

**BEFORE THE HEARING BOARD
OF THE
NORTH COAST UNIFIED AIR QUALITY MANAGEMENT DISTRICT**

**In the matter of the Petition for) No. 2020-02
Regular Variance) CONFIRMATION OF FINDINGS
by PG&E Company for HBGS) AND ORDER
) FOR REGULAR VARIANCE**

On July 10, 2020, pursuant to Health and Safety Code (HSC) § 42352 and District Regulation VI, Rule 606 of the North Coast Unified Air Quality Management District, a duly noticed petition for a regular variance submitted pursuant to HSC § 40826 by Pacific Gas and Electric Company (“PG&E”) (hereinafter referred to as “Petitioner”), came on for hearing by the North Coast Unified Air Quality Management District Hearing Board. The hearing was duly noticed and conducted via Zoom video teleconference by Board members Charles Rocklein (Chair of the Hearing Board), Joanna Hawley Jones, John Corbett, Ken Mierzwa, and Dr. Denver Nelson. Consistent with Executive Orders N-25-20 and N-29-20 from the Executive Department of the State of California and the Humboldt County Public Health Officer’s March 19, 2020, Shelter In-Place Order, the public and Board Members were able to participate and observe the hearing via Zoom video teleconference.

Petitioner was represented by Charles Holm, PG&E Humboldt Bay Generating System (HBGS) Plant Manager, and Ryan Messinger, HBGS Environmental Compliance Manager. The District was represented by Brian Wilson, Air Pollution Control Officer (APCO); Jason L. Davis, Deputy APCO and Permitting & Planning Division Manager; Al Steer, Compliance and Enforcement Division Manager; and Nancy Diamond, District General Counsel.

Representatives of the Petitioner, the District, and members of the public were sworn in and gave extensive public testimony concerning the requested variance. The District, and Petitioner were given the right of cross-examination and the public was given the opportunity to direct questions to both the Petitioner and the District.

The following documents and other evidentiary material were marked for identification and received into evidence.

- Exhibit 1: Notice of Public Hearing to be held on July 10, 2020;
- Exhibit 2: Petitioner’s Application for Hearing for a Regular Variance under HSC §42350(a);
- Exhibit 3: District Staff Report for Regular Variance Hearing on July 10, 2020;
- Exhibit 4: Title V Federal Operating Permit and District Permit to Operate No: NCU 059-12 for the PG&E HBGS (“Operating Permit”); and
- Exhibit 5: Recommended Variance Orders as modified on July 10, 2020.

Neither party offered an exhibit that was not received into evidence. After receiving evidence and testimony, findings and decision were made as follows:

FINDINGS

Based on the evidence and testimony, the following findings are made pursuant to HSC § 42352 and District Regulation VI, Rule 606 – Decisions:

1. Petitioner owns and operates the Humboldt Bay Generating System (“HBGS”), a power generation facility located at 1000 King Salmon Avenue, Eureka, California, under the terms and conditions of Title V Federal Operating Permit and District Permit to Operate No. NCU 059-12 (“Operating Permit”).
2. The Operating Permit requires operation of all ten Wartsila Dual Fuel reciprocating engines located at the HBGS to be operated at loads of 50% or more. Emission limitation conditions in the Operating Permit are based on the 50% operational engine load, and were established at the time the Operating Permit was first issued based on the engine manufacturer's guarantee. Deployment of this type of engine technology was new and no emissions profile for operations at lower loads was available or guaranteed by the manufacturer.
3. On December 14, 2019, the Hearing Board granted Petitioner an Interim Variance pursuant to HSC § 42351 and District Regulation VI, Rule 603, to conduct emissions testing while operating three of the ten Wartsila Dual Fuel reciprocating engines at loads lower than 50% (North Coast Unified Air Quality Management District Hearing Board Confirmation of Findings and Order No. 2019-01).
4. Petitioner performed emission testing as allowed under the terms of the Interim Variance from December 15-17, 2019 while operating under 50% load in accordance with the TRC Source Test Plan. NOx emissions during these tests indicated that the engines could potentially operate at low loads within NOx emission limitations with further tuning and ammonia modifications that were performed at higher loads.
5. On February 3, 2020, the Hearing Board granted Petitioner a short-term Regular Variance pursuant to HSC § 42352 and District Regulation VI, Rule 606 to conduct additional testing while operating three of the ten Wartsila Dual Fuel reciprocating engines at loads lower than 50%, and to test operation of the HBGS in island mode (North Coast Unified Air Quality Management District Hearing Board Confirmation of Findings and Order No. 2020-01). The short-term Regular Variance terminated on June 30, 2020.
6. Petitioner’s request to operate and test the HBGS engines at loads lower than 50% is part of its investigation into whether it can operate the HBGS in an island mode or as a black start unit to provide local power during emergency events that impact local electric power transmission lines, such as Public Safety Power Shutdown (PSPS) events, storms, etc. Under the terms of the short-term Regular Variance, Petitioner performed ammonia injection load point determination tests (completed April 2020) associated with the engines’ respective

lower operational loads and tested island operational mode (completed May 2020).

