

November 20, 2007

<b>DOCKET</b>	
<b>06-AFC-7,</b>	
<b>DATE</b>	<b>NOV 20 2007</b>
<b>RECD.</b>	<b>DEC 07 2007</b>



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Mr. Rick Martin  
Air Pollution Control Officer  
North Coast Unified Air Quality Management District  
2300 Myrtle Ave  
Eureka, CA 95501

Re: Preliminary Determination of Compliance  
Humboldt Bay Repowering Project, Permit No. 000440-1

Dear Mr. Martin:

On behalf of PG&E, we are providing the following comments on the Preliminary Determination of Compliance (PDOC) for the Humboldt Bay Repowering Project (HBRP) that was issued for public comment on October 24, 2007. We are attaching a marked-up version of the draft conditions for your convenience. Many of the changes we are requesting are editorial in nature, but several are significant. We are providing separate discussions of the significant and minor proposed revisions below.

### **Significant Proposed Revisions**

#### **Conditions 23 (p. 7) and 47 (p. 18): Opacity**

This condition would restrict exhaust opacity to Ringelmann 1 or 20% obscuration. This requirement is much more stringent than the opacity limits in District Rule 104 § 2.1, which restricts opacity to Ringelmann 2 or 40% obscuration. Under normal operating conditions, the HBRP reciprocating engines are not expected to have a problem meeting the 20% opacity limit proposed in the permit. However, during startup, the manufacturer indicates that opacity will be higher and compliance with the 20% opacity limit may not be possible. Therefore, we ask that this condition be revised to either: (1) conform to the underlying regulation (Ringelmann 2 or 40% opacity); or (2) include an exemption during startup, shutdown and malfunction periods, as provided in Rule 104 § 2.3.1 for recovery furnaces. The attached markup shows the first alternative. The second alternative would read as follows (proposed changes shown in *italics*):

23. *Except as provided below*, Permittee shall not discharge into the atmosphere from any source whatsoever any air contaminant for a period or periods aggregating more than three (3) minutes in any one hour which is as dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines; or of such opacity as to obscure an observer's view to a degree equal to or greater than Ringelmann 1 or twenty (20) percent opacity. *During periods of start-up or shutdown, or during a breakdown condition, Permittee shall not discharge into the atmosphere from any source whatsoever any air contaminant for a period or periods aggregating more than three (3) minutes in any one hour which is as dark or darker in shade as that designated as No. 2 on the Ringelmann Chart, as published by the United States Bureau of Mines; or of such*

*opacity as to obscure an observer's view to a degree equal to or greater than Ringelmann 2 or forty (40) percent opacity.*

47. *Except during startup, shutdown and malfunction, visible emissions from reciprocating engines S-1 through S-12 shall not exhibit opacity of 20% or greater, except for up to three minutes in any hour.*

Conditions 51 and 52 (p. 19): Annual Diesel heat input limitations

We are proposing to exclude from the annual Diesel fuel use limits the fuel used during emissions testing mandated by the District, ARB or EPA. The potential testing requirements for these engines is extensive, including annual emissions testing at multiple loads, annual RATA testing and semiannual formaldehyde testing as required under the NESHAP. We are concerned that if the fuel used during required emissions testing is counted against the annual limit, HBRP may not be able to perform other required maintenance and reliability testing. In the extreme, agency-mandated testing could result in an impossible compliance situation for the facility. Since these conditions derive from the ARB ATCM, and since the ATCM explicitly excludes emissions testing from the 50 hour per engine per year limit, we believe it appropriate to exclude those operations from these conditions as well. Note that we are not proposing to exclude the emission testing hours from the 1000 hour per year limit in Condition 94c, which applies to the total annual Diesel mode operating hours for all ten engines.

Conditions 28jj (p. 11); 31 (p. 15); 51 and 52 (p. 19); 53 (p. 20) and 108 (p. 34): Diesel fuel use monitoring

All of these conditions require, in one form or another, measuring (and subsequently reporting) the small quantity of Diesel fuel used for pilot injection. However, because of the scale required to measure fuel flow at full load, it will not be possible for the monitoring system to measure pilot fuel flow with any accuracy. Fuel flow at full load is 1088 gallons per hour, and compliance with a 1% accuracy requirement would provide an hourly measurement accurate to  $\pm 11$  gallons. The hourly pilot fuel flow rate is less than 6 gallons, so the fuel flow meter could be off by a factor of two at this low flow rate. In addition, the meter will not be capable of measuring fuel consumption in tenths of a gallon as required under Condition 31.

Our understanding is that the purpose of these conditions is to verify that the Wärtsilä engines are operating in natural gas mode by monitoring the Diesel fuel flow to ensure that the engines are not consuming enough Diesel fuel to be operating in Diesel mode. We suggest that because of the large disparity between Diesel fuel consumption rates in the two operating modes, this goal could be achieved by requiring the hourly and daily Diesel fuel consumption to be monitored and recorded for each engine, without specifying an hourly or daily limit for Diesel fuel consumption during natural gas mode operation. It will be clear from the reported values whether the engine consumed enough fuel to have operated for any length of time in Diesel mode, but it is not necessary to impose pilot fuel consumption limits for which compliance cannot be demonstrated.

The attached markup of the draft conditions also addresses these proposed revisions.

To allay potential concerns regarding excessive pilot (Diesel) fuel injection during natural gas mode operation, we are providing additional information about how the pilot fuel injection system operates. Each dual-fuel reciprocating engine has a twin-needle injection valve in every cylinder. The larger needle is used only when the engine is operating in Diesel mode, while the smaller pilot-injection needle is used when the

engine is running in natural gas and in Diesel mode. Pilot injection is electronically controlled, and the pilot fuel injection rate is not an operator-settable parameter. The Wärtsilä engineers will set the pilot fuel injection rate for each engine into the microprocessor-based engine control system during factory acceptance testing and the rate will not be adjustable or variable by the plant operators. The only other parameter that can affect the amount of pilot fuel injected into each cylinder is the size of the orifice, and since that orifice cannot be enlarged, there is no physical way the pilot fuel injection rate can increase beyond the electronically-controlled settings.

Condition 40 and 43 (pp. 16 and 17): Ammonia injection and ammonia slip monitoring

These conditions relate to monitoring ammonia injection rates and demonstrating compliance with the ammonia slip limit. The conditions as written relate to the typical SCR catalyst setup in gas turbines. However, the ammonia injection and catalyst design will be different for these reciprocating engines. As can be seen in the attached drawing, the exhaust duct where the ammonia (reducing agent) will be injected is relatively narrow, so no injection grid will be used. In addition, the oxidation catalyst will be placed downstream, not upstream, of the reduction catalyst and will oxidize virtually all of the ammonia remaining in the exhaust stream after it passes through the reduction catalyst. Therefore, the calculation procedure in Condition 43, which is typically used for gas turbines, will not work for the emission control system configuration that will be used for the Wärtsilä engines.

Proposed revisions to these permit conditions are provided in the attached markup. These proposed revisions replace the ammonia:NOx mole ratio calculation with a proposed maximum ammonia injection rate.

Condition 44 (p. 17): Offset requirements

Condition 44 requires the surrender of the offset ERCs purchased from a third party. The remainder of the ERCs required for the HBRP will be provided through the shutdown of the existing Humboldt Bay Power Plant units, in accordance with Condition 66. While the PDOC evaluation quantifies the emission reduction credits that will result from the existing units, the PDOC conditions do not mention these on-site ERCs. We are proposing the addition of some language to Condition 44 to reaffirm HBRP's obligation to provide offsets for the full amount of permitted emissions as required by the District's regulations, and to indicate that an ERC certificate will be issued to PG&E for the excess reductions.

