

**NORTH COAST UNIFIED  
AIR QUALITY MANAGEMENT DISTRICT  
2300 Myrtle Avenue, Eureka, CA 95501  
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**SIGNIFICANT MODIFICATION TO THE  
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, 2013

**PERMIT REVISION HISTORY:**

Initial Permit	March 17, 1998
Minor Modification	May 1, 2000
Minor Modification	November 28, 2000
Significant Modification	February 8, 2010

**RESPONSIBLE OFFICIAL:**

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**NATURE OF BUSINESS:**  
Commercial Electricity Generation

**STANDARD INDUSTRIAL  
CLASSIFICATION (SIC):**  
4911

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## PERMIT SUMMARY

This permit is a Significant Modification to the Title V Permit to Operate issued pursuant to North Coast Unified Air Quality Management District (District) Rules and Regulations and the U.S. EPA's 40 CFR Part 70 (State Operating Permit Programs) Regulations.

The application for this air quality Permit to Operate has been evaluated for compliance with District, State, and Federal air quality rules and regulations. The following listed rules are the major rules that were found to be applicable at the time of this permit review, and based on the information submitted with the Title V permit application.

### Federally Enforceable Rules & Regulations

Citation	Description	Adoption Date
Regulation I, Rule 102	Permit Requirements	5-19-05
Regulation I, Rule 110	New Source Review Standards	5-19-05
Regulation I, Rule 103	Action on Applications	5-19-05
Regulation I, Rule 104.2	Visible Emissions	5-19-05
Regulation I, Rule 104.3	Particulate Matter	5-19-05
Regulation I, Rule 104.4	Fugitive Dust	5-19-05
Regulation I, Rule 104.5	Sulfur Oxide Emissions	5-19-05
Regulation V	Procedures for Issuing Permits to Operate for Sources Subject to Title V	5-19-05
NSPS	40 CFR 60 Subpart III – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	Promulgated 07-11-2006
NSPS	40 CFR 60 Subpart Db – Standards of Performance for Industrial, Commercial, and Institutional Steam Generating Units	Promulgated 12-16-1987
NESHAP	40 CFR 63 Subpart ZZZZ – Stationary IC engines	Amended 1-18-2008

### Non-Federally Enforceable Rules & Regulations

Citation	Description	Adoption Date
Regulation IV, Rule 400	Stationary Source Permit Fees	5-19-05
Regulation IV, Rule 406	Title V Fees	5-19-05
Regulation IV, Rule 407	Air Toxic "Hot Spots" (AB2588) Fees	5-19-05
Regulation IV, Rule 412	Major Source Assessment	5-19-05
CCR Title 17 Section 93115	Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines	Approved 9-08-2004, last revised 10-18-2007

## **FACILITY DESCRIPTION**

### **PERMIT HISTORY**

March 17, 1998	Initial Permit
May 1, 2000	Minor Modification
November 28, 2000	Minor Modification
Application for Certification	September 29, 2006
PDOC	October 24, 2007
FDOC, ATC/PSD Permit	April 14, 2008
ATC / PSD Permit	
Administrative Amendment	December 2, 2009
Significant Modification, Title V Permit To Operate	February 8, 2010

### **EQUIPMENT DESCRIPTION**

Since the mid 1950's, the Pacific Gas & Electric Company (PG&E) has operated power generation equipment at the Humboldt Bay Power Plant located at 1000 King Salmon Avenue in Eureka, California. The plant 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.

Historically, the facility has produced electricity for commercial distribution from two fossil fuel fired steam generators and two diesel fired gas turbine peaking units. The facility currently has a maximum electrical output of 135 MW. As the original fossil fired boiler units are nearing the end of their useful life, PG&E has proposed to replace the equipment with ten dual fueled internal combustion engines.

The new plant will consist of ten Wärtsilä 18V50DF16.3 MW lean-burn reciprocating engines, equipped with selective catalytic reduction (SCR), oxidation catalyst, and associated support equipment including continuous emissions monitors. The primary fuel will be natural gas with diesel pilot injection, and the backup fuel will be diesel. The applicant will also install a diesel-fired emergency back-up generator and a diesel-fired fire pump. PG&E has identified and will be providing offsets for the project.

