. Petitioner is granted a regular variance from District Rules 203(b), 2004(f)(1), and 3002(c)(1) {from Permit Conditions D29.2 and D82.2 and Permit Section E.2 of Facility Permit to Operate ID No. 800170} and from Rules 218(b)(2), 218.1(b)(4)(c) for Combustion Turbine Unit 14, Device ID No. D125 for the period commencing March 31, 2023, and continuing through March 31, 2024, the final compliance date.
- B. The variance granted herein is subject to the following conditions:
1. Petitioner shall throughout the variance period until repairs have been completed and Unit 14 has been started:
 - a) keep all fuel feed lines to the unit either disconnected or opened, and either flanges or equivalent sealing devices placed at both ends of the disconnected or opened lines;
 - b) maintain and operate the fuel meter for the disconnected or opened fuel feed lines to the unit;
 - c) keep on site associated fuel records showing no fuel flow to the unit.
 2. Petitioner shall notify Inspector Paolo Longoni (plongoni@aqmd.gov) within 24 hours, or no later than the following business day, of:
 - a) receipt of the repaired supercore;
 - b) completion of repairs to Unit 14;
 - c) startup of Unit 14.

3. Petitioner shall perform the ammonia source test on or before December 31, 2023 if startup of Unit 14 occurs by November 14, 2023. If startup of Unit 14 occurs after November 14, 2023, Petitioner shall perform the ammonia source test by March 31, 2024 in order to satisfy the 2023 source test requirement only.
4. Petitioner shall notify Inspector Paolo Longoni (plongoni@aqmd.gov) at least 10 days in advance of the scheduled CO RATA and ammonia source test for Unit 14.
5. Petitioner shall notify the Clerk of the Hearing Board (clerkofboard@aqmd.gov) in writing and Paolo Longoni by email and by calling 1-800-CUT-SMOG (Attention: Air Quality Inspector Paolo Longoni) to report a *Variance Notification* within 24 hours, or no later than the following business day, of achieving final compliance after successfully completing the CO RATA and ammonia source test.

FOR THE BOARD: _____

DATE SIGNED: _____