Conditions 85 and 86 (pp. 28-29): Submission and Approval of Plans

Conditions 85 and 86 require HBRP to prepare and submit written Device Operational and Device Maintenance & Replacement Plans for the reciprocating engines and associated controls. The conditions require the plans to be submitted "not more than sixty (60) days calendar days following expiration of the commissioning period for any of the reciprocating engines S-1 through S-10." The conditions go on to indicate that the engines shall not be operated "...after the expiration of the Commissioning Period for any of the reciprocating engines plus 60 days, unless a District approved ...Plan is in effect" so that the submittal deadline and the date on which the plans must be District-approved are the same. We suggest moving up the submittal deadline to 30 days following expiration of the Commissioning Period and deleting the prohibition against operation without an approved plan. The conditions requiring submittal of the plans and

making the plans subject to District approval are adequate to ensure that HBRP prepares and submits comprehensive plans in a timely manner.

Conditions 106 (p. 32) and 111 (p. 35): Annual compliance certification and emission inventory reporting requirements

These conditions require the submittal of annual reports, including compliance certification, data summaries, and a comprehensive facility-wide emission inventory report for criteria and toxic pollutants, by January 31 of the following calendar year. HBRP is concerned that this deadline does not provide adequate time for preparing the required report and requests that the deadline be changed to March 1. This will allow adequate time for data review and report preparation prior to certification.

Minor Editorial Revisions

Condition 2 (p. 5): Revisions to District rules and regulations

Please add the word "applicable" as shown.

Conditions 28o (p. 9) and 28p (p. 10): Terms and definitions

Please correct "ROG" to "ROC" in the definition of "Corrected Concentration" to be consistent with the use of the term ROC in the rest of the conditions.

Please clarify the definition of "Diesel Mode" as shown.

Condition 30 (p. 14): Table 1.1, Engine specifications

Please add "above ground level" to the specification of the stack heights for Engines S-1 through S-10.

Condition 31 (p. 15): Fuel monitoring system

Please add "or cubic feet" to the description of the fuel monitoring system. Please revise the calibration frequency requirements for the fuel monitoring system to make them consistent with manufacturer's recommendations. The calibration frequency will be specified in the Device Operational Plan required by Condition 85 once the monitoring system has been selected.

Condition 39 (p. 16): Exhaust gas temperature monitors

Please add clarifying language as shown.

Condition 42 (p. 16): CEM

Please clarify the option of using O<sub>2</sub> as diluent.

Conditions 55 (p. 21) and 57 (p. 22): Emission Limits

Please add "per engine" as shown to clarify that these limits apply to each engine individually.

Condition 75 (p. 26): Commissioning Emission Limits

Please add "as" to clarify that compliance with the ROC limit is determined on total ROC measured as methane.

Condition 94c (p. 30): Operating limits

Please correct "does" to "do."

Condition 107f (p. 33): Monthly log

Please correct "engine" to "engines" in two instances.

Condition 108 (p. 33): Table 7.0, required records

Please add sulfur content to the required information to be recorded for each bulk delivery of Diesel fuel received.

Please add "CO<sub>2</sub>" as an optional diluent in the list of records required to be collected every 15 minutes.

Please indicate that the information required to be collected every 15 minutes and hourly applies to each engine individually, and that the information required to be collected quarterly and annually applies to the totals for all engines. Please indicate for daily records whether the data is to be recorded for each engine individually or as a total for all engines.

Condition 123 (p. 38-39): Performance testing in Diesel mode

Please clarify that performance testing in Diesel fuel mode will not be required more frequently than once per year.

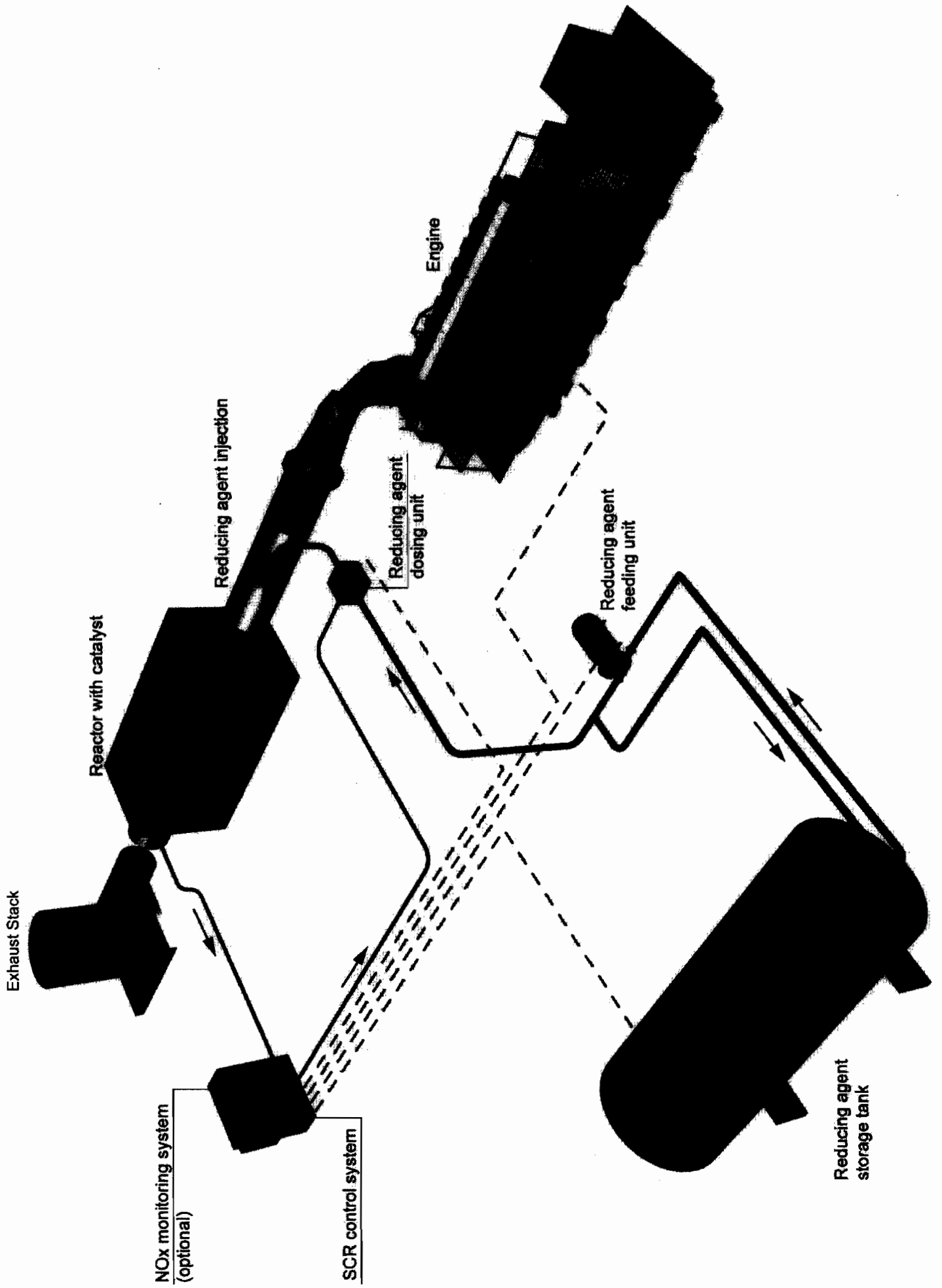
We appreciate the opportunity to provide comments on the PDOC, and we would be glad to discuss any of these proposed changes in more detail at your convenience.