7. The results of testing and island mode operation during the Interim and short-term Regular Variances allowed Petitioner to obtain preliminary ammonia injection load point profiles for three of the ten engines operating at low electric service loads, and to confirm that island operation can be achieved. By using the ammonia injection load points data obtained during Variance testing, NOx emissions during low load operation were reduced to acceptable levels. Petitioner believes that additional testing to refine ammonia injection load points for engine operation at low electric service loads will further reduce NOx emissions during island operation.
8. On May 27, 2020, Petitioner submitted an application for variance to obtain relief from Operating Permit conditions and permit emission limitations for two purposes: i) to conduct engine tuning at low loads (less than 50%) in an attempt to improve engine operation and emissions during engine startups in island operations mode; and, ii) to operate the HBGS in island mode during emergency events, such as Public Safety Power Shutoff (PSPS) events/storm events, while seeking modification of the HBGS Operating Permit. Petitioner will submit an application to modify its Title V Operating Permit during the summer of 2020 to allow the HBGS to operate in island mode. The variance is sought for a period of up to one year or until a modified Title V Operating Permit is effective, whichever date is sooner.
9. Operation of the HBGS to serve local area electric power during PSPS and other emergency events serves the public health and safety by reducing private, retail, commercial, and governmental reliance on individual back-up generators, most of which are not controlled or monitored for air emissions.
10. Proposed additional testing during the term of the variance will cause insignificant air quality impacts.
11. The required findings identified under HSC § 42352 and District Regulation VI, Rule 606 have been satisfied based on the proposed findings in the District staff report at Exhibit 3 to the record of this hearing, and which are adopted herein. These findings are summarized as follows:
 - a. *That the petitioner is, or will be, in violation of a provision of the HSC or of any rule, regulation, or order of the District, including but not limited to, any permit condition.* Operation and/or engine tuning the HBGS at loads less than 50% would violate the following Operating Permit Conditions:
 - Condition #84 – diesel mode, no more than two units in startup during any one clock hour.
 - Condition #90 – gas mode, startup lbs/hr.
 - Condition #91 – gas mode, ppm, lbs/hr, and lbs/mmbtu.
 - Condition #92 – gas mode, daily emissions limits.
 - Condition #94 – diesel mode ppm, lbs/hr and lbs/mmbtu.
 - Condition #95 – DPM emissions limits, hourly and daily only.
 - Condition #96 – S-1 through S-10 daily emission limits in diesel mode.

- Condition #111 – S-1 through S-10 load less than 50%.
 - Condition #112 – engines not to run more than 80 hours per calendar day at loads less than 50%.
 - Condition #114 – catalyst pressure requirements.
 - Condition #115 – catalyst temperature requirements.
 - Condition #116 – CO reductions of greater than or equal to 70%.
- b. *That due to conditions beyond the reasonable control of the petitioner, requiring compliance would result in either a) an arbitrary or unreasonable taking of property, or b) the practical closing and elimination of a lawful business.* Petitioner's testing during the interim and regular variances indicates that it is able to operate the HBGS in island mode to provide electric power to portions of Humboldt County during local power outages caused by emergencies including PSPS and other emergency events, rather than remaining out of operation in shut down mode. If the variance is not granted, PG&E would be required to shut down the HBGS rather than support local load demand during such emergency events or operate in violation of Condition #111 (S-1 through S-10 load less than 50%) of the Operating Permit, with the potential to exceed other permit conditions as listed initially above and in their petition. An application to modify the Operating Permit to be able to operate during local power outages caused by PSPS and other emergency events will be submitted as part of variance.
- c. *That such closing or taking would be without a corresponding benefit in reducing air contaminants.* Discharges from the HBGS regulated through an Operating Permit are preferable to the unregulated emissions from hundreds or thousands of gas or diesel back-up generators operated throughout the region during PSPS and other electric power shutdown events.
- d. *That the applicant for the variance has given consideration to curtailing operations of the source in lieu of obtaining a variance.* Curtailing operations of the HBGS would not allow Petitioner to operate at the low load levels necessary to operate in island mode or as a black start unit to serve local area load, or to perform engine tuning at loads less than 50%.
- e. *During the period the variance is in effect, that the applicant will rescue excess emissions to the maximum extent feasible.* As part of this Order, Petitioner is required to i) continue adhere to all conditions in the Operating Permit, including the use of all Air Pollution Control systems (SCR, CO catalyst, etc.), and ii) adhere to all monitoring equipment and requirements (CEMS, etc.) to the maximum extent possible.
- f. *During the period the variance is in effect, that the applicant will monitor or otherwise quantify emissions levels from the source, if requested to do so by the District, and report these emissions levels to the District pursuant to a schedule established by the District.* As part of this Order, Petitioner will be required to quantify and report all monitoring data obtained during the period of the variance as part of the regular monitoring reporting.

