

HBGS-ENV-168

May 27, 2020

Ms. Heather Bitner  
Executive Assistant and Clerk of the Board  
North Coast Unified Air Quality Management District  
707 L Street  
Eureka, California 95501

**RE: Request for Regular Variance Petition for Humboldt Bay Generating Station:**

Dear Ms. Bitner:

Pacific Gas and Electric Company, through the Humboldt Bay Generating Station (HBGS), is submitting this petition for a regular variance to allow HBGS to operate in Island Mode for the time period during which the permit application is prepared, submitted to and analyzed by the North Coast Unified Air Quality Management District (NCUAQMD) in order to support local load demand during emergency events such as PSPS events. Natural gas will be the primary and preferred fuel source during operations in island mode, but in the event that operating conditions warrant, distillate 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 be limited to, overheating catalyts, synch back to parallel operation, cylinder issues, extreme load swings, etc. Dependent upon the NCUAQMD and California Energy Commission (CEC) schedules, the timeline for the variance could last for the duration of a year. As soon as the permit and license amendment process have finished, the variance would no longer be necessary. HBGS currently expects to submit an application for permit modifications during the summer of 2020.

In an effort to further reduce NO<sub>x</sub> emissions, HBGS is also including low load engine tuning in the variance request. The previous low load ammonia injection load point establishment activities appear to have successfully lowered NO<sub>x</sub> emissions during operation at low loads, and HBGS believes that tuning the engines at low loads may reduce NO<sub>x</sub> emissions even further.

HBGS believes that good cause exists for the Hearing Board to grant this request for variance. Operation in Island Mode during emergency events allows HBGS to provide critical support for local communities while the permit application is being processed by the NCUAQMD. As evidenced during previous shutoffs, local power is critical to vital facilities and services such as hospitals, law enforcement, fire departments, and Health and Human Services, etc. HBGS is making every effort possible to reduce emissions during these operations and data collected during the previous activities conducted during variance indicates a low risk of excess emissions. HBGS respectfully requests that the Hearing Board consider this request for variance, finding good cause to grant the petition for a one-year period.

Should you have any questions or comments please do not hesitate to contact me at (707) 269-1810 or Chuck Holm (HBGS Plant Manager) at (707) 441-2667.

Respectfully,

A handwritten signature in blue ink that reads "Ryan Messinger". The signature is written in a cursive style with a large initial 'R'.

Ryan Messinger  
Humboldt Bay Generating Station  
Environmental Compliance Manager

Enclosure

cc: Chuck Holm, PG&E (electronic)  
Steve Royall, PG&E (electronic)

**North Coast Unified Air Quality  
Management District  
707 L Street, Eureka, CA 95501  
(707) 443-3093 www.ncuaqmd.org**



**HEARING BOARD  
APPLICATION FOR HEARING**

**FILING FEE:** \$ \_\_\_\_\_ (Rule [405, 1.0](#))

**INSTRUCTIONS:** Please type all answers. If more space is needed, attach extra sheets. Please review the attached "Guidelines for Hearing Board Application." Please note that the Petitioner must submit to the Hearing Board Clerk, ten (10) copies of all documents submitted in support of their application.

1. **Business name:** Pacific Gas and Electric Co. – Humboldt Bay Generating Station  
**Address:** 1000 King Salmon Avenue, Eureka, CA. 95503  
**Phone:** 707-441-2667 **Contact Person:** Charles Holm
  
2. Applicant is: ( ) Individual ( ) Partnership ( X ) Corporation  
(If Partnership or Corporation, give names, addresses, and titles of all partners or officers).
  
3. Type of business or activity involved and street address at which it is conducted:  
Commercial Electricity Generation
  
4. Description of article, machine, equipment, or contrivance involved in the application:  
Engines S-1 through S-10, Wartsila 18V50DF Dual Fuel RICE, 148.9 mmbtu/hr, 16.2 MW, 22931 bhp (each).
  
5. Purpose of hearing:  
( ) Suspension or revocation of permit under Health and Safety Code, Section 42307  
( ) Variance under Health and Safety Code, Section:  
( ) 42351 Interim ( ) 42359.5 Emergency (X) 42350(a) Regular  
*\*You may only check one box per application form\**  
( ) Revoking or modifying variance under Health and Safety Code, Section 42356 or 42357.  
( ) Review denial or conditional granting of authorization for Authority to Construct or Permit to Operate [Rule 102](#) of the AQMD Rules and Regulations.

**Background:**

6. Please identify the specific section, rule or order with which you cannot comply:

HBGS is requesting this regular variance to move forward with two action items. The first action item is 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.

The engine tuning will most likely need approximately 4 hours of operation below 50% load for each engine. To cover the 10-engine tuning schedule, HBGS expects that the tuning activities would entail tuning two engines daily for 5 days. This schedule is completely dependent upon the CAISO and thus, may need to be adjusted to account for grid load expectations.

The second action item is to allow HBGS to operate in island mode during any upcoming emergency events, such as Public Safety Power Shutoff (PSPS) events/storm events, while the permit modification is in process. Dependent upon the NCUAQMD and California Energy Commission (CEC) schedules, the timeline for the variance could last for the duration of a year. As soon as the permit and license amendment process have finished, the variance would no longer be necessary. HBGS currently expects to submit an application for permit modifications in during the summer of 2020.

Based upon previous testing efforts, HBGS suspects that operational parameters, associated with the two action items specified above, have the potential to exceed the following 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 emissions 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%

7. Reason(s) why compliance with section, rule, or order cited in line 6 above is beyond your reasonable control:

Operating in an island mode or as a black start unit to serve area load during emergency events, such as PSPS events, could require up to 120 mw of variability in load decreases and increases to manage instant real time area load changes. We would expect that in an island scenario, our optimum operating range for each engine could be between 4 mw and 16.3 mw. We expect to set each engine at approximately 8 mw allowing 8.3 mw of range up and 2 mw down in load. The load settings could vary significantly depending on the area load at the time. During island mode operations, more than two units may need to be started up in one hour to support grid load demands. Accordingly, HBGS is including low load-related conditions in this variance application (conditions 84, 111 and 112).

HBGS believes that the recent low load ammonia injection load point establishment has reduced some of the risk associated with NOx emissions and that all of the previous low load activities show that the plant can support island mode with very little risk for permit condition exceedances. However, there is still minimal experience operating in low loads especially during island mode operations and although HBGS will continue to control emissions to the

maximum extent practicable, HBGS would like to account for any potential upcoming permit condition exceedances associated with conducting emergency island mode operations in this variance.

During the recent activities covered under variances (emissions testing, ammonia injection load point establishment activity, and island testing), it was observed that while operating in natural gas at low loads, several of the SCR catalysts heated up to approximately 900 -915 degrees Fahrenheit. Temperatures above this could lead to extreme thermal degradation of the catalysts. Switching the fuel to distillate drops this temperature back down to safe levels. There is a chance that the proposed low load engine tuning activities may reduce catalyst temperatures while operating in an island mode, which is one of the reasons the low load engine tuning is being proposed. Because the engines will not be operating at full load, it is expected that differential pressures across the catalyst have the potential to be significantly lowered, which would lead to the potential to have reduced CO destruction capability. Although CO has been controlled very well during previous low load activities, HBGS would like to include the related conditions in the variance (conditions 114, 115, and 116).

Another reason for the engine tuning activities is that HBGS believes engine tuning has the potential to lead to lower startup emissions in natural gas mode when operating at lower loads. While HBGS believes that the engine tuning activities may reduce NOx emissions (including startup emissions), it is currently unknown whether this will be successful and therefore HBGS is including associated conditions in this variance application (conditions 90, 91, 92, 94, and 96).

While the engine tuning will also most likely lead to overall improved engine performance and the low load emissions testing conducted in December showed very good control of DPM at lower loads, operating in distillate at low loads is still a relatively new mode of operation for HBGS, therefore HBGS is including DPM control in this variance (condition 95).

Presently, HBGS is not allowed to operate engines S-1 through S-10 at loads lower than 50%. HBGS believes that recent emissions testing, ammonia load point establishment, and island testing have shown that operation of the engines in island mode during emergency events is possible with relatively minimal emissions impacts, as discussed above.

8. Describe your past diligence to maintain compliance with the provision noted in line 6 above (i.e., programs to monitor emissions, monitoring changes in production rates, monitoring efficiency of emission control equipment, etc.):

The HBGS facility is currently in compliance with all provisions of its current operating permit. Since the engines S-1 through S-10 are not allowed to operate at loads below 50% (with the exception of variance covered activities), there are currently no compliance issues at loads below 50%. In addition, as part of previous variance coverage, HBGS has proactively established low load ammonia injection load points in an effort to further reduce emissions that could occur during island operations. The proposed engine tuning is another example of HBGS's diligent efforts to reduce emissions while operating in island mode during emergency situations.

9. Damage or harm resulting, or which would result, from compliance with section, rule or order cited in line 6 above:

HBGS believes that any exceedances of emissions during the proposed engine tuning activities and emergency islanding operations will be of relatively short duration, and that impacts on local or regional air quality will be insignificant.

10. Period of time for which variance is sought: Requesting regular variance for one year.

Why: During the one year of proposed variance coverage, HBGS will be pursuing PTO modifications that will allow emergency islanding operations to occur without requiring a variance. Currently HBGS expects to submit a permit modification and CEC license amendment during the summer of 2020.

11. Requirements which applicant can meet, if less than required by section, rule, or order cited in line 6 above:

HBGS will continue to use the SCR and CO catalyst systems during all engine tuning and emergency islanding operations. Based on previous variance-covered activities, HBGS believes that emissions during islanding operations will most likely not exceed current permit limits as well. If there are any excursions from existing permit conditions, they would be expected to be of short duration and minimal levels.

12. Describe the activities the applicant will take to reduce excess emissions to the maximum degree feasible:

HBGS will operate the current APC systems to the maximum extent possible during the low load engine tuning and emergency island activities.

13. Advantages and disadvantages to residents of area if section, rule, or order cited in line 6 above is complied with:

Disadvantages would be the potential for short term exceedances of permit emissions limits during the emergency islanding operations. HBGS believes these exceedances will be minimal, if at all.

Advantages will be that HBGS will be able to continue providing power to the local area during times of emergencies, such as PSPS events, winter storms, natural disasters, etc. The low load engine tuning may potentially reduce NOx emissions.

14. Would granting of variance create a public or private nuisance? No.

Why: HBGS will operate, to the greatest extent possible, the existing engine APC systems in order to minimize emissions during the engine tuning activities and while operating in island mode during future emergency events.

15. Describe how the applicant will monitor or otherwise quantify emission levels during the term of whatever action is taken by the Hearing Board on this application:

HBGS will continue to operate the APC systems, and the CEMS systems on engines S-1 through S-10 during all proposed activities. The engine tuning activities may potentially reduce NOx emissions.

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16. Estimate the excess emissions of each pollutant, for the time period requested under this application, which will occur if your facility is granted a variance.

HBGS, at this time, does not believe that any excess emissions will occur during the low load engine tuning and islanding operations, however there has only been a limited amount of testing completed. HBGS estimates that if any exceedances do occur, they will be in the area of concentration (ppm) limits or potentially startup emissions as islanding operations may require startups that do not go to full load. The low load engine tuning may assist in reducing the startup NOx emissions. Any excess emissions that occur during the proposed engine tuning activities or during proposed emergency island mode operation will be reported in accordance with Appendix B of the NCUAQMD regulations as well as any requirements mandated by the variance process.

Please describe your method of calculation.

Any excess mass emissions will be calculated using various means of data available such as CEMS data, emissions factors, source testing data, fuel use etc. HBGS will calculate and report excess emissions in accordance with Appendix B of the NCUAQMD regulations.

Also, please calculate the excess emissions fee to satisfy the requirements of Rule 405, 5.10:

Because this variance request is for proposed activities, versus activities that have already happened, it is hard to know what emissions exceedances may occur. Any mass emissions exceedances incurred while operating under this variance will be calculated or measured and reported by the end of the variance period. Any associated fees will be paid at that time..

17. Describe the affects of curtailing operations of the source in lieu of obtaining a variance.

Curtailing operations will have no effect. The point of the variance is to allows low load engine tuning and emergency island operations which in actuality represents a curtailment of operations in order to provide the local area with power during emergency events.

Has consideration been given to curtailing operations? ( )yes (X)no

Explain the degree of consideration given to curtailment: None, see above.

I,     
signature title date

hereby certify that the foregoing is true and correct.

**North Coast Unified Air Quality  
Management District**  
707 L Street, Eureka, CA 95501  
(707) 443-3093  
www.ncuaqmd.org



**GUIDELINES FOR HEARING BOARD APPLICATION**

The North Coast Unified Air Quality Management District Hearing Board has developed a set of guidelines to assist applicants in completing an application for a hearing.

To evaluate the application for a hearing from specific conditions delineated in the [North Coast Unified Air Quality Management District Rules and Regulations](#), it is necessary that the applicant answer the questions thoroughly. These questions are developed to elicit the answers needed by the Hearing Board to make the required findings in Section 42352 of the Health & Safety Code prior to issuance of a variance. If you are a "small business", as defined in Section 42352.5(b)-1, the District will assign a person to assist you in the completion of this application and developing any needed compliance schedules.

**CONTENTS OF PETITION (Rule 601):**

1. Name, address and telephone number of petitioner or other person authorized to receive service of notice shall be stated.
2. Indicate whether the petitioner is an individual, co-partnership, corporation, or other entity; names and addresses of partners if a co-partnership, names and addresses of the officers if a corporation, and names and addresses of the persons in control if an entity.
3. Indicate the type of business or activity involved in the application, and the street address at which conducted.
4. Include a brief description of the article, machine, equipment or other contrivance, if any involved in the application.
5. Indicate whether the hearing is to concern:

- A. Whether a permit shall be revoked or a suspended permit reinstated under Section 42307 of the Health and Safety Code of the State of California.

Section 42307: "An air pollution control officer may request the hearing board of the district to hold a hearing to determine whether a permit should be revoked, if he finds that the holder of the permit is violating any applicable order, rule or regulations of the district, or any applicable provision of this division" (California Air Pollution Control Laws).

- B. The granting of variance under Section 42350(a) of the Health and Safety Code of the State of California.

Section 42350: "Any person may apply to the hearing board for a variance from Section 41701 or from the rules and regulations of the district".

Section 42351: Interim Variance. "Any person who has submitted an application for a variance and who desires to commence or continue operation pending the decision of the hearing board on the application may submit an application for an interim variance."

Petitioners filing for an Interim Variance are required to also file for a regular variance.