Sincerely,

  
Gary Rubenstein

attachments

cc: Greg Lamberg, Radback Energy  
Jon Maring, PG&E  
Roy Willis, PG&E  
Ken Horn





# **Preliminary Determination of Compliance**

## **Humboldt Bay Repowering Project (HBRP)**

North Coast Unified Air Quality Management  
District  
2300 Myrtle Avenue Eureka, CA 95501  
(707) 443-3093

Permit Number 000440-1  
October 22, 2007

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## I. Background

On September 29, 2006, Pacific Gas & Electric Company submitted an Application for Certification (AFC) for the installation and operation of the Humboldt Bay Repowering Project, consisting of ten (10) nominal 16.3 MW Wärtsilä Dual Fuel Reciprocating Engines, one (1) 469 HP Caterpillar DM8149 350kW Diesel-fired emergency IC engine generator, and one (1) 210 HP Clarke diesel fired emergency IC engine powering a fire water pump. The application was deemed complete on October 20, 2006. The Humboldt Bay Repowering Project (HBRP) will replace the existing steam boiler Units 1 and 2 and the existing peaking turbines (Mobile Emergency Power Plants [MEPPs]) 2 and 3, which will be shut down. The nominal plant output after repowering will be 163 MW. This is the Preliminary Determination of Compliance (PDOC) and Proposed Conditions for the HBRP issued by the North Coast Unified Air Quality Management District (District).

Deleted: October 20, 2006

The proposed project is subject to District Regulation I, Rule 110, which contains the District's New Source Review (NSR) and Prevention of Significant Deterioration (PSD) permitting requirements. The project is also subject to Rules 1-200(c) and 1-220, adopted March 14, 1984, and approved by USEPA as part of the State Implementation Plan (SIP). The District has been delegated the authority to perform PSD review in accordance with the requirements of the 1984 rules.

Pursuant to District Regulation I, Rule 110, this document presents the District's preliminary determination that the proposed project will comply with applicable federal, state, and District regulations, including the Best Available Control Technology (BACT) and emission offset requirements of the District's New Source Review regulation. Proposed permit conditions necessary to ensure compliance with applicable rules and regulations and air pollutant emission calculations are also included.

In accordance with District Regulation I, Rule 110, this PDOC is subject to public notice, public inspection, and public comment requirements. Notice is being given to the public of the availability of this PDOC and the public will have 30 days from the date of the notice to comment on it. The District will review and consider all comments received from the public, amend permit conditions as deemed appropriate by the District and make a Final Determination of Compliance (FDOC) pursuant to District Regulation I, Rule 110, which will be submitted to the California Energy Commission (CEC) for use during the certification process for this proposed facility.

This PDOC is being issued subject to the following description and conditions.

**NORTH COAST UNIFIED AIR QUALITY  
MANAGEMENT DISTRICT**

2300 Myrtle Avenue, Eureka, CA 95501  
Phone: (707) 443.3093 Fax: (707) 443.3099

**PRELIMINARY DETERMINATION OF COMPLIANCE  
AND PROPOSED CONDITIONS FOR THE HUMBOLDT  
BAY REPOWERING PROJECT**

**Permittee:** Pacific Gas & Electric Company (PG&E)  
**Location:** Humboldt Bay Power Plant  
1000 King Salmon Avenue  
Eureka, California 95503

**Responsible  
Official:** Ray B. Willis  
Plant Manager, HBBP Fossil

**Contact:** Ray B. Willis  
Phone: (707) 444-0760  
Fax: (707) 444-0760

**Issue Date:** October 15, 2007  
**Issued by:** North Coast Unified Air Quality Management District  
Air Pollution Control Officer

**FOR THE SOURCES LISTED BELOW:**

Installation and operation of the Humboldt Bay Repowering Project, consisting of ten (10) nominal 16.3MW 18V50DF Wärtsilä Dual Fuel Reciprocating Engines, one (1) 469 HP Caterpillar DM8149 350kW Diesel-fired emergency IC engine generator, and one (1) 210 HP Clarke diesel fired emergency IC engine powering a fire water pump.

**SUBJECT TO THE FOLLOWING CONDITIONS:**

## II. GENERAL CONDITIONS

1. This Permit is issued pursuant to California Health and Safety Code Section 42301.1.
2. The NCUAQMD Rules and Regulations may be superseded or revised by the NCUAQMD 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 comply with all new applicable Rules and Regulations.
3. The "Right of Entry", as delineated in California Health and Safety Code Section 41510 of Division 26, shall apply at all times. Failure to do so may be grounds for permit suspension or revocation.
4. This Permit does not convey any property rights of any sort, or any exclusive privilege.
5. Any violation of any condition of this Permit is a violation of NCUAQMD Rules and Regulations, and California State Law.
6. 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 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).
7. This Permit shall be posted in a conspicuous location at the site and shall be made available to NCUAQMD representatives upon request.
8. Changes in plans, specifications, and other representations proposed in the application documents shall not be made if they will increase the discharge of emissions or cause a change in the method of control of emissions or in the character of emissions. Any proposed changes, regardless of emissions consequence, shall be submitted as a modification to this Permit. No modification shall be made prior to issuance of a permit revision for such modification.

9. 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 NCUAQMD Rules and Regulations, or any state or federal law, shall be grounds for revocation of this Permit.
10. 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.
11. Commencement of any act or operation authorized by this Permit shall be conclusively deemed to be acceptance of all terms and conditions of this Permit.
12. 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.
13. In the event that two or more conditions may apply, and such conditions both cannot apply without conflict, the condition(s) most protective of the environment and the public health and safety shall prevail. In the event that a condition(s) of the Permit and a requirement of a Federal, State or Local law, rule or regulation may also apply, and both cannot apply without conflict, the requirements most protective of the environment and the public health and safety shall prevail.
14. 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.
15. This Permit is effective only upon payment of fees in accordance with NCUAQMD Rules and Regulations. 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.
16. 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 NCUAQMD of the change in control or ownership within fifteen (15) days of that change.
17. 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.

18. This Permit is issued pursuant to NCUAQMD Rule 110 §9 and shall only become effective after a Final Determination of Compliance has been issued by the APCO pursuant to NCUAQMD Rule 110 §9.6.
19. The authorization for equipment installation and construction activities identified in this Permit shall expire no more than 545 days from date of issue. Should the need arise, the Permit may be extended by the NCUAQMD APCO for up to an additional twelve (12) months for good cause shown. The burden of proof lies with the Permittee to demonstrate good cause for such action.
20. Once the subject equipment has been constructed in compliance with the conditions of this permit, this Authority to Construct Permit shall serve as a Temporary Permit to Operate for a period not to exceed one hundred and eighty (180) days of operation. Should the need arise, the Temporary Permit to Operate may be extended by the APCO for up to an additional ninety (90) days for good cause shown. The burden of proof lies with the Permittee to demonstrate good cause for such action.
21. 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 NCUAQMD. This Permit shall not be considered as permission to violate existing laws, ordinances, regulation or statutes of other governmental agencies. The violation of any of these terms and conditions shall be grounds for revocation of this Permit and shall be a violation of NCUAQMD Rules and Regulations.
22. 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.
23. Permittee shall not discharge into the atmosphere from any source whatsoever any air contaminant for a period or periods aggregating more than three (3) minutes in any one hour which is as dark or darker in shade as that designated as No. 2 on the Ringelmann Chart, as published by the United States Bureau of Mines; or of such opacity as to obscure an observer's view to a degree equal to or greater than Ringelmann 2 or forty (40) percent opacity.
24. 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

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permitted. Reasonable precautions shall be taken to prevent particulate matter from becoming airborne.