On April 14, 2008, the Air Pollution Control Officer issued a Final Determination of Compliance (FDOC) pursuant to District Rule 110 §9.6. The FDOC served as a conditional ATC and temporary Permit to Operate. The ATC was conditioned on the applicant's receipt of a license to operate from the California Energy Commission (CEC), which was issued on September 24, 2008. The CEC authorized commencement of construction on October 10, 2008 and site preparation began on or about October 13, 2008.

## **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** – The facility 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 (75% annual capacity factor). Normal operation of the plant 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 ATC permit to a maximum of 1000 operating hours per year total for all 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. The generation would be adjusted periodically to the load demand primarily by increasing or decreasing the number of reciprocating engine units in operation; and secondarily by raising or lowering the output of an individual reciprocating engine. Due to the modular nature of the project configuration, partial shutdown of the engine group will occur at certain times of any given day during any given year. This mode of operation could generally be expected during late evening and early morning hours when system demand may be low. As additional generating capacity becomes available in the foreseeable future, more frequent operation in this mode is anticipated. Several alternative energy projects have recently been proposed for the area which will compliment the modular design of this project.

**Full Shutdown** – This would occur if forced by equipment malfunction, fuel supply interruption, transmission line disconnect, natural disaster, or market conditions. The project 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.

**Construction, Commissioning, and Decommissioning** – The facility is the primary source of commercial power generation for the region. As such, it is necessary to continue operation of the existing equipment during both the construction and commissioning phases of the new equipment. Once commercial operation of the new units is achieved, PG&E will surrender the operating permits for the existing equipment and begin the decommissioning of the old units.

## 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. **CEC CPM:** California Energy Commission Compliance Program Manager
- i. **CEMS:** Continuous Emissions Monitoring System
- j. **CFR:** the Code of Federal Regulations
- k. **Commencement of Onsite Construction:** the commencement of a program of significant and continuous construction at the Facility or modification of the emissions unit(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
- p. **Diesel Mode:** the firing of reciprocating engines S-1 through S-10 on CARB diesel, when the heat input from liquid fuel exceeds 0.8

- MMBtu/hr, and when the engine operates under the theoretical Diesel cycle.
- q. **Diesel Mode Startup:** a Startup Period during which the reciprocating engines operates in Diesel Mode for periods exceeding one hundred and twenty (120) seconds.
  - r. **Diesel Particulate Matter (DPM):** filterable particulate matter (PM) measured using EPA method 5
  - s. **Diesel Particulate Matter ATCM Emergency Use:** shall only pertain to engines D-8, D-25, 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.
  - t. **Distillate Fuel Oil:** liquid petroleum product obtained from the distillation of crude oil. Limited to the commonly referenced grades Fuel Oil #1 and #2.
  - u. **District:** North Coast Unified Air Quality Management District
  - v. **Dscfm:** dry standard cubic feet per minute
  - w. **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.
  - x. **EPA:** the United States Environmental Protection Agency
  - y. **Facility:** the site of the Humboldt Bay Generating Station at HBPP
  - z. **Fuel Oil:** liquid petroleum product obtained from the distillation of crude oil. Any of the commonly referenced six classes of petroleum distillates (e.g. Fuel Oil #6).
  - aa. **Firing Hours:** Period of time during which fuel is flowing to a unit, measured in minutes divided by 60
  - bb. **HBGS:** Humboldt Bay Generating Station
  - cc. **HBPP:** Existing Humboldt Bay Power Plant and applicable District permits.
  - dd. **Heat Input:** the energy (heat) input of the fuel combusted at the higher heating value (HHV) of the fuel
  - ee. **HHV:** Higher Heating Value
  - ff. **Hr:** one hour – a standard measurement of time
  - gg. **H<sub>2</sub>S:** Hydrogen Sulfide