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Section 42359.5: Emergency Variance: “shall not remain in effect longer than 30 days and shall not be granted when sought to avoid the provisions of Section 40824 or 42351.”

- C. Whether to revoke or modify a variance under Section 42356 & 42357 of the Health and Safety Code of the State of California.

Section 42356: The hearing board may modify or revoke, by written order, any order permitting a variance.

Section 42357: “The hearing board may review and for good cause, such as a change in the availability of materials, equipment, or adequate technology, modify a schedule of increments of progress or a final compliance date in such a schedule”.

- D. Whether to review the denial or conditional granting of an authority to construct or permit to operate under Rule 102 of the North Coast Unified Air Quality Management District.

6. Identify the specific section, rule or order with which you cannot comply.
7. Indicate the facts showing why compliance with the section, rule or order cited in line 6 above is not within your reasonable control.
8. Indicate the efforts you have made over past years to continually be aware of your compliance status and the monitoring efforts you have exerted to maintain compliance with regulatory emission limits.
9. Indicate the damage or harm resulting or which would result to petitioner from a compliance with such section, rule or order.
10. State the period of time for which the variance is sought and why.
11. State the requirements which petitioner can meet and the date when petitioner can comply with such requirements.
12. State actions that will be taken to reduce excess emissions to the maximum extent possible.
13. Indicate the advantages and disadvantages to the residents of the district resulting from granting a variance.
14. State whether or not operations under such variance, if granted, would constitute a nuisance.
15. State the methods how emissions will be measured and monitored during the term of applicant’s request.
16. Calculate the excess emissions (emissions above the allowable limit) that are anticipated to occur over the term of the variance, if granted. Show the techniques used to calculate excess emissions for each pollutant. Calculate, showing the method used, the excess emissions fee required by Rule 405, 5.10 of the District's Regulation. Both the excess emissions fee and the filing fee shall be submitted with the application for a variance.
17. State the considerations that were given by the applicant to curtail operations in lieu of seeking a variance.

## PAGE 3: GUIDELINES FOR HEARING BOARD APPLICATION

Each application shall be signed by the petitioner, or some person on their behalf, and where the person signing is not the petitioner, it shall set forth their authority to sign.

All petitions shall be typewritten, double spaced, on legal or letter sized paper, on one side of the paper only, leaving a margin of at least one inch at the top and left side of each sheet.

Within our capabilities, our staff is willing to assist you in the preparation of your variance application form and supporting documents.

For your convenience, an application form is enclosed.



## **District Staff Report for Regular Variance Hearing on July 10, 2020**

**Petitioner:** Pacific Gas & Electric (PG&E)  
Re: Humboldt Bay Generating Station (HBGS) Facility

### **Purpose of Hearing:**

The regular variance requested by PG&E is to provide relief from permit conditions and permit emission limitations for a period of up to one year, while allowing the HBGS to potentially operate in island mode during upcoming emergencies such as Public Safety Power Shutdown (PSPS) events and to conduct engine tuning at loads less than 50%. HBGS will also be submitting an application to modify its Title V Operating Permit during the summer of 2020. The proposed variance would be in effect for a period of up to one year or until a modified Operating Permit and other applicable modified licensing is effective, whichever date is sooner.

The petitioner is seeking relief from the following permit conditions under their Operating Permit:

- 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%.

### **Equipment Subject to Petition:**

The primary permitted units are ten (10) Wärtsilä 18V50DF engines rated at 16.3 MW (22,931 BHp) that are dual fuel reciprocating internal combustion engines (RICE), equipped with selective catalytic reduction (SCR), oxidation catalyst, and associated support equipment including continuous emissions monitors (CEMS). The primary fuel is

natural gas with diesel pilot injection. The dual-fueled units are capable of firing 100% on diesel fuel.

### **Documents Relevant to the Variance Request:**

- PG&E Regular Variance Request cover letter (5/27/20)
- PG&E Regular Variance Application/Petition (5/27/20)
- Title V Federal Operating Permit and District Permit to Operate #NCU 059-12 for the PG&E HBGS (last revised 7/19/18)

### **Background:**

When the Operating Permit was initially issued to PG&E for the HBGS in 2008, PG&E had requested operation of the engines S-1 through S-10 at loads no lower than 50%. Because the engines were new and there were no other engines similar in the United States, the U.S. EPA required that PG&E obtain a manufacturer guarantee for emission rates. In this case, PG&E's engine manufacturer (Wartsila), did not provide guarantee for engine operation below 50%. Consequently, PG&E presented an initial permit application for HBGS for loads no lower than 50%.

PG&E has indicated that operating the HBGS plant during an island mode or as a black start unit to serve area load would require operation below the 50% that was initially proposed in their Operating Permit.

On December 10, 2019, PG&E submitted an interim variance request pursuant to Health and Safety Code (H&SC) §42351 and District Regulation VI, Rule 603, to conduct testing while operating three of ten Wartsila Dual Fuel reciprocating engines located at the HBGS at load lower than the 50%, the minimum load level allowed by the Operating Permit. Concurrent with its submittal of the application for interim variance, PG&E also submitted an application for a regular variance pursuant to H&SC §42352. Absent the variance, PG&E would not be able to conduct the testing needed to investigate the feasibility of operating the HBGS plant during an island mode or as a black start unit to serve area load at operation below what was initially proposed in their Operating Permit.

On December 14, 2019, the Hearing Board granted an interim variance from the identified permit conditions of the Operating Permit. During the period of the interim variance, PG&E conducted short term testing on the identified engines while operating under 50% load in accordance with Source Test Plan. A regular variance was heard and granted on February 3, 2020, which included two additional operational tests: a) *Ammonia Injection Load Point Determination Tests* (April 2020), and b) *Island Operational Testing* (May 2020).

The *Ammonia Injection Load Point Determination Tests* were performed in April, and allowed the ammonia injection control system to be tuned at low load by adding five (5) additional load points. The plant uses a Selective Catalytic Reduction (SCR) system for NOX emissions control with ammonia injection as part of the control system. These had already been determined for the engines at loads greater than 50% load, but had not yet been established for loads below 50%. These tests allowed the HBGS to determine the optimum operating load range for each unit in order to control the NOx emissions to some specific level. The tests required about 4 hours per engine for ten engines (less than 100 hrs of total operation).

The *Island Operational Testing* was performed on May 14, 2020 using three engines from each group of five engines (Units #1, 2, 3, and Units #8, 9, 10). This operationally tested the ability of the plant and engines to achieve real-world island operation similar to PSPS conditions.

On the successful completion of these tests, PG&E submitted a Regular Variance petition on May 27, 2020 to provide relief from permit conditions and permit emission limitations for a period of up to one year, while allowing the HBGS to potentially operate in island mode during upcoming emergencies such as Public Safety Power Shutdown (PSPS) events and to conduct engine tuning at loads less than 50%. HBGS will also be submitting an application to modify its Title V Operating Permit during the summer of 2020. The proposed variance would be in effect for a period of up to one year or until a modified Operating Permit and other applicable modified licensing is effective, whichever date is sooner.

In order to support local load demand during emergency events such as PSPS events, natural gas is proposed to be the primary and preferred fuel source during operations in island mode, 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. PG&E had indicated that 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.

#### **Relevant Regulations:**

- District Regulation VI - Hearing Board Procedures contain the requirements and procedures as authorized by the California Health & Safety Code; specifically: Rule 601 – Petition Procedures, Rule 605 – Hearing Procedures, and Rule 606 - Decisions
- Health and Safety Code (H&SC) §40826, and §42532

#### **Discussion & Recommendation:**

The North Coast Unified Air Quality Management District (District) believes that PG&E meets the requirements of the regular variance petition as proposed, with the inclusion of allowing the HBGS to conduct engine tuning at loads less than 50% to reduce NOx emissions even further than prior activities.

The purpose of the regular variance is to provide relief from permit conditions and permit emission limitations for a period of up to one year, while allowing the HBGS to potentially operate in island mode during upcoming emergencies such as PSPS events, and to conduct engine tuning at loads less than 50% in an attempt to improve engine operation and emissions during engine startups in island operations mode. HBGS will also be submitting an application to modify its Title V Operating Permit during the summer of 2020.

The proposed variance would be in effect for a period of up to one year or until a modified Title V Operating Permit and other applicable modified licensing is effective, whichever date is sooner.

Since the initial testing in December of 2019, there has not been excessive emissions when engines are operated at low load operations. PG&E successfully performed the testing as allowed under the terms of the initial variance from December 15-22, 2019. At that time, the engines were operated at 25% and 7% load rating while operating in natural gas mode and in diesel mode - NOx emissions were just at or over the existing emission limits in three of the four engines in natural gas mode, once at 4 MW and three times at 6MW. Subsequent operational testing of ammonia injection tuning at the lower loads was performed to reduce NOx emissions in natural gas mode at the lower load points. These activities have showed that the plant can now potentially operate in an island mode with very little risk of exceeding permit conditions.

Because the previous activities of ammonia injection tuning at the lower loads appear to have successfully lowered NOx emissions during operation at low loads, PG&E believes that tuning the engines at low loads will also serve to reduce NOx emissions. Since installation, HBGS has only performed engine tuning on all the engines for loads greater than 50%. In an effort to further reduce NOx emissions, the HBGS is also including low load engine tuning in the proposed regular variance request.

### **Hearing Board Findings Required By the H&SC:**

Under H&SC §42352 and District Regulation VI - Hearing Board Procedures, Rule 606 – Decisions, the Hearing Board may grant a regular variance only if it makes the following six findings:

- 1) That the petitioner for a variance 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.
- 2) 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.
- 3) That such closing or taking would be without a corresponding benefit in reducing air contaminants.
- 4) That the applicant for the variance has given consideration to curtailing operations of the source in lieu of obtaining a variance.
- 5) During the period the variance is in effect, that the applicant will reduce excess emissions to the maximum extent feasible.
- 6) 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.

#### **Finding 1):**

PG&E believes that operating the HBGS plant during an island mode or as a black start unit to serve area load would require operation below what was initially proposed in their Operating Permit. If the variance is not granted and PG&E needed to support local load demand during emergency events such as PSPS events by operating at low loads, PG&E would be 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.

While the permit modification is in process, PG&E may need to operate the HBGS in island mode during any upcoming emergency events, such as the PSPS events. As soon as the permit amendment process is finished, the variance would no longer be necessary.

Finding 2):

Due to conditions beyond the reasonable control of petitioner, requiring compliance would result in an arbitrary or unreasonable taking of property – in this circumstance, a denial of the variance would be tantamount to denying the petitioner the opportunity to perform low load engine tuning to further reduce NOx emissions during engine startups in island operations mode. Absent a variance, the Petitioner would not be able conduct the tuning needed to operating the HBGS at acceptable emissions levels for the benefit of the local area during PSPS events.

In addition, had the petitioner alternatively presented the project in the form of an Authority to Construct application, they may have been granted approval but not within an acceptable timeframe needed to meet HBGS's readiness to operate in an island mode or as a black start unit to serve area load. PG&E is the sole provider of electricity and it can be argued that it provides an essential public service to the region as it also provides support for public health and safety.

Finding 3):

Denying the petitioner request would not result in a corresponding benefit in reducing air contaminants. However, low load engine tuning will result in potentially lower emissions in both natural gas and diesel modes, and will advise and support the modification request to the current Operating Permit. This data will inform PG&E's operational ability during an island mode or as black start unit to serve area load during times of regional power outages (PSPS events, etc.).

From an air quality perspective, discharges from a stationary source (such as PG&E) equipped with state-of-the-art pollution controls and monitoring equipment during events such as a PSPS, is indeed preferred over the alternative emissions from hundreds or thousands of gas or diesel back-up generators operated at private, retail, commercial, and governmental establishments in communities throughout the region. In addition, from a public safety perspective, loss of power to communities represents grave safety concerns that overshadow potential air emissions.

Operation of the HBGS to serve local area power need during PSPS 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.

Finding 4):

Curtailing operations in lieu of the variance would not be a practical way to achieving what the petitioner needs to accomplish as proposed. The purpose of the regular variance is to allow PG&E to operate at load levels less than the 50% level authorized in its current Operating Permit, while they conduct engine tuning at low loads in an attempt to improve engine operation and emissions during engine startups in island operations mode.

Finding 5):

During the period the variance is in effect, PG&E is required to reduce excess emissions to the maximum extent feasible. As part of the variance order, the District requested, and the Petitioner agrees to accept, certain conditions to maintain the lowest possible impact on air quality emissions, notably: a) HBGS will continue to adhere to all conditions in its Operating Permit, and specifically continue to use all Air Pollution Control (APC) systems (SCR and CO catalyst, etc.) to the maximum extent possible during any low load operation and engine tuning; and b) the HBGS will continue to adhere to all monitoring requirements as indicated in its Operating Permit (CEMS, etc.).

The HBGS will be required to continue to use the SCR and CO catalyst systems during all engine tuning and emergency islanding operations. Based on previous variance-covered activities, PG&E believes that emissions from the HBGS during islanding operations will most likely not exceed current permit limits. If there are any excursions from existing permit conditions, they are anticipated to be of short duration and at minimal levels.

Finding 6):

During the period the variance is in effect, PG&E will still be utilizing existing regulatory monitoring (e.g.,CEMS) as required by the permit, and emissions will indeed be quantified and reported during the engine tuning along with regular operation.

**Recommended Variance Order Conditions:**

It is recommended that the Hearing Board make each of the statutory findings to grant the Regular Variance on the conditions set forth above (Hearing Board Findings Required by the H&SC), and direct the APCO and General Counsel to draft a Variance Order consistent with the Hearing Board's determination for approval by the Petitioner before signature by the Hearing Board Chair.

If a regular variance is granted by the Hearing Board, it is also recommended that the Regular Variance Order include the following:

1. The required findings identified under H&SC §42352 and District Regulation VI - Hearing Board Procedures, Rule 606 – Decisions, have been satisfied.
2. The Petitioner be granted relief from the permit conditions and limitations of the Operating Permit as listed and proposed above at operational load levels less than 50%, so as 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.
3. The Petitioner be granted relief from the permit conditions and limitations of the Operating Permit as proposed in the petition until July 10, 2021.



4. 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.
5. 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:
  - Proposal is for 4 hours of operation below 50% load for each engine.
  - There are 10 engines that will be tested (S-1 through S-10).
  - HBGS expects that the tuning activities would entail tuning 2 engines daily for 5 days.
  - 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.
6. The Petitioner will continue to adhere to all conditions in its 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 engine tuning and operation.
7. The Petitioner will continue to adhere to all regulatory monitoring requirements in the Operating Permit, specifically use of Continuous Emissions Monitoring (CEMS) during all low load engine tuning.
8. Within thirty days (30) days after the date of expiration of the variance, HBGS to 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. Payment of fees shall be made according to District Rule 404(C).