25. 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.
26. The Permittee shall provide training and instruction to all 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.
27. Permittee shall furnish to the APCO, within a reasonable time, any information that the NCUAQMD may request to determine compliance with this Permit or whether cause exists for modifying, reworking and reissuing, or terminating this Permit. Upon request, Permittee shall also furnish to the NCUAQMD copies of records required to be kept by this Permit.
28. As used in this Permit, the following terms shall have the meaning set out herein:

### III. Terms & Definitions

- 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 NCUAQMD 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 hereby 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. **CEC CPM:** California Energy Commission Compliance Program Management
- i. **CEMS:** Continuous Emissions Monitoring System
- j. **CFR:** the Code of Federal Regulations
- k. **Commencement of Onsite Construction:** the commencement of a program of installation and continuous construction at the Facility or modification of the emission point(s) subject to this Permit
- l. **Commissioning Activities:** All testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and the owner's engineer to ensure safe and reliable steady state operation of the reciprocating engines and associated electrical delivery systems
- m. **Commissioning Period:** For each reciprocating engine considered separately, the time period that commences when a Reciprocating Engine is first fired. The period shall terminate when each individual reciprocating engine has successfully completed both performance and compliance testing. The commissioning period shall not exceed 180 days under any circumstances.
- n. **COMS:** Continuous Opacity Monitor
- o. **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

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- p. **Diesel Mode:** the firing of reciprocating engines S-1 through S-10 on 100 percent CARB diesel or alternative liquid fuel, when the engine operates under the theoretical Diesel cycle
- q. **Diesel Particulate Matter (DPM):** filterable particulate matter (PM) measured using EPA method 5
- r. **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 NCUAQMD 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 NCUAQMD APCO's satisfaction to have been beyond the reasonable control of the Permittee.
  - iii. The pumping of water for fire suppression or protection.
- s. **District:** North Coast Unified Air Quality Management District
- t. **Dscfm:** dry standard cubic feet per minute
- u. **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.
- v. **EPA:** the United States Environmental Protection Agency
- w. **Facility:** the site of the Humboldt Bay Repowering Project at HBPP
- x. **Firing Hours:** period of time during which fuel is flowing to a unit, measured in minutes divided by 60
- y. **HBRP:** Humboldt Bay Repowering Project
- z. **HBPP:** Existing Humboldt Bay Power Plant and applicable NCUAQMD permits.
- aa. **Heat Input:** the energy (heat) input of the fuel combusted at the higher heating value (HHV) of the fuel
  - bb. **HHV:** Higher Heating Value
  - cc. **Hr:** one hour – a standard measurement of time
  - dd. **H<sub>2</sub>S:** Hydrogen Sulfide
  - ee. **Lb:** pound – an English unit of measurement of weight and mass being equivalent to 7000 grains, 16 ounces, and 0.453 kilograms
  - ff. **Maintenance and Testing:** Operation of the reciprocating engines to (a) evaluate the ability of an engine or its supported equipment to perform during an emergency; or (b) facilitate the training of personnel on emergency activities; or (c) perform emissions testing, maintenance and operational testing, or safety-related testing as required by any



- government agency or by the manufacturer as a requirement of any law, regulation, rule, ordinance, standard, or contract
- gg. **MMBtu**: million British thermal units
- hh. **Natural Gas**: any mixture of gaseous hydrocarbons containing at least 80 percent methane by volume as determined by Standard Method ASTM D1945-64
- ii. **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)
- jj. **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 as pilot injection, and the engine operates under the theoretical Otto cycle
- kk. **NCUAQMD**: North Coast Unified Air Quality Management District
- ll. **NFPA**: National Fire Protection Association
- mm. **Normal Operation**: 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
- nn. **Notice** unless otherwise stated shall be in writing, sent postage prepaid, to the PCO and include all information required. Notice shall be sent to the PCO at the following address: 2300 Myrtle Ave., Eureka, CA 95501
- oo. **O<sub>2</sub>**: Oxygen
- pp. **Permittee**: the owner or operator identified on the Permit title page (PG&E)
- qq. **PM**: Particulate Matter
- rr. **Ppmvd**: parts per million, volumetric dry
- ss. **Responsible Official**: person(s) who have direct supervisory authority or control to direct operations of the equipment authorized pursuant to this permit, and who have the ability to certify that a source complies with applicable federal requirements and federally enforceable permit conditions as generally defined in NCUAQMD Rule 101 §1.245
- tt. **Rolling 3-hour Period**: Any consecutive three-hour period, not including start-up or shut-down periods
- uu. **ROC**: reactive organic carbon consistent with NCUAQMD Rule 101 §1.294 and HSC
- vv. **Quarter**: calendar quarter, consisting of the following Q1 - January through March; Q2 - April through June; Q3 - July through September; Q4 - October through December
- ww. **Shutdown Period**: The 30 minute period immediately prior to the termination of fuel flow to the reciprocating engine.

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- xx. **SO<sub>2</sub>**: Sulfur Dioxide
- yy. **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 conditions 54 and 56.
- zz. **VEE**: Visible Emissions Evaluation
- aaa. **Year**: Any consecutive twelve-month period of time

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## IV. Authorized Equipment

29. The Permittee shall install and construct the project as described in Authority To Construct application October 20<sup>th</sup> 2006 and its series of amendments ending with the most recent submittal of September 30<sup>th</sup> 2007. Should discrepancies or contradictions exist between the application and this Permit, the provisions of this Permit shall prevail. The specific components authorized are listed in Table 1.0 and Table 2.0 below.

**Table 1.0 Authorized Emission Devices**

S-1	<b>Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #1,</b> equipped with lean burn technology, abated by A-1 SCR and B-1 oxidation catalyst	148.9 MMBtu/hr 16.3 MW 22,931 BHp
S-3	<b>Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #3,</b> 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-5	<b>Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #5,</b> 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-7	<b>Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #7,</b> 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-9	<b>Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #9,</b> 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-11	<b>Caterpillar DM8149 (or equivalent) Diesel-fired Emergency IC Engine powering a 350kW electrical generator</b>	469 HP

30. The Permittee shall not modify the equipment subject to this permit in such a manner so as to exceed the Heat Input Capacities, or deviate from the nominal full-load design specifications so as to alter the dispersion modeling results, as identified in Table 1.1, Table 1.2, or Table 1.3.

**Table 1.1 S-1 Through S-10 Engine Specifications**

	Natural Gas CARB Diesel 67.5 °F 143.9 MMBtu/hr natural gas plus 0.79 MMBtu pilot fuel (natural gas mode) OR – 148.9 MMBtu/hr CARB Diesel Fuel (diesel mode)
	728°F 121,500 cfm 100 Feet <u>above ground level</u> 11.6%
	Lean Burn Technology and SCR; Oxidation Catalyst 4911 20100202 natural gas mode, 20100301 diesel mode

**Table 1.2 S-11 Engine Specifications**

	CARB Diesel 4.6 MMBtu/hr
	19.1 4911 20100301

**Table 1.3 S-12 Engine Specifications**

	CARB Diesel 1.68 MMBtu/hr
	12.3 4911 20201607

The Permittee shall only fire reciprocating engines S-1 through S-10 with fuel which meets or exceeds the fuel specifications identified in Table 1.4.

**Table 1.4 Fuel Specifications for S-1 through S-10**

Sulfur Content	< 1 gr / 100scf per test; annual average <0.33gr/100scf
Sulfur Content	< 15 ppm

31. Reciprocating engines S-1 through S-10 shall be equipped with a monitoring system capable of measuring and recording hours of operation (tenths of an hour) and fuel consumption (in cubic feet or 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 calibrated in accordance with manufacturer's recommendations to ensure compliance with the 1% accuracy requirement.
32. The exhaust stacks shall not be fitted with rain caps or any other similar device which would impede vertical exhaust flow.
33. The Permittee shall install and maintain a non-resettable hour meter with a minimum display capability of 99 hours on the Emergency Diesel Generators S-11 and S-12. [Section 93115, Title 17, California Code of Regulations, Air Toxic Control Measure (ATCM) for Stationary Compression Ignition (CI) engines]
34. 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 d) above.
35. The reciprocating engines S-11 and S-12 shall be certified to meet the EPA Tier 3 emission levels. [40 CFR 60 Subpart IIII]
36. The Permittee shall obtain APCO approval for the use of any equivalent engine for S-11 or S-12 not specifically approved by this Authority to Construct. Approval of an equivalent engine shall be made only after the APCO's determination that the submitted design and performance data for the proposed IC engine is equivalent to the approved engine.
37. The Permittee's request for approval of an equivalent engine shall include the following information: engine manufacturer and model number, horsepower (hp)

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rating, exhaust stack information, and manufacturer's guaranteed emission concentrations.