ORDER

Based upon the above findings, Petitioner is granted a regular variance from the following conditions of the Operating Permit:

- Condition #84 – diesel mode, no more than two units in startup during any one clock hour.
- Condition #90 – gas and diesel mode, startup lbs/hr.
- Condition #91 – gas mode, ppm, lbs/hr, and lbs/mmbtu.
- Condition #92 – gas mode, daily emissions limits.
- Condition #94 – diesel mode ppm, lbs/hr and lbs/mmbtu.
- Condition #95 – DPM emissions limits, hourly and daily only.
- Condition #96 – S-1 through S-10 daily emission limits in diesel mode.
- Condition #109 – startup and shutdowns, limited to 30 engine hours/day
- Condition #111 – S-1 through S-10 load less than 50%.
- Condition #112 – engines not to run more than 80 hours per calendar day at loads less than 50%.
- Condition #114 – catalyst pressure requirements.
- Condition #115 – catalyst temperature requirements.
- Condition #116 – CO reductions of greater than or equal to 70%.

The period of this variance shall be governed by HSC § 42358(a), and shall expire no later than July 10, 2021. During the period of this variance, unless otherwise stated, the following shall apply:

1. The Petitioner is granted relief from the permit conditions and limitations of the Operating Permit as listed above at operational load levels less than 50%, in order to perform low load engine tuning in an attempt to improve engine operation and emissions during engine startups in island operations mode, and to allow the HBGS to operate in island mode during any upcoming emergency events such as Public Safety Power Shutoff (PSPS) events, while the permit modification is in process.
2. The relief granted by the variance will be limited to engine tuning and testing events, and emergency events requiring disconnection from the California Independent System Operator (CAISO) grid and operation in island mode, such as Public Safety Power Shutoff (PSPS) events.
3. The Petitioner shall use natural gas as the primary and preferred fuel source during operations in island mode to support local load demand during emergency events such as PSPS, but in the event that operating conditions warrant, distillate (diesel) fuel may be used in order to maintain engine reliability and to avoid damaging the engines or air pollution control systems. Examples of these conditions during natural gas operation may include, but are not limited to, overheating catalysts, synch back to parallel operation, cylinder issues, extreme load swings, etc.
4. The Petitioner shall conduct the low load engine tuning activities, where the total of engine tuning shall not exceed 44 hours, per the following assumptions and allowances:

- a) Proposal is for 4 hours of operation below 50% load for each engine.
 - b) There are 10 engines that will be tested (S-1 through S-10).
 - c) HBGS expects that the tuning activities would entail tuning 2 engines daily for 5 days.
 - d) Allowance for a 10% contingency (for 44 hours of total testing time allowed), because the schedule is completely dependent upon the CAISO and may need to be adjusted to account for grid load expectations.
5. The Petitioner shall continue to adhere to all conditions in the Operating Permit, and specifically continue to use all Air Pollution Control (APC) systems (SCR and CO catalyst, etc.) to the maximum extent possible during all low load testing and operation.
 6. The Petitioner shall continue to adhere to all regulatory monitoring requirements in the Operating Permit, specifically used of Continuous Emissions Monitoring (CEMS) during all low load tests and operation.
 7. Within thirty (30) days after the date of expiration of the variance, Petitioner shall prepare and submit a report of the emissions discharged that occurred as a result of relief obtained pursuant to the regular variance in accordance with District Rule 404(c) - Excess Emission Fee Schedule once the final results of the proposed testing are obtained. Payment of fees shall be made according to District Rule 404(c).
 8. This Variance shall expire on July 10, 2021 or on the effective date of a modified Title V Operating Permit, whichever is sooner.

SO ORDERED, on Motion made by Board member Corbett and seconded by Board member Nelson, effective July 10, 2020 and expiring July 9, 2021.

Ayes: Board members Rocklein, Samples, Corbett, Mierzwa and Nelson
Nays: None.

By: 
Charles Rocklein, Chairperson of the Hearing Board

Date: 8-18-20

ATTEST:

By: 
Heather Bitner, Clerk of the Hearing Board

Date: 8/18/20

Approved as to form:

PG&E

By: 
Charles Holm, HBGS Plant Manager

Date: 8/19/20

North Coast Unified Air Quality Management District

By: 
Brian Wilson, Air Pollution Control Officer

Date: 8/18/2020