**NORTH COAST UNIFIED  
AIR QUALITY MANAGEMENT DISTRICT  
707 L Street, Eureka, CA 95501  
Phone: (707)443-3093 · Fax: (707) 443-3099**



**TITLE V FEDERAL OPERATING PERMIT  
&  
DISTRICT PERMIT TO OPERATE**

**TITLE V PERMIT NO: NCU 059-12**

**ISSUED TO:**

Pacific Gas and Electric Company  
1000 King Salmon Avenue  
Eureka, CA 95503

**PLANT SITE LOCATION:**

Humboldt Bay Generating Station  
1000 King Salmon Avenue  
Eureka, CA 95503

**PERMIT EXPIRES:**

March 16, 2023

**RESPONSIBLE OFFICIAL:**

Mr. Steve Royall  
Director of Fossil  
Operations & Equipment  
(415) 973-0629

**CONTACT PERSON:**

Mr. Charles Holm  
HBGS, Plant Manager  
(707) 441-2667

**NATURE OF BUSINESS:**

Commercial Electricity Generation

**STANDARD INDUSTRIAL CLASSIFICATION (SIC):**

4911

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## PERMIT SUMMARY

This permit is a Title V Permit to Operate issued pursuant to North Coast Unified Air Quality Management District (District) Rules and Regulations. It also serves as the local Permit To Operate and contains conditions and requirements carried over from the original Authority to Construct and Prevention of Significant Deterioration permits.

The application for the renewal of this permit was evaluated for compliance with District, State, and federal air quality rules and regulations. The following list contains the air quality rules that were found to be applicable at the time of review.

### Federally Enforceable Rules & Regulations

Citation	Description	Adoption Date
Regulation I, Rule 102	Permit Requirements	7-9-15
Regulation I, Rule 110	New Source Review Standards	7-9-15
Regulation I, Rule 103	Action on Applications	7-9-15
Regulation I, Rule 104(B)	Visible Emissions	7-9-15
Regulation I, Rule 104(C)	Particulate Matter	7-9-15
Regulation I, Rule 104(D)	Fugitive Dust	7-9-15
Regulation I, Rule 104(E)	Sulfur Oxide Emissions	7-9-15
Regulation I, Rule 111	Federal Permitting Requirements for Sources of Greenhouse Gases	1-20-11
Regulation V	PTOs for Sources Subject to Title V	5-19-05
NSPS	40 CFR 60 Subpart IIII – Stationary CI Engines	7-11-2006
NESHAP	40 CFR 63 Subpart ZZZZ – Stationary IC engines	1-18-2008

### Non-Federally Enforceable Rules & Regulations

Citation	Description	Adoption Date
Regulation IV, Rule 400	Stationary Source Permit Fees	9-18-14
Regulation IV, Rule 406	Title V Fees	9-18-14
Regulation IV, Rule 407	Air Toxic “Hot Spots” (AB2588) Fees	9-18-14
Regulation IV, Rule 412	Major Source Assessment	9-18-14
Title 17 CCR §93115	ATCM for Stationary Compression Ignition Engines	10-18-2007

## FACILITY DESCRIPTION

### PERMIT HISTORY

Initial Permit	March 17, 1998
Minor Modification	May 1, 2000
Minor Modification	November 28, 2000
Application for Certification	September 29, 2006
Preliminary Determination of Compliance	October 24, 2007
Final Determination of Compliance, Authority to Construct / Prevention of Significant Deterioration Permit	April 14, 2008
Administrative Amendment	December 2, 2009
Significant Modification	February 8, 2010
Administrative Amendment	March 10, 2014
Title V Renewal	February 17, 2016
Administrative Amendment	April 26, 2016
Minor Modification	December 18, 2017

### EQUIPMENT DESCRIPTION

Since the mid 1950's, the Pacific Gas & Electric Company (PG&E) has operated power generation equipment at the Humboldt Bay Generating Station (HBGS) located at 1000 King Salmon Avenue in Eureka, California. HBGS is located in the northwestern portion of California within the County of Humboldt and is three miles to the south of Eureka, the County seat. The facility is sited about ¼ mile to the west of State Highway 101 at Buhne Point and is located on relatively level coastal terrain with hills within ½ mile east of the plant.

Currently, the HBGS consists of ten Wärtsilä 18V50DF 16.3 MW lean-burn reciprocating engines, equipped with selective catalytic reduction (SCR), oxidation catalyst, and associated support equipment including continuous emissions monitors. The primary fuel is natural gas with diesel pilot injection; the dual-fueled units are capable of firing 100% on diesel fuel. A diesel-fired emergency back-up generator and a diesel-fired fire pump are also authorized for use.

## **EQUIPMENT OPERATING SCENARIOS**

As a commercial power plant, market circumstances and demand will dictate the exact operation of permitted equipment. However, the following general operating modes are projected to occur.

Base Load – HBGS may be operated at maximum continuous output for as many hours per year as scheduled by load dispatch, and limited by operational constraints of the permit to operate (approximately 75% annual capacity factor). Normal operation of HBGS will occur while the reciprocating engines are fired on natural gas with a diesel pilot. Firing on natural gas with diesel pilot is defined as “Natural Gas Mode” in this Permit. The engines have the capability of switching fuel types without interruption to power generation. The number of hours of liquid fuel firing is limited by the permit to a maximum of 1,000 operating hours per year total for all ten of the engine units combined. Operation of the reciprocating engines while fired on 100% liquid fuel is defined as “Diesel Mode” in this Permit. The allowable liquid fuel types are limited to CARB Diesel, CARB Diesel with additives, and Alternative Liquid Fuel as defined in the Permit.

Load Following – The facility may be operated to meet variable load requirements. Due to the modular design of the facility, it is possible to operate each of the 10 units individually or in any combination. In addition, each engine may be operated at loads varying from 50% to 100% of capacity.

Full Shutdown – This would occur if forced by equipment malfunction, fuel supply interruption, transmission line disconnect, natural disaster, or market conditions. The facility will be the primary source of power generation for the north coast region for the next several years. As such, full shutdown for any length of time is not anticipated.



## DEFINITIONS

As used in this Permit, the terms shall have the meaning set out herein.

- a. **Acfm:** actual cubic feet per minute
- b. **Alternative Liquid Fuel:** An alternative diesel fuel or CARB Diesel Fuel with fuel additives that meets the requirements of the California Air Resources Board Verification Procedure, as codified in Title 13, CCR, sections 2700-2710
- c. **APCO:** the District Air Pollution Control Officer
- d. **Calendar Day:** Any continuous 24-hour period beginning at 12:00 AM or 0000 hours
- e. **California Air Resources Board (CARB) Diesel Fuel:** Any diesel fuel that is commonly or commercially known, sold, or represented by the supplier as diesel fuel No. 1-D or No. 2-D, pursuant to the specifications in ASTM D975-81, "Standard Specification for Diesel Fuel Oils," as modified in May 1982, which is incorporated herein by reference, and that meets the specifications defined in Title 13 CCR, sections 2281, 2282 and 2284
- f. **CAM Plan:** Compliance Assurance Monitoring Plan, as defined in 40 CFR 64
- g. **CARB:** the California Air Resources Board
- h. **CEMS:** Continuous Emissions Monitoring System
- i. **CFR:** the Code of Federal Regulations
- j. **Corrected Concentration:** The concentration of any pollutant (generally NO<sub>x</sub>, CO, ROC, or NH<sub>3</sub>) corrected to a standard stack gas oxygen concentration. For emission points S-1 through S-12, the standard stack gas oxygen concentration is 15% O<sub>2</sub> by volume on a dry basis
- k. **Diesel Mode:** the firing of reciprocating engines S-1 through S-10 on CARB diesel, when the heat input from liquid fuel exceeds 2.0 MMBtu/hr.
- l. **Diesel Mode Startup:** a Startup Period during which the reciprocating engines operates in Diesel Mode for periods exceeding one hundred and twenty (120) seconds, excluding Operational Mode Transfer events.
- m. **Diesel Particulate Matter (DPM):** particulate matter created by the combustion of diesel fuel in internal combustion engines; using EPA Method 5, the filterable material collected from the exhaust of diesel fired internal combustion engines.
- n. **Diesel Particulate Matter ATCM Emergency Use:** shall only pertain to engines S-11 and S-12 and shall mean providing electrical power or mechanical work during any of the following events and subject to the following conditions:
  - i. The failure of loss of all or part of normal electrical power service or normal gas supply to the facility which is demonstrated by the Permittee to the District APCO's satisfaction to have been beyond the reasonable control of the Permittee.
  - ii. The failure of the facility's internal power distribution system which is demonstrated by the owner or operator to the District APCO's satisfaction to have been beyond the reasonable control of the Permittee.
  - iii. The pumping of water for fire suppression or protection.
- o. **District:** North Coast Unified Air Quality Management District
- p. **Dscfm:** dry standard cubic feet per minute
- q. **Dual-fuel Diesel Pilot Engine:** a dual-fueled engine that uses diesel fuel as a pilot ignition source at an annual average ratio of less than 5 parts diesel fuel to 100 parts total fuel on an energy equivalent basis.

- r. **Dual-fuel Engine:** any CI engine that is engineered and designed to operate on a combination of alternative fuels, such as compressed natural gas (CNG) or liquefied petroleum gas (LPG) and diesel fuel or an alternative diesel fuel. These engines have two separate fuel systems, which inject both fuels simultaneously in to the engine combustion chamber.
- s. **Emergency:** operation arising from a sudden and reasonably unforeseeable event beyond the control of the Permittee (e.g., an act of God) which causes the excess of a limitation under this permit and requires immediate and corrective action. An “emergency” does not include noncompliance as a result of improperly designed or installed equipment, lack of preventative maintenance, careless or improper operation, or operator error.
- t. **EPA:** the United States Environmental Protection Agency
- u. **Facility:** the site of the Humboldt Bay Generating Station at HBPP
- v. **Firing Hours:** Period of time during which fuel is flowing to a unit, measured in minutes divided by 60
- w. **HBGS:** Humboldt Bay Generating Station
- x. **Heat Input:** the energy (heat) input of the fuel combusted at the higher heating value (HHV) of the fuel
- y. **HHV:** Higher Heating Value
- z. **Hr:** one hour – a standard measurement of time
- aa. **H<sub>2</sub>S:** Hydrogen Sulfide
- bb. **Lb:** pound – an English unit of measurement of weight and mass being equivalent to 7000 grains, 16 ounces, and 0.453 kilograms
- cc. **Maintenance and Testing – Wartsila Engines:** Operation of the Wartsila engines to (a) evaluate the ability of an engine or its supported equipment to perform during an emergency, or to facilitate the training of personnel on emergency activities; or (b) perform emissions testing; or (c) perform maintenance and operational testing of the engines, their fuel delivery systems, or supported equipment (generators, switch gear, pumps, transformers, switch gear, uninterruptable power supply, breakers, etc.); or (e) perform safety-related testing as required by the manufacturer or any government agency; or (f) satisfy a requirement of any law, regulation, rule, ordinance, standard, or contract.
- dd. **MMBtu:** million British thermal units
- ee. **Natural Gas:** any mixture of gaseous hydrocarbons containing at least 80 percent methane by volume as determined by Standard Method ASTM D1945-64
- ff. **Natural Gas Curtailment:** A reduction in the natural gas supply available to the Facility as specified below.
  - i. Curtailment directed by a regulatory agency, or automatically implemented by PG&E in accordance with procedures approved by a regulatory agency; and
  - ii. Curtailment cannot be related to fuel pricing (i.e., units will not be switched to Diesel fuel operation simply because gas prices are higher than Diesel prices).
- gg. **Natural Gas Mode:** the firing of natural gas and CARB diesel or alternative liquid fuel in the engines where the diesel fuel or alternative liquid fuel is used solely for pilot injection, and the diesel pilot heat supplied is less than or equal to 2.0 MMBtu/hr.
- hh. **Natural Gas Mode Startup:** Startup Period during which the reciprocating engine operates in Diesel Mode for 120 seconds or less.
- ii. **NFPA:** National Fire Protection Association

- jj. **Normal Operations:** the operation of the Wärtsilä reciprocating engines identified in this permit, when firing in natural gas mode with diesel pilot injection, when not in startup, shutdown or malfunction mode
- kk. **Notice:** unless otherwise stated, shall be in writing, sent postage prepaid, to the APCO and include all information required. Notice shall be sent to the APCO at the following address: 707 L Street, Eureka, CA 95501
- ll. **Operational Minute:** a 60 second period when the engines are being fired. Each Operational Minute shall be designated as either “Natural Gas Mode” or “Diesel Mode”.
- mm. **Operational Mode Transfer:** the switching of fuel mode while operating at engine loads greater than 50%.
- nn. **O<sub>2</sub>:** Oxygen
- oo. **Permittee:** the owner or operator identified on the Permit title page (PG&E)
- pp. **PM:** Particulate Matter
- qq. **Ppmvd:** parts per million, volumetric dry
- rr. **Responsible Official:** person(s) who have direct supervisory authority or control to affect operations of the equipment authorized pursuant to this Permit, and who have the ability to certify that a source complies with all applicable federal requirements and federally enforceable permit conditions as generally defined in District Rule 101
- ss. **Rolling 3-hour Period:** Any consecutive three-hour period, not including start-up or shut-down periods
- tt. **ROC:** reactive organic compound consistent with District Rule 110
- uu. **Quarter:** calendar quarter, consisting of the following Q1 - January through March; Q2 - April through June; Q3 - July through September; Q4 - October through December
- vv. **Shutdown Period:** The 30 minute period immediately prior to the termination of fuel flow to the reciprocating engine.
- ww. **SO<sub>2</sub>:** Sulfur Dioxide
- xx. **Startup Period:** The lesser of the first 60 minutes of continuous fuel flow to the reciprocating engine after fuel flow is initiated or the period of time from reciprocating engine fuel flow initiation until the reciprocating engine achieves two consecutive valid 15-minute average CEM data points in compliance with the emission concentration limits of Tables 5.1 and 5.3 in the Pollutant Limitations Section of this Permit.
- yy. **VEE:** Visible Emissions Evaluation
- zz. **Year:** Any consecutive twelve-month period of time