38. The Permittee's request for approval of an equivalent engine shall be submitted to the District at least 90 days prior to the planned installation date. The Permittee shall also notify the District at least 30 days prior to the actual installation of the District approved equivalent engine. [District Rule 103 §6.0]

**Table 2.0 Authorized Control Devices**

[REDACTED]	TBD	TBD	TBD	TBD (min 70% reduction CO)
[REDACTED]	TBD	TBD	TBD	TBD

39. The Permittee shall install exhaust gas temperature monitoring devices at the selective catalytic reduction inlet and at the face of the oxidation catalyst. [40 CFR 63 Subpart ZZZZ; BACT]
40. Ammonia injection points shall be equipped with operational ammonia flow meters and injection pressure indicators. Flow meters shall be accurate to plus or minus 1% at full scale and shall be calibrated at least once every twelve months or at more frequent intervals if necessary to ensure compliance with the 1% requirement.
41. 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 NOx, CO, and O2 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.
42. Each reciprocating engine shall be equipped with a continuous emission monitor (CEM) for NOx, CO, O<sub>2</sub> or CO<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.
43. The Permittee shall demonstrate compliance with the ammonia slip limit by using the following calculation procedure: The ammonia emission concentration shall be verified by the continuous recording of the ammonia injection rate into the SCR control system. The maximum ammonia injection rate shall be determined based on data collected during initial source tests, and shall not be exceeded until

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reestablished through another valid source test. 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 §6.0]

44. Prior to commencement of construction, in accordance with Rule 106 §6.6, the Permittee shall provide to the NCUAQMD APCO documentation of ownership, or transfer of ownership, of Emission Reduction Credits sufficient to offset the emissions identified in Table 3. Prior to commencement of the Commissioning Period, the Permittee shall surrender to the NCUAQMD sufficient emission credits to offset the increases listed in Table 3.0 below. Emission credits provided to offset PM10 increases shall be at an inter-pollutant ratio of 0.58:1 under the appropriate distance ratio is applied. [District Rule 110] [40 CFR 51, Appendix

Table 3.0 HBRP Required Offsets By Quarter

1.40	1.34	1.33	1.33
2.45	2.35	2.37	2.34
0.62	0.58	0.59	0.59

Permittee shall surrender the additional reductions required to offset the emissions subject to offsets as generated through the shutdown of the existing units at Humboldt Bay Power Plant identified in the Engineering Evaluation, in accordance with condition 65. An ERC certificate shall be issued to PG&E in the amount, calculated in accordance with District rules, of the excess reductions generated through the shutdown of the existing units beyond those required to offset the emissions from this project.

## V. Emission Limiting Conditions

45. 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. [NCAQMD Rule 104 §3.1]
46. The Permittee shall not discharge sulfur dioxide into the atmosphere in excess of 1000 ppmv or 40 tons per year from each of the Emergency IC Diesel Generators S-11 and S-12.
47. Visible emissions from reciprocating engines S-1 through S-12 shall not exhibit opacity of 40% or greater, except for up to three minutes in any hour.
48. During periods of normal plant operations when any combination of reciprocating engines S-1 through S-10 are in a Standby Period, the discharge of NOx from the combination of all engines, shall not exceed 392 lbs per hour.
49. During periods of Natural Gas Curtailment when any combination of reciprocating engines S-1 through S-10 are in a Startup Period, the discharge of NOx from the combination of all engines shall not exceed 672 lbs per hour.
50. 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 0.15 g/bhp-hr.

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## VI. Heat Input & Fuel Limitations

### Engines S-1 Through S-10

51. 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 4.0 on a per engine basis.

**Table 4.0 Heat Input Limitations Per Engine**

	143.9	2,754	927,450
	148.9	3574	14,890 <sup>3</sup>

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**Notes:**

- 1) Each unit can only run in either Natural Gas or Diesel Mode, not both simultaneously.
- 2) Heat Input in Natural Gas Mode is the sum of natural gas and diesel pilot also.
- 3) This limit applies to operation for maintenance and testing, excluding emissions testing mandated by the District, CARB, or US EPA and during periods of Natural Gas Curtailments as defined in this permit. The limit shall not apply to fuel consumed during the Commissioning Period.

52. 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 4.1 below calculated as a sum of S-10 engines.

**Table 4.1 Heat Input Limitations S-1 Through S-10 Engines Combined**

	1,489	34,536	9,274,500
	1,489	35,736	140,890 <sup>2</sup>

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**Notes:**

- 1) Total Heat Input in Natural Gas Mode is the sum of natural gas and diesel pilot.
- 2) This limit applies to operation for maintenance and testing, excluding emissions testing mandated by the District, CARB, or EPA, and during periods of Natural Gas Curtailments as defined in this permit. The limit shall not apply to fuel consumed during the Commissioning Period.

53. The Permittee shall not exceed the diesel fuel firing limits listed in Table 4.3 below while operating reciprocating engines S-1 through S-10 in Diesel Mode.

**Table 4.3 Diesel Fuel Firing Limitations**

1,088	26,106	-
10,876	26,061	1,088,362

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## VII. Pollutant Limitations

### S-1 - S-10 Natural Gas Mode

54. The Permittee shall not operate reciprocating engines S-1 through S-10, such that they individually discharge pollutants exceeding the limits identified in Table 5.0 below based upon a three (3) hour rolling average. The limits shall not apply during Startup or Shutdown Periods.

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**Table 5.0 Natural Gas Mode Emission Limits Reciprocating Engines S-1 through S-10**

CO	13	4.1	0.029
NH <sub>3</sub>	10	1.9	0.013
NO <sub>x</sub>	6.0	3.1	0.022
PM <sub>10</sub>	-	3.6	-
ROC	28	-	0.035
SO <sub>x</sub>	-	0.4	0.0028

55. The combined discharge of pollutants from the reciprocating engines S-1 through S-10 shall not exceed the limits listed in Table 5.1 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.

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**Table 5.1 S-1 Through S-10 Combined Natural Gas Mode Limit**

CO	1,589
NH <sub>3</sub>	456
NO <sub>x</sub>	1,365
PM <sub>10</sub>	864
ROC	1,608
Sox	97

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

56. 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 5.2 below. The limits shall not apply during Startup or Shutdown Periods.

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**Table 5.2 Diesel Mode Emission Limits for Reciprocating Engines S-1 through S-10**

CO	20.0	6.9	0.047
NH <sub>3</sub>	10	2.1	0.014
NOx	35.0	19.6	0.134
PM <sub>10</sub>	-	10.8	0.14
ROC	40.0	7.9	0.053
SOx	0.40	0.22	0.016

57. While operating in reciprocating engines S-1 through S-10 during an event consistent with the definition of Diesel Particulate Matter ATCM Emergency Use, the Permittee shall not operate the reciprocating engines S-1 through S-10 such that Diesel Particulate Matter is emitted in excess of 0.1 g/bhp-hr.

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58. 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 5.3 below. The limits shall not apply during Startup, Shutdown Periods, and shall exclude emissions during the Commissioning Period and during periods of Natural Gas Curtailment as defined in this permit.

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**Table 5.3 Diesel Particulate Matter Limitations**

	5.56	133.4	-
	55.6	1,334	5,560

59. The combined discharge of pollutants from the reciprocating engines S-1 through S-10 during any Calendar Day shall not exceed the limits listed in Table 5.4 below during any Calendar Day in which one or more 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.

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**Table 5.4 S-1 Through S-10 Combined Diesel Mode Limit**

CO	2,219
NH <sub>3</sub>	507
NOx	9,101
PM <sub>10</sub>	1,542
ROC	2,183
SOx	96

60. 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 5.5 below.

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**Table 5.5 S-1 Through S-10 Combined Annual Emission Limits**

CO	171.0
NH <sub>3</sub>	118.9
PM <sub>10</sub>	188.9
ROC	4.4
SOx	4.4

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

61. The Permittee shall not operate reciprocating engines S-11 and S-12 such that pollutant discharge into the atmosphere exceeds the quantities in Table 5.6 below.