- hh. **Lb:** pound – an English unit of measurement of weight and mass being equivalent to 7000 grains, 16 ounces, and 0.453 kilograms
- ii. **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
- jj. **MMBtu:** million British thermal units
- kk. **Natural Gas:** any mixture of gaseous hydrocarbons containing at least 80 percent methane by volume as determined by Standard Method ASTM D1945-64
- ll. **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).
- mm. **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 engine operates under the theoretical Otto cycle.
- nn. **Natural Gas Mode Startup:** Startup Period during which the reciprocating engine operates in Diesel Mode for 120 seconds or less.
- oo. **NFPA:** National Fire Protection Association
- pp. **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
- qq. **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: 2300 Myrtle Ave., Eureka, CA 95501
- rr. **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”. The sum of the Operational Minutes in each mode shall be used for determining compliance with hours of operation limitations.
- ss. **Operational Mode Transfer:** the switching of fuel mode while operating at engine loads greater than 50%.
- tt. **O<sub>2</sub>:** Oxygen
- uu. **Permittee:** the owner or operator identified on the Permit title page (PG&E)
- vv. **PM:** Particulate Matter
- ww. **Ppmvd:** parts per million, volumetric dry

- xx. **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 §1.245
- yy. **Rolling 3-hour Period:** Any consecutive three-hour period, not including start-up or shut-down periods
- zz. **ROC:** reactive organic compound consistent with District Rule 101 §1.293
- aaa. **Quarter:** calendar quarter, consisting of the following Q1 - January through March; Q2 - April through June; Q3 - July through September; Q4 - October through December
- bbb. **Shutdown Period:** The 30 minute period immediately prior to the termination of fuel flow to the reciprocating engine.
- ccc. **SO<sub>2</sub>:** Sulfur Dioxide
- ddd. **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.
- eee. **VEE:** Visible Emissions Evaluation
- fff. **Year:** Any consecutive twelve-month period of time

## FEDERALLY ENFORCEABLE GENERAL REQUIREMENTS

### TITLE V PERMIT MODIFICATION

1. The Permittee shall submit to the Air Pollution Control Officer a completed Title V permit application for renewal no earlier than September 17, 2011 (18 months prior to the expiration date of the Title V permit) and no later than September 17, 2012 (6 months prior to the expiration date of the Title V permit). *[District Rule 502 §2.2; 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 §2.3; 40 CFR 70.5(a)(1)(ii)]*
3. The Permittee shall submit to the Air Pollution Control Officer timely updates to the Title V application as new requirements become applicable to the source, and in no event less than quarterly (i.e., every three months). *[40 CFR 70.5(b)]*
4. The Permittee shall promptly provide additional information in writing to the Air Pollution Control Officer upon discovery of submittal of any inaccurate information as part of the application or as a supplement thereto; or of any additional relevant facts previously omitted which are needed for accurate analysis of the application and including inaccurate information known, or which should have been known or should be known, by the Permittee(s). *[District Rule 502 §5.1, 5.3, 5.4; 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 §5.2; 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 §11.0; 40 CFR 70.6(a)(2)]*

## **COMPLIANCE**

8. The Permittee shall comply with all conditions of the Title V permit. *[District Rule 504 §2.7]*
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 §2.7.4]*
10. The Title V permit may be modified, revoked, reopened and reissued or terminated for cause. *[District Rule 503 §9.0]*
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 Significant Modification 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(2.7.3)]*
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 §2.7.5]*
14. This Title V permit does not convey any property rights of any sort or any exclusive privilege. *[District Rule 504 §2.7.2]*

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 §2.5]*

## **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 March 1<sup>st</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 §11.0 and Rule 504 §5.0; 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 §10.0; 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 followed by a written statement within seven (7) days describing the nature of the deviation from the federally enforceable permit condition. *[District Rule 504 §5.0; 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 original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the federally enforceable applicable requirement in the Title V permit. *[District Rule 502 §10.0 and Rule 504 §3.0; 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 §1.1]*

### **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:

- A. 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
- B. 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. *[District Rule 104 §2.0]*