## FEDERALLY ENFORCEABLE GENERAL REQUIREMENTS

### TITLE V PERMIT MODIFICATIONS AND RENEWAL

1. The Permittee shall submit to the Air Pollution Control Officer a completed Title V permit application for renewal no earlier than September 16, 2016 (18 months prior to the expiration date of the Title V permit) and no later than September 16, 2017 (6 months prior to the expiration date of the Title V permit). *[District Rule 502(B)(2); 40 CFR 70.5(a)(1)(iii)]*
2. If modifications to the permit are necessary, the Permittee shall submit to the Air Pollution Control Officer a complete Title V permit application for either an Administrative, Minor, or Significant Title V permit modification. The application shall not be submitted prior to receiving any required preconstruction permit from the District. *[District Rule 502(B)(3); 40 CFR 70.5(a)(1)(ii)]*
3. The Permittee shall submit to the Air Pollution Control Officer updates to the Title V application as new requirements become applicable to the source, and in no event later than 30 days after the end of the quarter during which the new requirement takes effect. *[40 CFR 70.5(b)]*
4. Upon the discovery of inaccuracies contained within an application or supplement thereto, the Permittee shall immediately notify the APCO. The Permittee shall undertake action to correct the deficiency within the time frame specified by the APCO. *[District Rule 502(E)(3); 40 CFR 70.5(a)(2) and (b)]*
5. Upon written request of the Air Pollution Control Officer, the Permittee shall supplement any complete application with additional information within the time frame specified by the Air Pollution Control Officer. *[District Rule 502(E)(2); 40 CFR 70.5(a)(2) and (b)]*
6. When submitting an application for a permit pursuant to Regulation V, the Permittee shall include the following information: A certification by a responsible official of all reports and other documents submitted for permit application; compliance progress reports at least every 6 months for, and submitted no later than 30 days after, the periods January 1<sup>st</sup> through June 30<sup>th</sup> and July 1<sup>st</sup> through December 31<sup>st</sup> of each year; statements on compliance status with any applicable enhanced monitoring; and annual compliance plans, no later than January 30<sup>th</sup> of each year, which shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document(s) are true, accurate, and complete. *[40 CFR 70.5(c)(9) and (d)]*
7. With the exception of acid rain units subject to Title IV of the Clean Air Act and solid waste incinerators subject to section 129(e) of the Clean Air Act, each permit issued pursuant to District Regulation 5 for any source shall include a condition for a fixed term not to exceed five years from the time of issuance. A permit to operate for an acid rain unit shall have a fixed permit term of five years. A permit to operate for a solid waste incinerator shall have a permit term of 12 years. However, the permit shall be reviewed at least every five years. *[District Rule 504(K); 40 CFR 70.6(a)(2)]*

## COMPLIANCE

8. The Permittee shall comply with all conditions of the Title V permit. *[District Rule 504(B)(7)]*
9. The Permittee may not assert or use as a defense, expressly, impliedly, or by operation of law or past practice, in any enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Title V permit. *[District Rule 504(B)(7)(d)]*
10. This Title V permit may be modified, revoked, reopened and reissued or terminated for cause. *[District Rule 503(l)]*
11. The Permittee shall furnish to the Air Pollution Control Officer, within 10 (ten) days of the request, any information that the Air Pollution Control Officer may request in writing to determine whether cause exists for modifying, revoking and reissuing, terminating this permit, or to determine compliance with this Title V permit. Upon request, the Permittee shall also furnish to the Air Pollution Control Officer copies of records required to be kept by conditions of this permit. For information claimed to be confidential, the Permittee may furnish such records along with a claim of confidentiality. *[40 CFR 70.6(a)(6)(v)]*
12. Noncompliance with any federally enforceable requirement in this Title V permit is grounds for Title V permit termination, revocation and reissuance, modification, enforcement action, or denial of the Title V permit renewal application. *[District Rule 504(B)(7)(c)]*
13. A pending Title V permit action (e.g. a proposed permit revision) or notification of anticipated noncompliance does not stay any permit condition. *[District Rule 504(B)(7)(e)]*
14. This Title V permit does not convey any property rights of any sort or any exclusive privilege. *[District Rule 504(B)(7)(b)]*
15. Upon presentation of credentials and other documents as may be required by law, the Permittee shall allow the Air Pollution Control Officer or an authorized representative to perform all of the following:
  - a. Enter the stationary source's premises where this source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
  - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Title V permit;
  - c. Inspect at reasonable times, the stationary source, equipment (including monitoring and air pollution control equipment), practices and operations regulated or required under this Title V permit; and
  - d. As authorized by District rules or by the Federal Clean Air Act, sample or monitor at reasonable times substances or parameters for the purpose of ensuring compliance with the Title V permit conditions or applicable federal requirements. *[District Rule 504(B)(5)]*

## REPORTS AND RECORDKEEPING

16. Monitoring Reports
- a. The Permittee shall submit to the Air Pollution Control Officer at least once every six months, unless required more frequently by an applicable requirement, reports of all required monitoring set out in this Title V permit.
  - b. The reporting periods for this permit shall be for the six month periods January 1<sup>st</sup> through June 30<sup>th</sup> and July 1<sup>st</sup> through December 31<sup>st</sup>. The reports shall be submitted by July 30<sup>th</sup> and January 30<sup>th</sup> of each year respectively.
  - c. Any and all instances of deviations from Title V permit conditions must be clearly identified in such reports. All required reports must be certified by the responsible official and shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete. *[District Rule 502(K) and Rule 504(E); 40 CFR 70.6(a)(3)(ii) and (iii)]*
17. Compliance Reports
- a. The Permittee shall submit to the Air Pollution Control Officer and to U.S. EPA (Air-3, U.S. EPA, Region IX) on an annual basis, unless required more frequently by additional applicable federal requirements, a certification of compliance by the Permittee with all terms and conditions contained in the Title V permit, including emission limitations, standards and work practices.
  - b. The reporting period for this permit shall be January 1<sup>st</sup> through December 31<sup>st</sup>. The report shall be submitted by January 30<sup>th</sup> of each year. The initial report shall be for the period January 1<sup>st</sup> 2009 through December 31<sup>st</sup> 2009 and shall be submitted by March 1<sup>st</sup> 2010.
  - c. All required reports must be certified by the responsible official and shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.
  - d. The compliance certification shall include the following:
    - i. The identification of each term or condition of the Title V permit that is the basis of the certification.
    - ii. The method(s) used for determining the compliance status of the source, currently and over the reporting period, and whether such method(s) provides continuous or intermittent data.
    - iii. The status of compliance with the terms and conditions of the Title V permit for the period covered by the certification, based on the method designated in Section D (ii) of this condition.
    - iv. Such other facts as the Air Pollution Control Officer may require in order to determine the compliance status of the source.
    - v. A method for monitoring the compliance of the stationary source with its emissions limitations, standards and work practices. *[District Rule 504(J); 40 CFR 70.6(b)(5)]*
18. The Permittee shall report within 24 hours of detection any deviation from a federally enforceable Title V permit condition. In order to fulfill the reporting requirement of this condition, the Permittee shall notify the Air Pollution Control Officer by telephone, email, or fax followed by a written statement within seven (7) days describing the nature of the deviation from the federally enforceable permit condition. *[District Rule 504(E); 40 CFR 70.6(a)(3)(iii)]*

19. All monitoring data and support information required by a federally enforceable applicable requirement must be kept by the stationary source for a period of 5 years from the date of the monitoring sample, measurement, report or application. Support information includes all calibration and maintenance records, all electronic data for continuous monitoring instrumentation, and copies of all reports required by the federally enforceable applicable requirement in the Title V permit. *[District Rule 502(J) and Rule 504(C); 40 CFR 70.6(a)(3)(ii)]*

#### PUBLIC NUISANCE

20. The Permittee shall not discharge such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public; or which endanger the comfort, repose, health or safety of any such persons or the public; or which cause or have a natural tendency to cause injury or damage to business or property. *[District Rule 104(A)(1)]*

#### VISIBLE EMISSIONS

21. The Permittee shall not discharge into the atmosphere from any single source of emission, any air contaminant other than uncombined water vapor, for a period or periods aggregating more than three minutes in any one hour which is:
- As dark or darker in shade as that designated No. 2 (3-minute average), on the Ringelmann Chart, as published by the United States Bureau of Mines, or
  - Of such opacity as to obscure a human observer's view, or a certified calibrated in-stack opacity monitoring system to a degree equal to or greater than forty percent (40%) opacity. *[H&SC §41701]*

#### PARTICULATE MATTER

22. Particulate Discharge Limitations
- General Combustion Sources: The Permittee shall not discharge particulate matter into the atmosphere from any combustion source in excess of 0.46 grams per standard cubic meter (0.20 grains per standard cubic foot) of exhaust gas, calculated to 12 percent carbon dioxide; or in excess of the limitations of NSPS (District Rule 104(K)), as applicable.
  - Steam Generating Units: The Permittee shall not discharge particulate matter into the atmosphere from any steam generating unit, installed or modified after July 1, 1976, in excess of 0.23 grams per standard cubic meter (0.10 grains per standard cubic foot) of exhaust gas, calculated to 12 percent carbon dioxide; or in excess of the limitations of NSPS *[District Rule 104(K)]*.
  - Steam Generating Utility Power Plants: Notwithstanding the limitations set out above, no steam generating power plants which produce electric power for sale to any public utility shall discharge particulate matter into the atmosphere in excess of 0.10 pounds per million BTU heat input or any other specific applicable permit limitation, whichever is the more restrictive emission condition.
  - Non-Combustion Sources: The Permittee shall not discharge particulate matter into the atmosphere from any non-combustion source in excess of 0.46 grams per actual cubic meter (0.20 grains per cubic foot) of exhaust gas or in total quantities in excess of the maximum allowable process weight rate as listed in Rule 104 Table 1. *[District Rule 104]*

23. The Permittee shall not handle, transport or store, or allow open storage of materials in such a manner which allows or has the potential to allow unnecessary amounts of particulate matter to become airborne. Reasonable precautions shall be taken to prevent particulate matter from becoming airborne, including, but not limited to, the following:
- a. Covering open bodied trucks when used for transporting materials likely to give rise to airborne dust.
  - b. Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. Containment methods can be employed during sandblasting and other similar operations.
  - c. Conduct agricultural practices in such a manner as to minimize the creation of airborne dust.
  - d. The use of water or approved dust surfactants for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land.
  - e. The application of asphalt, oil, water or suitable chemicals on dirt roads, materials stockpiles, and other surfaces which can give rise to airborne dusts.
  - f. The paving of roadways and their maintenance in a clean condition.
  - g. The prompt removal of earth or other material from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water, or other means. *[District Rule 104(D)]*

#### SULFUR COMPOUNDS

24. The Permittee shall not discharge into the atmosphere from any single source of emissions, sulfur oxides (calculated as sulfur dioxide (SO<sub>2</sub>)) in excess of 1,000 ppm or in excess of the emission limitations of Federal New Source Performance Standards, as applicable. *[District Rule 104(E)]*

#### OPEN BURNING

25. The Permittee shall not ignite or cause to be ignited or suffer, allow or maintain any open outdoor fire for the disposal of rubber, petroleum or plastic wastes, demolition debris, tires, tar paper, wood waste, asphalt shingles, linoleum, cloth, household garbage or other combustible refuse, or for metal salvage or burning of motor vehicle bodies. No other open burning shall occur without the owner, operator(s) or Permittee having first obtained a Coordinated Authorized Burn Permit from the Air Pollution Control Officer. *[District Rules 201 & 203]*



### EQUIPMENT BREAKDOWNS

26. The Permittee shall comply with the emergency provisions contained in all applicable federal requirements.
  - a. Within two working days of the emergency event, the Permittee shall notify the Air Pollution Control Officer with a description of the emergency and any mitigating or corrective actions taken. *[District Rule 502(I)]*
  - b. Within two weeks of an emergency event, the owner(s), operator(s) or the responsible official shall submit to the Air Pollution Control Officer a signed contemporaneous log or other relevant evidence which demonstrates that:
    - i. An emergency occurred.
    - ii. Identification of the cause(s) of the emergency.
    - iii. The facility was being properly operated at the time of the emergency.
    - iv. Identification of each and every step taken to minimize the emissions resulting from the emergency.
  - c. The Permittee has the burden of proof to establish that an emergency occurred in any enforcement proceeding.

### TITLE VI REQUIREMENTS (OZONE DEPLETING SUBSTANCES)

27. The Permittee shall not allow or cause the opening of appliances containing CFCs for maintenance, service, repair, or disposal unless first complying with the required practices set out pursuant to 40 CFR 82.156. *[40 CFR 82 Subpart F]*
28. Equipment used during the maintenance, service, repair, or disposal of appliances containing CFCs shall comply with the standards for recycling and recovery equipment set out in and pursuant to 40 CFR 82.158. *[40 CFR 82 Subpart F]*
29. The Permittee and its contractors and agents performing maintenance, service, repair or disposal of appliances containing CFCs must be certified by an approved technician certification program set out in and pursuant to 40 CFR 82.161. *[40 CFR 82 Subpart F]*

### ASBESTOS

30. The Permittee shall comply with the standards of 40 CFR 61 Subpart M which regulates demolition and renovation activities pertaining to asbestos materials.

### PAYMENT OF FEES

31. The Permittee shall pay an annual permit fee and other fees as required in accordance with District Regulation IV, Rule 406, Title V Fees. Failure to pay these fees by the dates due will result in immediate suspension of this Title V Permit to Operate effective on the date the fees were due, and on notification by the Air Pollution Control Officer of such suspension. Operation without an effective Title V permit subjects the Permittee to potential enforcement action by the District and the U.S. EPA pursuant District Rules and Section 502(a) of the Clean Air Act as amended in 1990. *[District Regulation IV, Rule 406]*

### ACCIDENTAL RELEASES

32. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the Permittee Title V permit shall register and submit to the U.S. EPA the required data related to the risk management plan (RMP) for reducing the probability of accidental releases of any regulated substances listed pursuant to Section 112(r) (3) of the CAA as amended in 68.130. The list of substances, threshold quantities and accident prevention regulations promulgated under Part 68 do not limit in any way the general duty provisions under Section 112(r)(1). *[40 CFR Part 68]*
33. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the Permittee shall comply with the requirements of 40 CFR Part 68 no later than the latest of the following dates as provided in 40 CFR 68.10(a):
  - a. June 21, 1999,
  - b. Three years after the date on which a regulated substance is first listed under 68.130, or
  - c. The date on which a regulated substance is first present above a threshold quantity in a process. *[40 CFR Part 68]*
34. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the Permittee(s) shall submit any additional relevant information requested by any regulatory agency necessary to ensure compliance with the requirements of 40 CFR Part 68. *[40 CFR Part 68]*
35. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the Permittee(s) shall annually certify compliance with all applicable requirements of Section 112(r) as part of the annual compliance certification. This annual compliance certification shall be submitted and received no later than January 30<sup>th</sup> of each year. *[40 CFR Part 68]*

### CONDITIONAL TRANSFER OF OWNERSHIP

36. In the event of any changes in control or ownership of these facilities, this permit together with its terms and conditions shall be binding on all subsequent owners and operators. The Permittee shall notify the succeeding owner and operator of the existence of this permit and its conditions by letter, a copy of which shall be forwarded to the District, and which shall identify the exact effective date of the transfer of ownership.
37. The new owner(s) and operator(s) of this Title V source shall notify the Air Pollution Control Officer within 30 (thirty) days of the transfer of ownership and which notification shall include a certification by the responsible party that the Title V facility operations are to be operated in the same operational parameters as set out herein, and as before the transfer of ownership.