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**Table 5.6 Reciprocating Engines S-11 and S-12 Emission Limits**

	0.63	0.65
	0.05	0.05
	3.47	3.59
	0.4	0.41
	-	.0061
	0.59	.27
	0.14	0.06
	4.9	2.27
	0.5	0.23
	-	0.0026

62. The combined discharge of pollutants from the reciprocating engines S-11 through S-12 during any calendar year shall not exceed the limits listed in Table 5.7 below.

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**Table 5.7 S-11 and S-12 Combined Annual Emission Limits**

CO	46
NOx	293
DPM	5
ROC	
SOx	0.4

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## VIII. Startup Commissioning & Simultaneous Operation

63. This Permit supplements existing NCUAQMD Permit Numbers for the HBPP of NS-020 (Boiler #1), NS-21 (Boiler #2) and NS-057 (Turbines) until such time as the sources are decommissioned.

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64. The Permittee shall notify the District of the anticipated date of initial startup of the reciprocating engines S-1 through S-10 not more than 60 days, or less than 30 days prior to initial startup. The Permittee shall notify the APCO of the actual startup of reciprocating engines S-1 through S-10 not more than 15 days after actual initial startup.

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65. The existing generating units at Humboldt Bay Power Plant shall be shut down as soon as possible following the commercial operation of all of the reciprocating engines S-1 through S-10. The existing generating units at Humboldt Bay Power Plant (NCUAQMD Permit Numbers NS-020, NS-21 and NS-057) and the new HBRP reciprocating engines S-1 through S-10 shall not be in simultaneous operation for more than 180 calendar days including the Commissioning Period, unless such operation is required by the California Independent System Operator. [District Rule 110]

66. Selective catalytic reduction (SCR) systems and oxidation catalysts shall serve each reciprocating engine except as provided for in Condition #70. Permittee shall submit SCR and oxidation catalyst design details to the District at least 90 days prior to scheduled delivery of these systems to the site. [District Rule 110]

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67. Permittee shall submit continuous emission monitor design, installation, and operational details to the District within 120 days following commencement of construction. [District Rule 110]

68. At the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the reciprocating engines shall be tuned to minimize emissions.

69. At the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the Selective Catalytic Reduction (SCR) system and the oxidation catalyst shall be installed, adjusted, and operated to minimize emissions from each reciprocating engine.

70. The continuous monitors specified in Permit Conditions 32, 34, 40, and 41 shall be installed, calibrated, and operational prior to the first firing of reciprocating engines S-1 through S-10. After first firing, the detection range of the CEMS shall be adjusted as necessary to accurately measure the resulting range of NOx and CO emission concentrations.

71. The Permittee shall record and monitor the parameters identified in Table 7.0 of this Permit at least once every 15 minutes (excluding normal calibration periods or when the monitored source is not in operation). The Permittee shall use APCO

approved methods to calculate heat input rates, oxides of nitrogen mass emission rates (reported as nitrogen dioxide), carbon monoxide mass emission rates, and NOx and CO emission concentrations, summarized for each hour and each day.

**72.** The total number of firing hours of each reciprocating engine S-1 through S-10 without abatement of emissions by the SCR system and the oxidation catalyst shall not exceed 100 hours for each engine during the Commissioning Period. Such operation of each reciprocating engine without abatement shall be limited to discrete Commissioning Activities that can only be properly executed without the SCR system and the oxidation catalyst in place. Upon completion of these activities for each engine, the Permittee shall provide written notice to the District and the unused balance of the allowable firing hours without abatement for that engine shall expire.

**73.** When one or more reciprocating engines S-1 through S-10 are undergoing Commissioning Activities without an SCR system and oxidation catalyst installed, the Permittee shall not:

- a. Fire more than five uncontrolled reciprocating engines simultaneously.
- b. Operate the uncontrolled engines such that their combined hours of operation exceed 90 engine hours during any Calendar Day.

**74.** During the Commissioning Period when the engines are being operated without an SCR system and oxidation catalyst, the Permittee shall not operate reciprocating engines S-1 through S-10 such that the combined emissions exceed any of the limits in Table 5.6 below:

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**Table 5.6 S-1 through S-10 Combined Commissioning Emission Limits**

	197.2	2,662
	323.3	4,365
	54	1,296
	86.6	1,559
	2.0	48.4

**75.** During the Commissioning Period, after steady-state operation of the SCR system and the oxidation catalyst has been achieved, the NOx and CO emissions from each reciprocating engine shall thereafter comply with the limits specified in Permit Conditions 54, 55, 56, 57, and 58.

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**76.** Firing hours on 100% CARB Diesel Fuel or Alternative Liquid Fuel during the Commissioning Period shall not be considered Maintenance and Testing for purposes of compliance with the annual operating hour limitations specified in the Operational Conditions section of this Permit.



77. The total mass emissions of NO<sub>x</sub>, CO, VOC, PM<sub>10</sub>, and SO<sub>x</sub> that are emitted from the reciprocating engines during the Commissioning Period shall accrue towards the emission limits specified in Condition 60.

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78. The Permittee shall submit a plan to the District at least four weeks prior to the first operation of the first of reciprocating engines S-1 through S-10, describing the procedures to be followed during the Commissioning Period. The plan shall include a description of each Commissioning Activity, the anticipated duration of each activity in hours, and the purpose of the activity. The activities described shall include, but not be limited to, the tuning of the reciprocating engines, the installation and operation of the SCR systems and the oxidation catalysts, the installation, calibration, and testing of the NO<sub>x</sub> and CO continuous emissions monitors, and any activities requiring the firing of each unit without abatement by an SCR system or oxidation catalyst.

79. Not later than 90 days prior to first operation, the Permittee shall prepare and submit to the District for approval a plan for complying with the requirements of 40 CFR 63 Subpart ZZZZ. This compliance plan shall provide for an initial performance test on each engine to demonstrate that each oxidation catalyst is achieving a minimum 70% reduction in NO<sub>x</sub>. Oxidation catalyst pressure drop and inlet temperature shall be measured during the initial performance test.

80. Not later than 90 days prior to first operation, the Permittee shall prepare and submit to the District for approval a plan for complying with the requirements of 40 CFR 60 Subpart IIII. The compliance plan shall provide for an initial performance test on each reciprocating engine to demonstrate compliance with the NO<sub>x</sub> and PM limitations of 40 CFR §60.4234(c)(1) and (c)(2) and shall establish operating parameters to be monitored continuously to ensure that each reciprocating engine continues to meet the applicable emission standards.

## IX. Operational Conditions

81. In the event of an excess emission incident, regardless of the cause, the Permittee shall immediately take 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, NCUAQMD Rules, and this Permit.

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82. All equipment listed in Table 1.0 Authorized Emission Devices and 2.0 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 contaminants into the atmosphere.

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83. The Permittee shall implement and maintain a written Startup, Shutdown, and Malfunction Plan as described in 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 shall also include a specific program of corrective actions to be implemented in the event of a malfunction in either the process 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. The Plan shall be submitted to the District less than ~~thirty (30)~~ calendar days prior to the Commissioning Period for any of reciprocating engines S-1 through S-10.

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84. 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 shall be submitted to the District not more than ~~thirty (30)~~ calendar days following expiration of the Commissioning Period for any of reciprocating engines S-1 through S-10. The Plan is subject to APCO approval.

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85. The Permittee shall develop, implement and maintain a written Device Maintenance & Replacement Plan that contains specific procedures for

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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 shall be submitted to the District not more than thirty (30) calendar days following expiration of the Commissioning Period for any of reciprocating engines S-1 through S-10. The Plan is subject to APCO approval.

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86. The Permittee shall only operate the Reciprocating engines S-1 through S-10 in Natural Gas Mode except during the Commissioning Period, during Maintenance and Testing, and during Natural Gas Curtailment as set forth in this permit.