### SEVERABILITY

38. If any term or condition of this permit, for any reason, be adjudged by a court of competent jurisdiction to be invalid, such judgement shall not affect or invalidate the remainder of this permit. These permit conditions are enforceable individually and severally. *[40 CFR 60.6(a)(5); District Rule 504(B)(8)]*

## LOCALLY ENFORCEABLE ONLY GENERAL REQUIREMENTS

### APPLICABILITY

39. Any permit or written authorization issued pursuant herein shall not be transferable, by operation of law or otherwise, from one location to another, or from one person to another, unless such transfer occurs as a condition of this permit or as a modification to the permit and with written notification to the Air Pollution Control Officer within 30 (thirty) days of transfer of ownership.
40. Reserved.

### ADMINISTRATION

41. The Permittee shall not cause or permit the construction or modification of any new source of air contaminants or modifications to an existing source, either minor or major, without first having obtained an Authority to Construct (ATC) permit from the Air Pollution Control Officer.
42. This permit is effective only upon payment of the permit fees set out in District Rules and Regulations.
43. This Permit is issued pursuant to California Health and Safety Code Section 42300. Commencement of any act or operation authorized by this Permit shall be conclusively deemed to be acceptance of all terms and conditions contained herein.
44. The Permittee shall comply with all conditions of this permit. Any violation of any condition of this Permit is a violation of District Rules and Regulations, and California State Law. [*District Rule 105(A)*]
45. The Permit Conditions shall be liberally construed for the protection of the health, safety and welfare of the people of the District. [*District Rule 100(F)(3)*]
46. The District Rules and Regulations may be superseded or revised by the District Board with notice as required by state law. It is Permittee's responsibility to stay current with Rules and Regulations governing its business. The Permittee is therefore expected to, and shall, comply with all applicable Rules and Regulations. [*District Rule 100(F); Rule 105(A)*]
47. Permit requirements apply to the facility owner and/or operator(s) and any contractor(s) or subcontractor(s) performing any activity authorized under this Permit. Any person(s) including contractor(s), subcontractor(s), not in compliance with the applicable permit requirements are in violation of State and Local laws, and are subject to appropriate civil and criminal penalties. The facility owner and/operator, and all contractor(s) or subcontractor(s) are strictly liable for the actions and violations of their employee(s). A violation committed by a contractor(s) or subcontractor(s) shall be considered a violation by the facility owner(s) and/or operator(s), and is also a violation by the contractor(s) and/or any subcontractor(s). [*District Rule 102*]

48. Prior to building, erecting, altering, or replacing any article, machine, equipment, or other contrivance where the use of said article may result in the discharge of air pollutants or in the reduction, elimination, or control of air pollutants, the Permittee shall obtain written authorization from the APCO. [*District Rule 102*]
49. Knowing and willful misrepresentation of a material fact in the application for the Permit, or failure to comply with any condition of the Permit, or of the District Rules and Regulations, or any state or federal law, shall be grounds for revocation of this Permit. [*District Rule 102*]
50. Permittee shall not construct, erect, modify, operate, or use any equipment which conceals the emission of an air contaminant, which would otherwise constitute a violation of the limitations of this Permit. [*District Rule 104(A)(2)*]
51. This Permit does not convey any property rights of any sort, or any exclusive privilege.
52. The "Right of Entry", as delineated in District Rule 109(A) and California Health and Safety Code Section 41510 of Division 26, shall apply at all times. Failure to grant immediate access to District, CARB, or other authorized personnel shall be grounds for permit suspension or revocation.
53. The APCO reserves the right to amend this Permit in order to ensure compliance with all applicable Federal, State and Local laws, Rules and Regulations or to mitigate or abate any public nuisance. Such amendments may include requirements for additional operating conditions, testing, data collection, reporting and other conditions deemed necessary by the APCO.
54. If any provision or condition of this Permit is found invalid by a court of competent jurisdiction, such finding shall not affect the validity or enforcement of the remaining provisions.
55. This Permit shall be posted in a conspicuous location at the site and shall be made available to District representatives upon request. [*District Rule 102(H)*]
56. The Permittee shall pay an annual permit fee and other fees as required in accordance with District Regulation IV. Failure to pay these fees will result in the forfeiture of this Permit. Operation without a permit subjects the source to potential enforcement action by the District. In the event of facility closure or change of ownership or responsibility, the new owner or operator shall be assessed and shall pay any unpaid fees. [*District Regulation IV - Fees*]
57. This Permit is not transferable from either one location to another, from one piece of equipment to another, or from one person to another, except as provided herein. In the event of any change in control or ownership of the subject facility, the Permittee shall notify the succeeding owner of this Permit and its conditions; and shall notify the District of the change in control or ownership within fifteen (15) days of that change. [*District Rule 400(E)*]

58. A request for Transfer of Ownership of this Permit shall be submitted to the APCO prior to commencing any operation of the subject equipment and/or operations by any owner(s) and/or operator(s) not otherwise identified in this Permit. Failure to file the Transfer of Ownership constitutes a separate and independent violation, and is cause for voiding this Permit. The burden of applying for a Transfer of Ownership is on the new owner(s) and/or operator(s). Any Permit transfer authorized pursuant to a transfer of ownership request shall contain the same conditions as this Permit. [*District Rule 400(E)*]
59. For purposes of this Permit, the terms identified in the Definition Section shall have the meaning set out in District Rule 101 and as defined in the definition section of this permit. In the event of any conflict between Rule 101 and the permit definitions, the definitions section of this permit shall prevail.

#### EMISSIONS & OPERATION

60. This Permit does not authorize the emission of air contaminants in excess of those allowed by the federal Clean Air Act, California Health and Safety Code or the Rules and Regulations of the District. This Permit shall not be considered as permission to violate existing laws, ordinances, regulation or statutes of other governmental agencies.
61. The Permittee shall not discharge such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public; or which endanger the comfort, repose, health or safety of any such persons or the public; or which cause or have a natural tendency to cause injury or damage to business or property. [*H&SC §41700; District Rule 104(A)(1)*]
62. The Permittee shall not discharge into the atmosphere from any source whatsoever any air contaminant which is in excess of twenty (20) percent opacity, or as dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, calculated as a six minute average. Opacity observations shall be taken and recorded as described in EPA Reference Method 9. [*District Rule 104(B)(3)*]
63. The handling, transporting, or open storage of material in such a manner which allows unnecessary amounts of particulate matter to become airborne shall not be permitted. Reasonable precautions shall be taken to prevent particulate matter from becoming airborne. [*District Rule 104(D)*]
64. All equipment regulated by this Permit shall at all times be maintained in good working order, and shall be operated as efficiently as possible so as to ensure compliance with all applicable emission limits. For purposes of compliance with this requirement, good working order, efficient operation, and proper maintenance shall mean the implementation of all protocols, procedures, and activities recommended by the device manufacturer or those required by this Permit.

## RECORDS & TRAINING

65. The Permittee shall provide training and instruction to all affected contractor(s), subcontractor(s), and employee(s). Training shall include the identification of all the requirements contained within this Permit, and the appropriate method to be used to comply with the permit conditions. Training shall occur prior to any of the contractor(s), subcontractor(s), or employee(s) constructing or operating equipment authorized by this permit. Records documenting the persons receiving instruction and the instruction materials shall be made available to the APCO upon request. [*District Rule 102*]
66. The Permittee shall furnish to the APCO any information that the District may request to determine compliance with this Permit or whether cause exists for modifying, revoking and reissuing, or terminating this Permit. Upon request, Permittee shall also furnish to the District copies of records required to be kept by this Permit. The information and records shall be submitted within the time period determined by the APCO. [*H&SC §42303; District Rule 103(F)*]
67. The Permittee shall record the following information in the event of an equipment breakdown or malfunction of Authorized Equipment which creates, causes, or results in a violation any emission limitation or restriction prescribed by District Rules or State law: date and time of event; event duration; a description of event; the cause of the event; what corrective measures were taken, including what actions were taken to prevent re-occurrence; if corrective actions were unsuccessful, what additional measures should be taken in the future; and the quantity of excess emissions released during the event. The Permittee shall report the information listed above to the District within 10 days of when the breakdown event was corrected. If the Permittee reports the event to the District in within one hour of its detection pursuant to Rule 105(E)(2), the APCO may elect to not take enforcement action if the requirements of Rule 105(E) are satisfied. [*District Rule 105(E)*]

## PERMIT TERM

68. The Title V permit expiration terminates the Permittee's right to operate the stationary sources itemized in this permit unless a timely and complete Title V permit application for renewal has been submitted in accordance with District Regulation V Rule 502(B)(2), in which case the existing Title V permit will remain in effect until the Title V permit renewal has been issued or denied. [*District Rule 502(A)(2)*]

## FEDERALLY ENFORCEABLE EQUIPMENT SPECIFIC REQUIREMENTS

The information specified under this section is enforceable collectively and severally by the District, U.S. EPA, and the public.

### AUTHORIZED EQUIPMENT

69. This permit authorizes the operation of the equipment and specific components listed in Table 1 and 2. For each of the reciprocating internal combustion engines S-1 through S-10, both a Selective Catalytic Reduction system (SCR) and an oxidation catalyst are authorized and shall be designated “A-(engine number) SCR” and “B-(engine number) oxidation catalyst respectively”.  
*[District Rule 504(B)(1)]*

**Table 1 - Authorized Emission Devices (Humboldt Bay Generating Station)**

Unit No.	Equipment	Nominal Size
S-1	Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #1, equipped with lean burn technology, abated by A-1 SCR and B-1oxidation catalyst	148.9 MMBtu/hr 16.3 MW 22,931 BHp
S-2	Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #2, equipped with lean burn technology, abated by A-2 SCR and B-2 oxidation catalyst	148.9 MMBtu/hr 16.3 MW 22,931 BHp
S-3	Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #3, equipped with lean burn technology, abated by A-3 SCR and B-3 oxidation catalyst	148.9 MMBtu/hr 16.3 MW 22,931 BHp
S-4	Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #4, equipped with lean burn technology, abated by A-4 SCR and B-4 oxidation catalyst	148.9 MMBtu/hr 16.3 MW 22,931 BHp
S-5	Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #5, equipped with lean burn technology, abated by A-5 SCR and B-5 oxidation catalyst	148.9 MMBtu/hr 16.3 MW 22,931 BHp
S-6	Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #6, equipped with lean burn technology, abated by A-6 SCR and B-6 oxidation catalyst	148.9 MMBtu/hr 16.3 MW 22,931 BHp
S-7	Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #7, equipped with lean burn technology, abated by A-7 SCR and B-7 oxidation catalyst	148.9 MMBtu/hr 16.3 MW 22,931 BHp
S-8	Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #8, equipped with lean burn technology, abated by A-8 SCR and B-8 oxidation catalyst	148.9 MMBtu/hr 16.3 MW 22,931 BHp
S-9	Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #9, equipped with lean burn technology, abated by A-9 SCR and B-9 oxidation catalyst	148.9 MMBtu/hr 16.3 MW 22,931 BHp
S-10	Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #10, equipped with lean burn technology, abated by A-10 SCR and B-10 oxidation catalyst	148.9 MMBtu/hr 16.3 MW 22,931 BHp
S-11	Caterpillar C-15 Diesel-fired Emergency IC Engine, serial number FSE02399, powering an emergency generator	546 HP
S-12	Cummins CFP9E-F20 Diesel-fired Emergency IC Engine, serial number 73070231, powering a fire water pump	268 HP

**Table 2 - Authorized Control Devices**

Control Equipment	Manufacturer	Model	Specifications
Oxidation Catalyst	HUG Engineering (or equivalent)	OCT-0806-040-0062/450 (or equivalent)	Catalyst: Platinum Inlet Temperature: 608 °F to 908 °F Outlet Temperature: 608 °F to 908 °F Max Flow: 143,000 acfm Control Efficiency: 13ppmvd CO @15%O <sub>2</sub> while in NG Mode; 20ppmvd CO @15%O <sub>2</sub> while in Diesel Mode
Selective Catalytic Reduction System	HUG Engineering (or equivalent)	RFV-0890-040-200/300 (or equivalent)	Catalyst: Vanadium Pentoxide Inlet Temperature: 608 °F to 908 °F Outlet Temperature: 608 °F to 908 °F Max Flow: 143,000 acfm Control Efficiency: 6ppmvd NOx @15%O <sub>2</sub> while in NG Mode; 35ppmvd NOx @15%O <sub>2</sub> while in Diesel Mode

70. The Permittee shall not modify reciprocating engines S-1 through S-10 in such a manner so as to exceed the Heat Input Capacities, or deviate from the nominal full-load design specifications as submitted in the AFC, and as identified in Table 3. Further, Natural Gas Mode heat input shall be the sum of the Higher Heating Values of the natural gas and diesel supplied. The diesel pilot heat input (total diesel supplied) for each engine shall not exceed 2.0 MMBtu/hr calculated on a three hour rolling average basis. *[District Rule 102(E); 17 CCR §93115 PSD 2/09]*

**Table 3 - Specifications for Engines S-1 through S-12**

Engines S-1 through S-10	
Primary Fuel	Natural Gas
Backup Fuel	CARB Diesel
Design Ambient Temperature	67.5 °F
Natural Gas Mode (HHV)	144.7 MMBtu/hr natural gas plus pilot fuel
Diesel Mode (HHV)	148.9 MMBtu/hr CARB Diesel Fuel
Nominal Exhaust Temperature	728°F
Nominal Exhaust Flow Rate	121,500 acfm
Exhaust Release Height	100 Feet (above grade)
Exhaust O <sub>2</sub> Concentration, dry volume	11.6% (Nominal)
Exhaust CO <sub>2</sub> Concentration, dry volume	5.3% (Nominal)
Emission Controls	Lean Burn Technology and SCR; Oxidation Catalyst
SIC	4911
SCC	20100202 natural gas mode; 20100301 diesel mode



Table 3 Continued.

Engine S-11	
Primary Fuel	CARB Diesel
Nominal Heat Input Rate (HHV)	4.0 MMBtu/hr
Heat Input, gal/hr	29.1
SIC	4911
SCC	20100301
Engine S-12	
Primary Fuel	CARB Diesel
Nominal Heat Input Rate (HHV)	1.94 MMBtu/hr
Heat Input, gal/hr	14.2
SIC	4911
SCC	20201607

71. The Permittee shall only fire reciprocating engines S-1 through S-10 with fuel which meets or exceeds the fuel specifications identified in Tables 4. Prior to firing reciprocating engines S-1 through S-10 with an Alternative Fuel or CARB Diesel with additives, the Permittee shall make a request to the APCO to switch fuel types. The request shall include all necessary information to characterize emission changes which may occur as a result of the change. The Permittee shall not fire reciprocating engines S-1 through S-10 with a liquid fuel other than CARB Diesel without prior approval from the APCO. *[District Rule 102(E); PSD 2/09]*

Table 4 - Fuel Specifications for Engines S-1 through S-10

Fuel Type	Property	Value
Natural Gas	Sulfur Content	< 1 gr / 100scf per test; annual average <0.33gr/100scf
CARB Diesel	Sulfur Content	< 15 ppm

72. Reciprocating engines S-1 through S-10 shall be equipped with a monitoring system capable of measuring and recording hours of operation (in tenths of an hour) and fuel consumption (in cubic feet and gallons) while operating in natural gas mode and diesel mode. The measuring devices shall be accurate to plus or minus 1% at full scale, and shall be tested/calibrated at least once every twelve months for natural gas fuel meters, and once every 24 months for diesel fuel flow meters. Measuring devices shall be tested/calibrated at more frequent intervals if necessary to ensure compliance with the 1% accuracy requirement. *[District Rule 102(E); PSD 2/09]*
73. The exhaust stacks shall not be fitted with rain caps or any other similar device which would impede vertical exhaust flow. *[District Rule 102(E); PSD 2/09]*

74. The Permittee shall install and maintain a non-resettable hour meter with a minimum display capability of 9,999 hours upon the Emergency IC Diesel Engines S-11 and S-12. [*District Rule 102(E)*]
75. The Emergency IC Diesel Engines S-11 and S-12 shall use one of the following fuels:
  - a. CARB Diesel Fuel, or
  - b. An alternative diesel fuel that meets the requirements of the Verification Procedure (as codified in CCR Title 13 Sections 2700-2710), or
  - c. CARB Diesel Fuel used with fuel additives that meets the requirements of the Verification Procedure (as codified in CCR Title 13 Sections 2700-2710), or
  - d. Any combination of a) through c) above.
76. The Permittee shall install and maintain exhaust gas temperature monitoring devices at the inlet and the outlet of the oxidation catalyst. [*40 CFR §63.6625; PSD 2/09 BACT*]
77. Ammonia injection points shall be equipped with operational ammonia flow meters and injection pressure indicators. The flow meters shall be accurate to plus or minus 1% at full scale and shall be tested/calibrated at least once every twelve months, or at more frequent intervals if necessary to ensure compliance with the 1% requirement. [*District Rule 102(E); PSD 2/09*]
78. The Permittee shall install points of access to the Emission Devices, Control Devices, and Continuous Emission Monitoring Devices such that source testing in accordance with the appropriate reference test methods can be performed. All points of access shall conform to the latest Cal-OSHA safety standards. For purposes of compliance with this part, appropriate test methods shall mean the test methods identified in the Testing and Compliance Monitoring Conditions Section of this Permit; and the collection of gas samples with a portable NO<sub>x</sub>, CO, and O<sub>2</sub> analyzer. Sample collection ports shall be located in accordance with 40 CFR Part 60 Appendix A, and with the CARB document entitled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Emission Monitoring and Testing. [*District Rule 102(E); PSD 2/09*]
79. Each reciprocating engine S-1 through S-10 shall be equipped with a continuous emission monitor (CEM) for NO<sub>x</sub>, CO, and O<sub>2</sub>. Continuous emissions monitor(s) shall meet the requirements of 40 CFR part 60, Appendices B and F, and District-approved protocol during normal operations. The monitors shall be designed and operated so as to be capable of monitoring emissions during normal operating conditions and during Startup and Shutdowns Periods. [*District Regulations Appendix B; PSD 2/09*]
80. The Permittee shall demonstrate compliance with the ammonia slip limit by using the following calculation procedure: The ammonia injection rate to each SCR control system shall be continuously recorded. Correlations between the engine heat input rates, the SCR system ammonia injection rates, and corresponding ammonia emission concentration shall be determined for each fuel in accordance with the Testing and Compliance Monitoring Section of this Permit. Alternatively, the Permittee may be required to install, operate and maintain a

continuous in-stack emissions monitor for emissions of ammonia. The Permittee shall obtain APCO approval for the installation and use the ammonia CEMs equipment at least 60 days prior to the planned installation date. [District Rule 103(F)]

EMISSION LIMITING CONDITIONS

- 81. The Permittee shall not discharge particulate matter into the atmosphere from any combustion source in excess of 0.20 grains per cubic foot of dry gas calculated to 12 percent CO<sub>2</sub> at standard conditions. [District Rule 104(C)(1)]
- 82. The Permittee shall not discharge sulfur dioxide into the atmosphere from reciprocating engines S-1 through S-12 such in excess of 1000 ppmv for any single device or more than 40 tons per year as a combination of all devices. [District Rule 104(E)]
- 83. Visible emissions from reciprocating engines S-1 through S-12 shall not be as dark or darker in shade as that designated as No. 1 on the Ringleman Chart, or of such opacity so as to obscure an observer’s view to a degree equal to or greater than 20%, for any period or periods aggregating more than 3 minutes in any one hour. [District Rule 104(B)(3)]
- 84. The Permittee shall not operate reciprocating engines S-1 through S-12 such that the emissions of NO<sub>x</sub>, from a combination of all engines, exceeds 392 lbs per hour. Furthermore, the Permittee shall not operate reciprocating engines S-1 through S-10 such that more than 2 units are in a Diesel Startup Period during any one Clock Hour. [District Rule 102(E); PSD 2/09 ]
- 85. The Permittee shall not discharge diesel particulate matter from reciprocating engines S-1 through S-10 while operating in Diesel Mode such that emissions of Diesel Particulate Matter exceed 0.11 g/bhp-hr for each engine. [NSPS 40 CFR Part 60 Subpart IIII]
- 86. The Permittee shall not discharge Carbon Monoxide from reciprocating engines S-1 through S-10 in excess of 0.14 g/bhp-hr or 20 ppmv @ 15% O<sub>2</sub>. [40 CFR 63 Subpart ZZZZ, District Rule 110]

HEAT INPUT & FUEL LIMITATIONS

- 87. The Permittee shall not operate reciprocating internal combustion engines S-1 through S-10 in such a manner so as to exceed the heat input capacities listed in Table 5 on a per engine basis. Further, the Permittee shall not operate S-1 through S-10 such that diesel pilot heat input per engine exceeds 2.0 MMBtu/hr on a rolling three hour average basis. [District Rule 102(E); 17 CCR §93115; PSD 2/09]

Table 5 - Heat Input Limitations Per Engine

Each Unit	Heat Input, MMBtu (HHV)	
	Hourly (3 hr Rolling Average)	Daily (Calendar Day)
Natural Gas Mode	144.7	3,473
Diesel Mode	148.9	3,574

88. The Permittee shall not operate reciprocating internal combustion engines S-1 through S-10 in such a manner so as to exceed the heat input capacities listed in Table 6 below calculated as a sum of all 10 engines. Further, while operating in Natural Gas Mode, the percentage of heat input derived from diesel shall not exceed 5% on an annual basis (calendar year). [District Rule 102(E); 17 CCR §93115; PSD 2/09]

**Table 6 - Heat Input Limitations S-1 Through S-10 Engines Combined**

Sum of All 10 Units	Heat Input, MMBtu (HHV)
	Annual (Calendar Year)
Natural Gas Mode <sup>1</sup>	9,328,809
Diesel Mode	148,900

Note: 1) Total Heat Input in Natural Gas Mode is the sum of natural gas and diesel pilot.

89. The Permittee shall not exceed the diesel fuel firing limits while operating reciprocating engines S-1 through S-10 in the modes listed in Tables 7 and 8 below. [District Rule 102(E); PSD 2/09]
- a. Natural Gas Mode.

**Table 7 - Diesel Fuel Firing Limitations (Pilot)**

Engines S-1 Through S-10	Gallons of Diesel Fuel		
	Hourly (3 Hr Rolling Average)	Daily (Calendar Day)	Annual (365 Day Rolling Average)
All Combined	146	3,504	376,734

- b. Diesel Mode

**Table 8 - Diesel Fuel Firing Limitations**

Engines S-1 Through S-10	Gallons of Diesel Fuel		
	Hourly (3 Hr Rolling Average)	Daily (Calendar Day)	Annual (365 Day Rolling Average)
Per Engine	1,088	26,106	-
All Combined	10,876	221,877	1,087,630

**EMISSION LIMITS**

**S-1 to S-10 Startup & Shutdown Periods**

90. The Permittee shall not operate reciprocating engines S-1 through S-10, such that they individually discharge pollutants exceeding the limits identified in Table 9 below during Startup or Shutdown Periods. *[District Rule 102(E); PSD 2/09]*

**Table 9 - Start & Shutdown Period Emission Limits**

Mode of Operation	Pollutant				
	NOx	CO	ROC	PM <sub>10</sub>	SOx
Natural Gas, lb/hr	23.6	24.1	17.9	3.6	0.4
Diesel Mode, lb/hr	164	25.5	17.2	5.5	0.22

**S-1 to S-10 Natural Gas Mode**

91. The Permittee shall not operate reciprocating engines S-1 through S-10, such that they individually discharge pollutants exceeding the limits identified in Table 10 below based upon a three (3) hour rolling average with the exception of NOx which shall be based upon a one (1) hour average. The limits shall not apply during Startup or Shutdown Periods. *[40 CFR 63.6(f)(1), District Rule 102(E); PSD 2/09]*

**Table 10 - Natural Gas Mode Emission Limits**

Pollutant	Emission Rate (per engine)		
	ppmvd @ 15% O <sub>2</sub>	lb/hr	lb/MMBtu
CO	13	4.13	0.029
NH <sub>3</sub>	10	1.9	0.013
NOx	6.0	3.1	0.022
PM <sub>10</sub>	-	3.6	-
ROC	28	5.1	0.035
SOx	-	0.40	0.0028

92. The combined discharge of pollutants, from the reciprocating engines S-1 through S-10 shall not exceed the limits listed in Table 11 below during any Calendar Day in which none of the engines are operated in Diesel Mode for any period of time. For purposes of compliance with this condition, the emissions from Startup and Shutdown Periods shall be included in the daily calculation of emissions. *[District Rule 102(E); PSD 2/09]*

**Table 11 - S-1 Through S-10 Combined Natural Gas Mode Daily Limits**

Pollutant	Emission Rate (lb/day)
CO	1,589
NH <sub>3</sub>	456
NO <sub>x</sub>	1,360
PM <sub>10</sub>	864
ROC	1,608
SO <sub>x</sub>	97

93. - Reserved

**S-1 to S-10 Diesel Mode**

94. The Permittee shall not discharge pollutants into the atmosphere from the reciprocating engines S-1 through S-10 while in Diesel Mode, based upon a three (3) hour rolling average, in excess of the emission limits identified in Table 12 below. The limits shall not apply during Startup or Shutdown Periods. *[District Rule 102(E); 40 CFR 63.6(f)(1); PSD 2/09]*

**Table 12 - Diesel Mode Emission Limits**

Pollutant	Emission Rate (per engine)		
	ppmvd @ 15% O <sub>2</sub>	lb/hr	lb/MMBtu
CO	20.0	6.9	0.047
NH <sub>3</sub>	10	2.1	0.014
NO <sub>x</sub>	35.0	19.9	0.134
PM <sub>10</sub>	-	5.5	0.137
ROC	40.0	7.9	0.053
SO <sub>x</sub>	0.40	0.22	0.0016

95. The discharge of Diesel Particulate Matter into the atmosphere from the reciprocating engines S-1 through S-10 while in Diesel Mode shall not exceed the emission limits identified in Table 13 below. *[District Rule 102(E); PSD 2/09]*

**Table 13 - Diesel Particulate Matter Limitations**

Engines S-1 Through S-10	Diesel Particulate Matter (pounds)		
	Hourly (3 hr Rolling Average)	Daily (Calendar Day)	Annual (365 Day Rolling Average)
Per Engine	5.56	133.4	-
All Combined	55.6	1,334	5,560

96. The combined discharge of pollutants from the reciprocating engines S-1 through S-10 shall not exceed the limits listed in Table 14 below during any Calendar Day in which one or more of the engines are operated in diesel mode for any period of time. *[District Rule 102(E); PSD 2/09]*

**Table 14 - S-1 Through S-10 Combined Diesel Mode Daily Limits**

Pollutant	Emission Rate (lb/day)
CO	2,219
NH <sub>3</sub>	506
NO <sub>x</sub>	9,103
PM <sub>10</sub>	1,542
ROC	2,183
SO <sub>x</sub>	97

97. - Reserved

98. The combined discharge of pollutants from the reciprocating engines S-1 through S-10 during any calendar year shall not exceed the limits listed in Table 15 below. *[District Rule 102(E); PSD 2/09]*

**Table 15 - S-1 Through S-10 Combined Annual Emission Limits**

Pollutant	Emission Rate (tons/yr)
CO	172.7
NH <sub>3</sub>	63.3
NO <sub>x</sub>	179.1
PM <sub>10</sub>	119.8
ROC	190.8
SO <sub>x</sub>	4.3

**Engines S-11 and S-12**

99. The Permittee shall not operate engines S-11 and S-12 such that pollutant discharge into the atmosphere exceeds the quantities in Table 16 below. *[District Rule 102(E)]*

**Table 16 - Engines S-11 and S-12 Emission Limits**

Unit	Pollutant	g/hp – hr	lb/hr
S-11 Emergency Generator	CO	0.63	0.65
	DPM	0.05	0.05
	NOx	3.47	3.59
	ROC (non-methane HC)	0.4	0.41
	SOx	-	.0061
S-12 Fire Pump	CO	0.59	.27
	DPM	0.14	0.06
	NOx	4.9	2.27
	ROC (non-methane HC)	0.5	0.23
	SOx	-	0.0026