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87. The Permittee shall not operate reciprocating engines S-1 through S-10 such that Startup Periods exceed 60 minutes in length.

88. The Permittee shall not operate reciprocating engines S-1 through S-10 such that Shutdown Periods exceed 30 minutes in length.

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89. 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.

90. 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.

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91. The Permittee shall not operate any of the reciprocating engines S-1 through S-10 below 50% load except during Startup and Shutdown Periods.

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92. 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.

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93. While operating the reciprocating engines S-1 through S-10 in Diesel Mode, the Permittee shall fire the engines:

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a. Only with CARB Diesel as specified in Table 1.4 Fuel Specifications for S-1 through S-10.

b. For no more than 50 hours per year for each engine for Maintenance and Testing. [CCR Title 17, §93115], and

c. Such that the combined engine operating hours do not exceed 1000.0 engine hours per year on a 365 day rolling average basis.

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94. 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

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minus 10%) deviation from the pressure drop established during performance testing.

95. 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 does not apply during Startup or Shutdown Periods or during malfunctions. [40 CFR 63 Subpart ZZZZ]

96. 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%, calculated on a 3-hour rolling average. This Condition does not apply during Startup or Shutdown Periods or during malfunctions. [40 CFR 63 Subpart ZZZZ]

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

97. The Emergency IC Diesel Generators S-11 and S-12 are authorized the following maximum allowable annual hours of operation governed by the Stationary Diesel Engine ATCM as listed in Table 6.0 below.

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**Table 6.0 Hours of Operation for Emergency IC Diesel Generators S-11 & S-12**

Not Limited by the ATCM	Not Limited by the ATCM	50 hours/year

98. The Permittee shall not operate the reciprocating engines S-11 and S-12, for the purpose of maintenance and testing, in excess of the hours limits listed in Table 6.1 below:

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**Table 6.1 S-11 and S-12 Hourly Operating Limits**

1	12	12	13	13
1	12	12	13	13

99. The Permittee shall not operate the reciprocating engines S-11 and S-12, for the purpose of maintenance and testing, within the same 24 hour period.

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100. The Permittee shall not operate the reciprocating 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.

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101. The Permittee shall not operate reciprocating engine S-11, for the purpose of maintenance and testing, for more than 45 minutes in any 60 minute period.

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## X. Reporting & Recordkeeping Conditions

102. The Permittee shall report all occurrences of breakdowns of the equipment listed in Table 1.0 Authorized Emission Devices or Table 2.0 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 NCUAQMD Rule 105 §5.0. Formatted: Bullets and Numbering
103. 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. Formatted: Bullets and Numbering
104. The Permittee shall immediately report the following information when an event occurs where emissions from the equipment listed in Table 1.0 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 conditions or circumstance causing or contributing to the excess emission event
  - d. Emission unit of control device or monitor affected
  - e. Estimate of the quantity and type of pollutants released
  - f. Description of corrective actions taken
  - g. Actions taken to prevent recurrence of excess emission event.
105. 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 form must be submitted to the NCUAQMD according to the following schedule: The semiannual certification (covering quarters 1 and 2) must be submitted prior to June 31<sup>st</sup> of the reporting year; and the annual certification (covering quarters 1, 3, and 4) prior to March 1<sup>st</sup> of the following calendar year. The content of the Certification shall include copies of the records designated in Table 1.0 to be kept "Annually". Formatted: Bullets and Numbering
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106. The Permittee shall maintain monthly 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 monthly log of usage shall list and document the nature of use for each of the following by recording the hour meter readings for each operational event:
- a. Emergency use hours of operation;
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- 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 §(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 §(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 engines and all fuel purchased for use in the engines, 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 owner or operator who received the fuel;
  - vi. Signature of provider indicating fuel was delivered.

107. The Permittee shall continuously maintain onsite for the most recent five year period and shall be made available to the MQUAQMA APCO upon request, the records as listed in Table 7.0 below

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**Table 7.0 Required Records for Engines S-1 through S-10**

<p>Records of maintenance conducted on engines (40 CFR 60 Subpart IIII)</p> <ul style="list-style-type: none"> <li>B. Time, duration, and fuel firing mode for each engine startup</li> <li>C. Time, duration, and fuel firing mode for each engine shutdown</li> <li>D. Time, duration and reason for each period of operation in Diesel Mode</li> <li>E. For each bulk delivery of diesel fuel received, certification from the supplier that the diesel fuel meets or exceeds CARB Diesel specifications</li> <li>F. For each bulk delivery of diesel fuel received, the higher heating value (HHV) and sulfur content (wt %) of the fuel</li> </ul>
<ul style="list-style-type: none"> <li>A. NOx (ppmvd @15% O<sub>2</sub>)</li> <li>B. CO (ppmvd @15% O<sub>2</sub>)</li> <li>C. O<sub>2</sub> or CO<sub>2</sub> (%)</li> <li>D. Exhaust gas temperature as SCR inlet (°F)</li> <li>E. Exhaust gas temperature at OC inlet (°F)</li> <li>F. Engine load (%)</li> </ul>

- A. NOx (ppmvd @15% O<sub>2</sub>) and lb/hr, on a rolling 3 hour average
- B. CO (ppmvd @15% O<sub>2</sub>) and lb/hr, on a rolling 3 hour average
- C. ROC (ppmvd @15% O<sub>2</sub>) and lb/hr, on a rolling 3 hour average
- D. NH<sub>3</sub> (ppmvd @15% O<sub>2</sub>) and lb/hr, on a rolling 3 hour average
- E. SOx (ppmvd @15% O<sub>2</sub>) and lb/hr, on a rolling 3 hour average
- F. Total natural gas fuel and Diesel pilot fuel consumption in Natural Gas Mode (MMBtu HHV, 3-hr rolling average)

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- G. Diesel fuel consumption during Diesel Mode (MMBtu HHV, 3-hr rolling average),

Deleted: <#>Diesel pilot fuel consumption (MMBtu HHV, 3-hr rolling average)¶

- A. NOx (lbs/day, total, all engines)
- B. CO (lbs/day, total, all engines)
- C. ROC (lbs/day, total, all engines)
- D. SOx (lbs/day, total, all engines)
- E. PM (lbs/day, total, all engines)
- F. Diesel Particulate Matter (lbs/day, total, all engines)
- G. Total natural gas and Diesel pilot fuel consumption during Natural Gas Mode (MMBtu HHV, each engine and total, all engines)
- H. Diesel fuel consumption during Diesel Mode (MMBtu HHV, each engine and total, all engines)

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Deleted: ¶ Volumetric proportion of natural gas to diesel pilot injection when operating in Natural Gas Mode

- I. Engine load (% load on 100% average each engine and total, all engines)
- J. Hours of operation (each engine and total, all engines)
- K. Quantity of fuel combusted (therms, gallons, each engine and total, all engines)

Deleted: <#>Diesel fuel consumption during Diesel Mode (MMBtu HHV)¶

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- A. Sulfur content of natural gas (gr/100scf, monthly fuel testing)
- B. Natural gas sulfur content (gr/100scf, 12 month rolling average)



- A. NOx (tons)
- B. CO (tons)
- C. SOx (tons)
- D. ROC(tons)
- E. PM (tons)
- F. Diesel Particulate Matter (tons)
- G. Natural gas fuel consumption (MMBtu HHV)
- H. Diesel pilot fuel consumption (MMBtu HHV)
- I. Diesel fuel consumption during Diesel Mode (MMBtu HHV)
- J. Sulfur content of natural gas (gr/100scf, 12 month rolling average)
- K. Hours of operation
- L. Quantity of fuel combusted (therms, gallons)

- A. NOx (tons)
- B. CO (tons)
- C. SOx (tons)
- D. ROC(tons)
- E. PM (tons)
- F. Diesel Particulate Matter (tons)
- G. Natural gas fuel consumption (MMBtu HHV)
- H. Diesel pilot fuel consumption (MMBtu HHV)
- I. Diesel fuel consumption during Diesel Mode (MMBtu HHV)
- J. Sulfur content of natural gas (gr/100scf, annual average)
- K. Hours of operation
- L. Quantity of fuel combusted (therms, gallons)

108. For each Quarter, the Permittee shall submit a written report to the APCO detailing the following items to 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

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g. A negative declaration when no excess emissions occurred.