100. The combined discharge of pollutants from the engines S-11 through S-12 during any calendar year shall not exceed the limits listed in Table 17 below. *[District Rule 102(E)]*

**Table 17 - S-11 and S-12 Combined Annual Emission Limits**

Pollutant	Emission Rate Lbs/Yr
CO	45
NOx	287
DPM	5.5
ROC	31.5
SOx	0.4

101. In the event of an excess emission incident, regardless of the cause, the Permittee shall take immediate corrective action to minimize the release of excess emissions. Notice shall be provided to the District as indicated in the Reporting and Recordkeeping Section of this Permit. For purposes of compliance with this condition, excess emissions shall mean discharge of pollutants in quantities which exceed those authorized by Federal, State, District Rules, and this Permit. *[40 CFR 70.6(a)(3)(iii)(B); District Rule 105]*



## OPERATIONAL CONDITIONS

102. All equipment listed in Table 1 Authorized Emission Devices and Table 2 Authorized Control Devices shall be operated and maintained by the Permittee in accordance with manufacturer's specifications for optimum performance; and in a manner so as to minimize emissions of air contaminants into the atmosphere. *[District Rule 102(E); PSD 2/09]*
103. The Permittee shall implement and maintain a written Startup, Shutdown, and Malfunction Plan as described in 40 CFR 63.6(e) (3) which contains specific procedures for maintaining the reciprocating engines S-1 through S-12, their associated control devices, their associated CEMS, sensors, measuring devices, and their associated exhaust gas duct work, during periods of startup, shutdown, and malfunction. The plan must clearly describe the startup and shutdown sequence procedure for each unit. The Plan shall also include a specific program of corrective actions to be implemented in the event of a malfunction in either the process or control systems. Modifications to the Plan are subject to APCO approval and the Permittee shall not operate the reciprocating engines S-1 through S-12 and their associated control devices unless a District approved Startup, Shutdown, and Malfunction Plan is in effect. *[District Rule 102(E); PSD 2/09]*
104. The Permittee shall develop, implement and maintain a written Device Operational Plan that contains specific procedures for operating the reciprocating engines S-1 through S-12, their associated control devices, their associated CEMS, sensors, measuring devices, and their associated exhaust gas duct work under the varying load conditions which may occur during normal modes of operation. The Plan shall also include specific protocols to be followed when transitioning between modes of operation. This plan shall be consistent with the requirements of this Permit, and all local, state and federal laws, rules, and regulations. The plan shall include, but not be limited to, daily system integrity inspections and the recording of operational parameters. The Plan is subject to APCO approval. The Permittee shall not operate the reciprocating engines S-1 through S-12 and their associated control devices unless a District approved Device Operational Plan is in effect. *[District Rule 102(E); PSD 2/09]*
105. The Permittee shall develop, implement and maintain a written Device Maintenance & Replacement Plan that contains specific procedures for equipment maintenance and identifies replacement intervals for components of the reciprocating engines S-1 through S-12, their associated control devices, their associated CEMS, sensors, measuring devices, and their associated exhaust gas duct work. The Plan is subject to APCO approval. The Permittee shall not operate the reciprocating engines S-1 through S-12 and their associated control devices unless a District approved Device Maintenance & Replacement Plan is in effect. *[District Rule 102(E); PSD 2/09]*
106. The Permittee shall only operate the Reciprocating engines S-1 through S-10 in Natural Gas Mode except during Maintenance and Testing, and during Natural Gas Curtailments as set forth in this permit. *[District Rule 102(E); PSD 2/09]*
107. The Permittee shall not operate reciprocating engines S-1 through S-10 such that Startup Periods exceed 60 minutes in length. *[District Rule 102(E); PSD 2/09]*

108. The Permittee shall not operate reciprocating engines S-1 through S-10 such that Shutdown Periods exceed 30 minutes in length. *[District Rule 102(E); PSD 2/09]*
109. The Permittee shall not operate the reciprocating engines S-1 through S-10 such that the combined hours of operation during Startup and Shutdown Periods exceeds 30 engine-hours per day. *[District Rule 102(E); PSD 2/09]*
110. The Permittee shall not operate the reciprocating engines S-1 through S-10 such that the combined hours of operation during Startup and Shutdown Periods exceeds 3,650 engine-hours per calendar year. Of the 3,650 engine hours available hours, the hours of operation during Startup and Shutdown Periods in Diesel Mode shall not exceed 500 engine-hours per calendar year. *[District Rule 102(E); PSD 2/09]*
111. The Permittee shall not operate any of the reciprocating engines S-1 through S-10 below 50% load except during Startup and Shutdown Periods. *[District Rule 102(E); PSD 2/09]*
112. The Permittee shall not operate the reciprocating engines S-1 through S-10 for more than 80 engine-hours per Calendar Day at loads less than 12.0 MW. *[District Rule 102(E); PSD 2/09]*
113. While operating the reciprocating engines S-1 through S-10 in Diesel Mode, the Permittee shall fire the engines: *[District Rule 102(E); PSD 2/09]*
  - a. Only with CARB Diesel as specified in Table 3 Fuel Specifications for S-1 through S-10;
  - b. For not more than 50 hours per year for maintenance and testing per engine; and
  - c. Such that the combined engine operating hours do not exceed 1,000.0 engine hours per year on a 365 day rolling average basis.
114. For each Oxidation Catalyst installed, during the performance testing required pursuant to the Testing and Monitoring Section of this Permit, the Permittee shall determine the pressure drop across each catalyst. The Permittee shall operate the reciprocating engines S-1 through S-10 such that the pressure drop across the catalyst does not exceed the following acceptable range for any period of time: The acceptable pressure range is two inches of water column (plus or minus 10%) deviation from the pressure drop established during performance testing. This Condition shall not apply during Startup or Shutdown Periods. *[40 CFR 63 Subpart ZZZZ]*
115. The Permittee shall not operate reciprocating engines S-1 through S-10 if the inlet temperature of the oxidation catalyst is outside of the acceptable operating range for any period of time. The acceptable operating range of the oxidation catalyst is greater than or equal to 450 °F and less than or equal to 1350 °F. Each reciprocating engine is paired with a single oxidation catalyst unit. For purposes of compliance with this condition, each engine and catalyst pair is evaluated separately. This Condition shall not apply during Startup or Shutdown Periods. *[40 CFR 63 Subpart ZZZZ]*
116. The Permittee shall not operate reciprocating engines S-1 through S-10 unless the CO emissions from the units are abated by the oxidation catalyst at a rate greater than or equal to 70% over uncontrolled emission levels, calculated on a 3 hour rolling average. Verification of the emissions reduction shall be completed in accordance with 40 CFR 63 Subpart ZZZZ. *[40 CFR 63 Subpart ZZZZ]*

**Engines S-11 and S-12**

- 117. The Permittee shall not operate engines S-11 and S-12 for the purpose of maintenance and testing, within the same Calendar Day. *[District Rule 102(E); PSD 2/09]*
- 118. The Permittee shall not operate engines S-11 and S-12, for the purpose of maintenance and testing, in excess of the hour limits listed in Table 18 below *[District Rule 102(E)]*:

**Table 18 - S-11 and S-12 Hourly Operating Limits**

Device	Daily	1 <sup>st</sup> Quarter	2 <sup>nd</sup> Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter
S-11	1	12	12	13	13
S-12	1	12	12	13	13

- 119. The Permittee shall not operate the engines S-11 and S-12, for the purpose of maintenance and testing, when any of the reciprocating engines S-1 through S-10 are operating in diesel mode. *[District Rule 102(E)]*
- 120. The Permittee shall not operate reciprocating engine S-11, for the purpose of maintenance and testing, for more than 45 minutes in any Clock Hour. *[District Rule 102(E); PSD 2/09]*
- 121. The Emergency IC Diesel Generators S-11, and S-12 shall use one of the following fuels:
  - a. CARB Diesel Fuel, or
  - b. An alternative diesel fuel that meets the requirements of the Verification Procedure (as codified in CCR Title 13 Sections 2700-2710), or
  - c. CARB Diesel Fuel used with fuel additives that meets the requirements of the Verification Procedure (as codified in CCR Title 13 Sections 2700-2710), or
  - d. Any combination of a) through c) above.
- 122. The Emergency IC Diesel Generators S-11, and S-12 are authorized the following maximum allowable annual hours of operation as listed in Table 19 below. *[17 CCR §93115]*

**Table 19 - Hours of Operation for Emergency IC Diesel Generators S-11 & S-12**

Emergency Use	Non-Emergency Use	
	Emission Testing to show compliance	Maintenance & Testing
Not Limited by the ATCM	Not Limited by the ATCM	50 hours/year

## REPORTING & RECORDKEEPING

### **Engines S-1 through S-12**

123. The Permittee shall report all occurrences of breakdowns of the equipment listed in Table 1 Authorized Emission Devices or Table 2 Authorized Control Devices which result in the release of emissions in excess of the limits identified in this Permit. Said report shall be submitted to the District in accordance with the timing requirements of District Rule 105(D).
124. The Permittee shall maintain a Breakdown log that describes the breakdown or malfunction, includes the date and time of the malfunction, the cause of the malfunction, corrective actions taken to minimize emissions and the date and time when the malfunction was corrected. *[District Rule 105(D)]*
125. The Permittee shall immediately record the following information when an event occurs where emissions from the equipment listed in Table 1 Authorized Emission Devices are in excess of any limits incorporated within this permit:
  - a. Date and time of the excess emission event,
  - b. Duration of the excess emission event,
  - c. Description of the condition or circumstance causing or contributing to the excess emission event,
  - d. Emission unit or control device or monitor affected,
  - e. Estimation of the quantity and type of pollutants released,
  - f. Description of corrective action taken, and
  - g. Actions taken to prevent reoccurrence of excess emission event.
126. The Permittee shall provide to the District, a completed "Compliance Certification" form signed by the Facility's Responsible Official which certifies the compliance status of the facility twice per calendar year. The compliance certification forms (VK series) must be submitted to the District according to the following schedule: The semiannual certification (covering quarters 1 and 2) must be submitted prior to July 31<sup>st</sup> of the reporting year; and the annual certification (covering quarters 1, 2, 3, and 4) prior to March 1<sup>st</sup> of the following calendar year. The content of the Annual Certification shall include copies of the records designated in Table 20 to be kept "Annually".
127. The Permittee shall maintain a log of usage for the Emergency IC Diesel Generators S-11 and S-12 in accordance with applicable Reporting Requirements for Emergency Standby Engines, Item (e)(4)(I) of Section 93115, Title 17, California Code of Regulations, Air Toxic Control Measure (ATCM) for Stationary Compression Ignition (CI) engines. The log of usage shall list and document the nature of use for each operational event category listed below by recording the beginning and ending hour meter readings and time of day of each operational event:
  - a. Emergency use hours of operation;
  - b. Maintenance and testing hours of operation (e.g., load testing, weekly testing, rolling blackout, general power outage, etc
  - c. Hours of operation for emission testing to show compliance with §93115(e)(2)(A)3 and (e)(2)(B)3 of the ATCM;
  - d. Hours of operation to comply with requirements of NFPA 25;
  - e. Hours of operation for all other uses other than those specified in section (e)(2)(A)3 and (e)(2)(B)3 of the ATCM;

- f. Fuel used through the retention of fuel purchase records that account for all fuel used in the engine and all fuel purchased for use in the engine, and, at a minimum, contain the following information for each individual fuel purchase transaction:
- i. Identification of the fuel purchased as either CARB Diesel, or an alternative diesel fuel that meets the requirements of the Verification Procedure;
  - ii. Sulfur content of the fuel;
  - iii. Amount of fuel purchased;
  - iv. Date when the fuel was purchased;
  - v. Signature of owner or operator or representative of Permittee who received the fuel; and
  - vi. Signature of fuel provider indicating fuel was delivered.

128. The Permittee shall continuously maintain onsite for the most recent five year period and shall be made available to the District APCO upon request, the records as listed in Table 20 below.

**Table 20 - Required Records for Engines S-1 through S-10**

Frequency	Information to be Recorded
Upon Occurrence	A. Records of maintenance conducted on engines (40 CFR 60 Subpart IIII) B. Time, duration, and fuel firing mode for each engine startup C. Time, duration, and fuel firing mode for each engine shutdown D. Time, duration and reason for each period of operation in Diesel Mode E. For each bulk delivery of diesel fuel received, certification from the supplier that the diesel fuel meets or exceeds CARB Diesel specifications F. For each bulk delivery of diesel fuel received, the higher heating value (HHV) and sulfur content of the fuel G. Fuel Mode – each operating minute shall be designated as either “Natural Gas” or “Diesel Mode”
At least one electronic reading every 15 minutes	A. NO <sub>x</sub> (ppmvd @15% O <sub>2</sub> ) B. CO (ppmvd @15% O <sub>2</sub> ) C. O <sub>2</sub> (%) D. Exhaust gas temperature as SCR inlet (°F) E. Exhaust gas temperature at OC inlet (°F) F. Engine load (%)
Hourly (for each engine)	A. NO <sub>x</sub> - ppmvd @15% O <sub>2</sub> , lb/hr, and lb/MMBtu - all on a 1 hour average basis B. CO - ppmvd @15% O <sub>2</sub> , lb/hr, and lb/MMBtu - all on a rolling 3 hour average basis C. ROC - ppmvd @15% O <sub>2</sub> , lb/hr, and lb/MMBtu -all on a rolling 3 hour average basis D. NH <sub>3</sub> - ppmvd @15% O <sub>2</sub> , lb/hr, and lb/MMBtu -all on a rolling 3 hour average basis E. SO <sub>x</sub> - ppmvd @15% O <sub>2</sub> , lb/hr, and lb/MMBtu –all on a rolling 3 hour average basis F. Natural gas fuel consumption during Natural Gas Mode (MMBtu HHV, hourly average) G. Diesel fuel consumption during Natural Gas Mode (MMBtu HHV, hourly average) H. Percentage of total heat input derived from diesel during Natural Gas Mode (MMBtu HHV, hourly average) I. Diesel fuel consumption during Diesel Mode (MMBtu HHV, hourly average)