109. The Permittee shall provide notification and record keeping as required pursuant to 40 CFR, Part 60, Subpart A, 60.7.
110. 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 the CAPCOA / CARB reference document *Emission Inventory Criteria Guidelines*. The inventory report shall be submitted to the NCUAQMD APCO no later than March 1st of the following calendar year. The inventory report is subject to NCUAQMD APCO approval.
111. No later than 14 months after the Commissioning Period for reciprocating engines S-1 through S-10 has concluded, the Permittee shall submit to the NCUAQMD APCO a revised health risk assessment. The health risk assessment shall be prepared pursuant to an NCUAQMD APCO approved protocol based upon CARB and California Office of Health and Hazard Assessment guidance documents.
112. The Permittee shall submit the health risk assessment protocol to the NCUAQMD APCO for review no later than 6 months after the Commissioning Period for the reciprocating engines S-1 through S-10 has concluded.
113. 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, mail, electronic mail, or facsimile. The notification shall include, but not be limited to, the following:
- 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.
114. Not later than 24 hours following the end of a period of any diesel mode operation, the permittee shall notify the APCO by email or facsimile of the following:
- 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.

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## XI. Testing & Compliance Monitoring Conditions

115. The Permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. Formatted: Bullets and Numbering
116. The Permittee shall monitor and record exhaust gas temperature at selective catalytic reduction inlet and at the face of the oxidation catalyst. [40 CFR 63 Subpart ZZZZ] Formatted: Bullets and Numbering
117. Not less than thirty days prior to the date of any source test required by this Permit, the Permittee shall provide the NCUAQMD APCO with written notice of the planned date of the test and a copy of the source test protocol. Formatted: Bullets and Numbering
118. Source test results shall be summarized in a written report and submitted to the NCUAQMD 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 NCUAQMD APCO no later than 60 days after the testing is completed. Formatted: Bullets and Numbering
119. The Permittee shall demonstrate compliance with all the emission limits identified in this Permit during the Commissioning Period of each of the reciprocating engines S-1 through S-10 using the following methods. Testing shall be conducted both while the engines are operated in Natural Gas Mode and while operated in Diesel Mode. All compliance tests shall be conducted at 50%, 75%, and 95% or greater of the operating capacity of each reciprocating engine. Alternative test methods may be approved by the APCO.
- a. Particulate Matter – CARB Method 5 (front and back half) or EPA Methods 11a and 202
  - b. Diesel Particulate Matter – CARB Method 5 (front half)
  - c. Visible Emission
    - ii. Permittee shall perform a “Visible Emission Evaluation” (VEE) concurrent with particulate matter testing. A CARB certified contractor shall perform such an evaluation.
  - d. Ammonia – Bay Area Air Quality Management District Method ST-1B
  - e. Reactive Organic Gases – CARB Method 100
  - f. Nitrogen Oxides – CARB Method 100
  - g. Carbon Monoxide – CARB Method 100
  - h. Oxygen – CARB Method 100
    - iii. Oxygen shall be measured at the inlet and outlet of the oxidation catalyst
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- iv. Oxygen measurements shall be made at the same time as the CO measurements
- v. 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
- j. Liquid Fuel Sulfur Content – ASTM D5453-93

120. The Permittee shall demonstrate compliance with all the emission limits identified in this Permit for the reciprocating engines S-1 through S-10 once per calendar year unless indicated below, using the following methods. Except as provided in Condition 122, testing shall be conducted while the engines are operated in Natural Gas Mode. All compliance tests shall be conducted at an operating capacity of 50%, 75%, or 95% or greater during the testing of each reciprocating engine. Alternative test methods may be approved by the APCO.

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- 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)
- c. Visible Emissions – Permittee shall perform a "Visible Emission Evaluation" (VEE) concurrent with particulate matter testing. A CARB certified contractor shall perform such an evaluation.
- d. Ammonia – Bay Area Air Quality Management District Method ST-1B
- e. Reactive Organic Gases – CARB Method 100
- f. Nitrogen Oxides – CARB Method 100
- g. Carbon Monoxide – CARB Method 100
- h. 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
  - iii. 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
- j. Liquid Fuel Sulfur Content – ASTM D5453-93

121. The engines shall be tested on a rotating basis with all of the engines to be tested in natural gas mode each year and all engines tested at the three different load values at least once every three years. Each engine shall be tested, at the following loads (50%, 75%, >95%) or under conditions determined by the APCO to most challenge the emission control equipment. 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.

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122. Permittee shall demonstrate compliance with permitted emission limits for Engines S-1 through S-10 while operating in Diesel Mode once every three years

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or following each 200 hours of operation of an individual engine in Diesel mode (but not more frequently than once each year) whichever is sooner. Compliance shall be demonstrated as indicated below using the following methods. All compliance tests shall be conducted while an engine is operated in Diesel mode at 50%, 75% or 95% or greater operating capacity of each engine; or under conditions determined by the APCO to most challenge the emission control equipment. Alternative test methods may be approved by the APCO:

- 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
  - i. CO shall be measured at the inlet and outlet of the oxidation catalyst.
- h. 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.
- i. Liquid Fuel Sulfur Content - ASTM D5453-98

123. The engines shall be tested at various loads (50%, 75%, >95%) on a rotating basis, with one-third of the engines to be tested in diesel mode in each year tested at each of the three loads. 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.

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124. 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.

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125. The Permittee shall demonstrate compliance with the hourly, daily, and annual SOx emission limits 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.

126. The Permittee shall demonstrate compliance with the hourly, daily, and annual PM emission limits and the diesel particulate matter emission limits through the use of valid fuel use records, source tests, and APCO approved emission factors and methodology.

127. Relative accuracy test audits (RATAs) shall be performed on each CEMS at least once every twelve months, in accordance with the requirements of 40 CFR 60, Appendix B. Calibration Gas Audits of continuous emission monitors 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 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.

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128. No later than 180 days after construction of the equipment authorized pursuant to this permit begins, and concurrent with the commencement of operation, the Permittee shall provide full funding for the purchase and installation of a new PM10/PM2.5 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 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 be responsible for the procurement, operation and maintenance of the site, and District staff will be responsible for collecting, securing, and quality assuring all data.

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129. No later than 180 days after construction of the equipment authorized pursuant to this permit begins, and concurrent with the commencement of operation, 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 be responsible for 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.

**NORTH COAST UNIFIED  
AIR QUALITY  
MANAGEMENT DISTRICT**

2300 MYRTLE AVENUE  
EUREKA, CALIFORNIA 95501

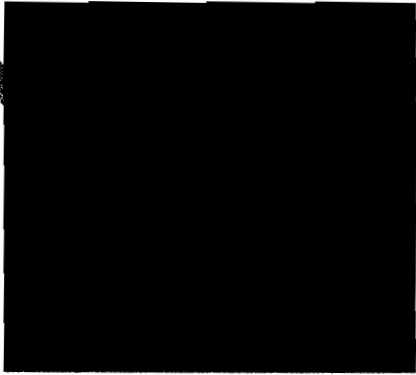
PHONE (707) 443-3093  
FAX (707) 443-3099

DATE: \_\_\_\_\_

BY: \_\_\_\_\_

RICHARD MARTIN, JR.  
AIR POLLUTION CONTROL OFFICER

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Permit Seal

**Table 4.2 Diesel Fuel Firing Limitations (Pilot)**

	58	1,402	376,734