Frequency	Information to be Recorded
Daily	<ul style="list-style-type: none"> <li>A. NO<sub>x</sub> (lbs/day, total for all engines)</li> <li>B. CO (lbs/day, total for all engines)</li> <li>C. ROC (lbs/day, total for all engines)</li> <li>D. SO<sub>x</sub> (lbs/day, total for all engines)</li> <li>E. PM<sub>10</sub> (lbs/day, total for all engines)</li> <li>F. Diesel Particulate Matter (lbs/day, total for all engines)</li> <li>G. Natural gas fuel consumption (MMBtu HHV, and cubic feet consumed) for each engine and the total for all engines)</li> <li>H. Diesel pilot fuel consumption (MMBtu HHV, all engines combined)</li> <li>I. Diesel fuel consumption during Diesel Mode (MMBtu HHV, and gallons for each engine and total for all engines)</li> <li>J. Engine load – For all engines over the calendar day, the total hours operated at less than 12 MW.</li> <li>K. Hours of operation – Total for each engine and total for all engines as a sum of operating minutes)</li> </ul>
Monthly	<ul style="list-style-type: none"> <li>A. Sulfur content of natural gas (gr/100 scf, monthly fuel testing)</li> <li>B. Natural gas sulfur content (gr/100 scf, 12 month rolling average)</li> </ul>
Quarterly (combined total for all engines)	<ul style="list-style-type: none"> <li>A. NO<sub>x</sub> (tons)</li> <li>B. CO (tons)</li> <li>C. SO<sub>x</sub> (tons)</li> <li>D. ROC(tons)</li> <li>E. PM (tons)</li> <li>F. Diesel Particulate Matter (tons)</li> <li>G. Natural gas fuel consumption (MMBtu HHV, and cubic feet)</li> <li>H. Diesel pilot fuel consumption (MMBtu HHV, and gallons)</li> <li>I. Diesel fuel consumption during Diesel Mode (MMBtu HHV, and gallons)</li> <li>J. Sulfur content of natural gas (gr/100 scf, 12 month rolling average)</li> <li>K. Hours of operation (for each fuel mode)</li> </ul>
Annually (combined total for all engines)	<ul style="list-style-type: none"> <li>A. NO<sub>x</sub> (tons)</li> <li>B. CO (tons)</li> <li>C. SO<sub>x</sub> (tons)</li> <li>D. ROC(tons)</li> <li>E. PM (tons)</li> <li>F. Diesel Particulate Matter (tons)</li> <li>G. Natural gas fuel consumption (MMBtu HHV, and cubic feet)</li> <li>H. Diesel pilot fuel consumption (MMBtu HHV, and gallons)</li> <li>I. Diesel fuel consumption during Diesel Mode (MMBtu HHV, and gallons)</li> <li>J. Sulfur content of natural gas (gr./100 scf, annual average)</li> <li>K. Hours of operation (for each fuel mode)</li> </ul>

129. For each Quarter, the Permittee shall submit a written report to the APCO detailing the following items for the operation of the CEMS. The report shall conform to the requirements of District Rules and Regulations Appendix B, Section 2.2, and shall be submitted within 30 days of the end of the quarter.
- a. Time intervals;
  - b. Date and magnitude of excess emissions;
  - c. Nature and cause of excess (if known);
  - d. Corrective actions taken and preventive measures adopted;
  - e. Averaging period used for data reporting shall correspond to the averaging period for each respective emission standard;
  - f. Applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and
  - g. A negative declaration when no excess emissions occurred.
130. The Permittee shall provide notification and record keeping as required pursuant to 40 CFR, Part 60, Subpart A, 60.7.
131. The Permittee shall annually prepare and submit a comprehensive facility wide emission inventory report for all criteria pollutants and toxic air contaminants emitted from the facility. The inventory and report shall be prepared in accordance with the most recent version of CARB and California Office of Health Hazard Assessment guidance documents. The inventory report shall be submitted to the District APCO no later than March 1<sup>st</sup> of the following calendar year. The inventory report is subject to District APCO approval. *[District Rule 102(E)]*
132. Not later than 24 hours after determining that diesel mode operation is to occur as a result of an expected Natural Gas Curtailment, the Permittee shall notify the APCO by telephone, email, electronic page, or facsimile. The notification shall include, but not be limited to, the following: *[District Rule 102(E); PSD 2/09]*
- a. The anticipated start time and duration of operation in diesel mode under the Natural Gas Curtailment; and
  - b. The anticipated quantity of Diesel fuel expected to be burned under the Natural Gas Curtailment.
133. Not later than 48 hours following the end of a period of any diesel mode operation that results in the consumption of 500 or more gallons of diesel fuel, the Permittee shall notify the APCO by email or facsimile of the following *[District Rule 102(E); PSD 2/09]*:
- a. The actual start time and end time of the period of diesel mode operation;
  - b. The identification of the Reciprocating engines that were operated and the average load at which each reciprocating engine was operated on Diesel fuel during the diesel mode operating period; and
  - c. The actual quantity of Diesel fuel consumed during the diesel mode operation.

## TESTING & COMPLIANCE MONITORING

134. The Permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment for reciprocating engines S-1 through S-10 in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F.
135. The Permittee shall monitor and record exhaust gas temperature at the inlet and at the outlet of the oxidation catalyst. *[40 CFR 63 Subpart ZZZZ]*
136. Not less than thirty days prior to the date of any source test required by this Permit, the Permittee shall provide the District APCO with written notice of the planned date of the test and a copy of the source test protocol.
137. Source test results shall be summarized in a written report and submitted to the District APCO directly from the independent source testing firm on the same day, the same time, and in the same manner as submitted to Permittee. Source Test results shall be submitted to the District APCO no later than 60 days after the testing is completed.
138. The Permittee shall demonstrate compliance with the Natural Gas Mode emission limits via source testing conducted in accordance with the Test Methods listed below. For purposes of compliance with this condition, testing shall be conducted while the engines are operated in Natural Gas Mode, and shall be conducted at the intervals and at the operating loads specified in Condition #139. Alternative test methods may be approved by the APCO. *[District Rule 102(E); PSD 2/09 amended 6/15]*
  - a. Particulate Matter – CARB Method 5 (front and back half) or EPA Methods 201a and 202
  - b. Visible Emissions - Permittee shall perform a “Visible Emission Evaluation” (VEE) concurrent with particulate matter testing. A CARB certified contractor shall perform such an evaluation.
  - c. Ammonia – Bay Area Air Quality Management Method ST-1B
  - d. Reactive Organic Gases – CARB Method 100
  - e. Nitrogen Oxides – CARB Method 100
  - f. Carbon Monoxide – CARB Method 100
  - g. Oxygen – CARB Method 100
    - i. Oxygen shall be measured at the inlet and outlet of the oxidation catalyst
    - ii. Oxygen measurements shall be made at the same time as the CO measurements
  - h. Pressure drop measurements across the catalyst shall be made at the same time as the CO measurements
  - i. Natural Gas Fuel Sulfur Content – ASTM D3246
139. To demonstrate compliance with the Natural Gas Mode emission limits, reciprocating engines S-1 through S-10 shall be tested on a rotating basis where each engine is: 1) Tested each year; 2) Tested while operating at one of the designated operating loads; and 3) Tested at all three operating loads with a three year period. The designated operating loads, plus or minus 2.5%, shall be 52.5%, 75%, and 95%. The APCO may waive some or all of the testing requirements if the results of previous compliance tests have demonstrated compliance with permitted emission limits by a sufficient margin. *[District Rule 102(E); PSD 2/09 amended 6/15]*



140. The Permittee shall demonstrate compliance with the Diesel Mode emission limits via source testing conducted in accordance with the Test Methods listed below. For purposes of compliance with this condition, testing shall be conducted while the engines are operated in Diesel Mode, and shall be conducted at the intervals and at the operating loads specified in Condition #141. Alternative test methods may be approved by the APCO. *[District Rule 102(E); PSD 2/09 amended 6/15]*
- a. Particulate Matter - CARB Method 5 (front and back half), or EPA Methods 201a and 202.
  - b. Diesel Particulate Matter – CARB Method 5 (front half only)
  - c. Visible Emissions - U.S. EPA Method 9
  - d. Ammonia – Bay Area Air Quality Management District Method ST-1B
  - e. Reactive Organic Gases – ARB Method 100
  - f. Nitrogen Oxides -- ARB Method 100
  - g. Carbon Monoxide – ARB Method 100
  - h. CO shall be measured at the inlet and outlet of the oxidation catalyst.
  - i. Oxygen – ARB Method 100
    - i. Oxygen shall be measured at the inlet and outlet of the oxidation catalyst.
    - ii. Oxygen measurements shall be made at the same time as the CO measurements.
  - j. Liquid Fuel Sulfur Content – ASTM D5453-93
141. To demonstrate compliance with the Diesel Mode emission limits, reciprocating engines S-1 through S-10 shall be tested on a rotating basis pursuant to Condition #140 where each engine is: 1) Tested while operating in Diesel Mode once every five years or following each 200 hours of operation of an individual engine in Diesel Mode whichever is sooner; 2) Tested while operating at one of the designated operating loads; and 3) Tested at all three designated operating loads with a 15 year period. The designated operating loads, plus or minus 2.5%, shall be 52.5%, 75%, and 95%. In addition, within 30 days of returning an engine to service after the completion of repair or maintenance activities, the Permittee shall conduct RATA testing on the affected engine's CEMs components. RATA testing shall be conducted in accordance with the applicable requirements of 40 CFR 60, Appendix B. The specific repair and maintenance activities triggering the RATA testing requirement shall be identified in the Facility's Device Maintenance & Replacement Plan. The APCO may waive some or all of the testing requirements if the results of previous compliance tests have demonstrated compliance with permitted emission limits by a sufficient margin. *[District Rule 102(E); PSD 2/09 amended 6/15]*
142. The Permittee shall demonstrate compliance with the hourly, daily, and annual ROC emission limits through the use of valid CO CEM data and the ROC/CO relationship determined by annual CO and ROC source tests; and APCO approved emission factors and methodology. *[40 CFR 63 Subpart ZZZZ; District Rule 102(E); PSD 2/09]*
143. The Permittee shall demonstrate compliance with the hourly, daily, and annual SO<sub>x</sub> emission limits for reciprocating engines S-1 through S-10 through the use of valid fuel use records, natural gas sulfur content, diesel fuel sulfur content, mass balance calculations; and APCO approved emission factors and methodology. The natural gas sulfur content shall be determined on a monthly basis using ASTM D3246. *[District Rule 102(E); PSD 2/09]*
144. The Permittee shall demonstrate compliance with the hourly, daily, and annual PM emission limits, and the diesel particulate matter emission limits, for reciprocating engines S-1 through S-

10 through the use of valid fuel use records, source tests, and APCO approved emission factors and methodology. *[District Rule 102(E); PSD 2/09]*

145. Relative accuracy test audits (RATAs) shall be performed on each CEMS for reciprocating engines S-1 through S-10 at least once every twelve months, in accordance with the requirements of 40 CFR 60, Appendix B. Calibration Gas Audits of continuous emission monitors for reciprocating engines S-1 through S-10 shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The District shall be notified in writing at least 30 days in advance of the scheduled date of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District within 60 days after the testing was performed. *[District Rule 102(E); PSD 2/09]*

## **LOCALLY ENFORCEABLE ONLY EQUIPMENT SPECIFIC REQUIREMENTS**

### EMISSIONS

146. Reserved.

### AMBIENT MONITORING

147. The Permittee shall provide full funding for the purchase and installation of a new monitoring station (Shelter; CO, NO<sub>x</sub>, PM<sub>10</sub>/PM<sub>2.5</sub>, and other sampling equipment as determined by the APCO) to be installed at a location approved by the APCO. The funding shall include all costs associated with the purchase, installation, operation and maintenance (including personnel costs) of the monitoring station for an initial period of not less than five (5) years. PG&E shall reimburse the District for costs incurred within 30 days of receiving an invoice from the District. At the conclusion of that period, the APCO may extend the operation of the site if deemed in the best interest of the District, and PG&E will continue to fund all costs associated with its continued operation. The District shall manage the procurement, operation and maintenance of the site, and District staff will be responsible for collecting, securing, and quality assuring all data. *[District Rule 102(E)]*
148. The Permittee shall provide full funding for the purchase and installation of a new meteorological monitoring station to be installed at a location approved by the APCO. The funding shall include all costs associated with the purchase, installation, operation and maintenance (including personnel costs) of the meteorological monitoring station for an initial period of not less than five (5) years. PG&E shall reimburse the District for costs incurred within 30 days of receiving an invoice from the District. At the conclusion of that period, the APCO may extend the operation of the site if deemed in the best interest of the District, and PG&E will continue to fund all costs associated with its continued operation. The District shall manage the procurement, operation and maintenance of the site, and District staff will be responsible for collecting, securing, and quality assuring all data. The data collected at the station shall meet the requirements of EPA-454/R-99-005 "Meteorological Monitoring Guidance for Regulatory Modeling Applications" February 2000. *[District Rule 102(E)]*

## EQUIPMENT EXEMPT FROM PERMITTING REQUIREMENTS

149. The following equipment units and emissions are considered to be insignificant, and as such, are not required to obtain operating permits. However, these units and emission sources are required to comply with all applicable Federal and Local Enforceable Only general requirements and will be included in the facility's emission inventory. *[District Rule 102(D)(13)]*

**Table 21 - Insignificant Sources**

<b>Exempt Equipment / Emissions</b>
Air Conditioning Units
Combustion Emissions from the Propulsion of Mobile Sources
Equipment Operated in Accordance with a Valid California Portable Equipment Registration (PERP)
Diesel Fire Pump Fuel Tank(s)
Diesel Fuel Dispensing Equipment
Distilled Oil Storage Tank(s)
Gasoline Dispensing Equipment (non-retail)
Lube Oil Tank(s)
Oil/Water Separator(s)
Portable Sandblasting Unit(s)

**AUTHORIZING SIGNATURE**

**NORTH COAST UNIFIED  
AIR QUALITY  
MANAGEMENT DISTRICT**

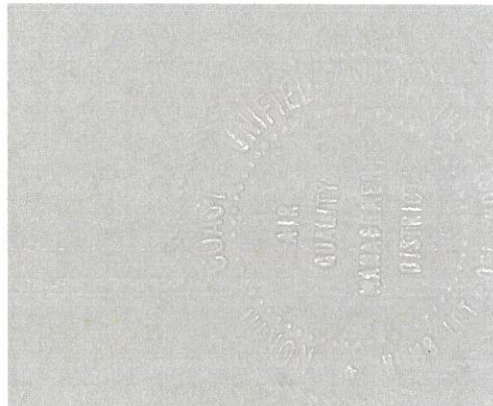
707 L STREET  
EUREKA, CALIFORNIA 95501

PHONE (707) 443-3093  
FAX (707) 443-3099

Date: July 19, 2018

By: 

Brian Wilson  
Air Pollution Control Officer



Permit Seal