## **PARTICULATE MATTER**

### 22.A. 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 §11.0, as applicable).

### B. 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 §11.0].

### C. 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.

### D. 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 follows:

**TABLE I**

<b>ALLOWABLE RATE OF EMISSION BASED ON PROCESS WEIGHT RATE</b>					
<b>Process Weight Rate</b>		<b>Rate of Emission</b>	<b>Process Weight Rate</b>		<b>Rate of Emission</b>
<b>Lb/Hr</b>	<b>Kg/Hr</b>	<b>Lb/Hr</b>	<b>Lb/Hr</b>	<b>Kg/Hr</b>	<b>Lb/Hr</b>
100	45	0.55	6,000	2,720	8.6
200	92	0.88	7,000	3,380	9.5
400	183	1.4	8,000	3,680	10.4
600	275	1.83	9,000	4,134	11.2
800	377	2.22	10,000	4,540	12.0
1,000	454	2.58	12,000	5,460	13.6
1,500	681	3.38	16,000	7,260	16.5
2,000	920	4.1	18,000	8,220	17.9
2,500	1,147	4.76	20,000	9,070	19.2
3,000	1,362	5.38	30,000	13,600	25.2
3,500	1,690	5.96	40,000	18,100	30.5
4,000	1,840	6.52	50,000	22,700	35.4
5,000	2,300	7.58	60,000	27,200	40.0

*Where the process weight per hour is between two listed figures, such process weight and maximum allowable particulate emission per hour shall be interpolated linearly. The total process weight of all similar process operations located at a single plant or of similar multiple plants located on a single premise, shall be used for determining the maximum allowable particulate emission from the combination of such operations.*  
 [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 §4.0]*

### **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 §5.0]*

### **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 §9.0]*
  - 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)**

28. 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]*
29. 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]*
30. 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**

31. 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**

32. 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**

33. 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]*
34. 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]*

35. 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]*
36. 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**

37. 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.

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.

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.

#### **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 judgment shall not affect or invalidate the remainder of this permit. These permit conditions are enforceable individually and severally. *[40 CFR 60.6(b)(5); District Rule 504 §2.8]*

### **LOCAL ENFORCEABLE ONLY, GENERAL REQUIREMENTS**

#### **APPLICABILITY**

39. 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.

40. This permit is effective only upon payment of the permit fees set out in District Rules and Regulations.

### **ADMINISTRATION**

41. 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.

42. 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 §1.0*]

43. 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 §6.3*]

44. 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 §6.0; District Rule 105 §1.0*]

45. 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 105 §5.0*]

46. 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. [*District Rule 102*]

47. 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*]

48. 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 §1.2*]
49. This Permit does not convey any property rights of any sort, or any exclusive privilege.
50. The "Right of Entry", as delineated in District Rule 109 §1.0 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.
51. 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.
52. 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.
53. 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 §8.0*]
54. 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*]
55. 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 §5.0*]
56. 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 §5.0*]

57. 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**

58. 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.

59. 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. The opacity limitation is in effect at all times, including but not limited to startup, shutdown, and malfunction. [*H&SC §41700; District Rule 104 §1.1*]

60. The 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. [*H&SC §41701; District Rule 104 §2.0*]

61. 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 §4.0*]

62. 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**

63. 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 105 §5.0*]
64. Permittee shall furnish to the APCO, within a reasonable time, 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. [*H&SC §42303; District Rule 103 §6.0*]
65. The Permittee shall record the following information in the event of an equipment breakdown or malfunction: date and time of event, event duration, description of event, identification of the cause of the event, identify what corrective measures were taken and if unsuccessful what additional measures should be taken in the future, and quantification of excess emissions released during the event. [*District Rule 105 §5.0*]

### **PERMIT TERM**

66. 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 §2.2, in which case the existing Title V permit will remain in effect until the Title V permit renewal has been issued or denied. [*40 CFR 70.7(c) (1)(ii)*]

## 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

67. The Permittee is authorized to operate the following equipment until such time as decommissioning is required by this Permit: *[District Rule 504 §2.1]*

**Table 1.0 Authorized Emission Devices (Humboldt Bay Power Plant)**

<b>Device NS-020</b> Manufacturer Type Rating – Output  Rating – Input Fuel Type Control Equipment SCC	<b>Boiler #1 (Steam Generator)</b> Babcock & Wilcox Steam Turbine 533,750 pounds of steam/hour ≈54MW Electricity Generation 680 MMBtu/hour Natural Gas and or Fuel Oil None 10100601, 10100401
<b>Device NS-021</b> Manufacturer Type Rating – Output Rating – Input Fuel Type Control Equipment SCC	<b>Boiler #2 (Steam Generator)</b> Riley Stoker Steam Turbine 566,250 pounds of steam/hour ≈54MW Electricity Generation 680 MMBtu/hour Natural Gas and or Fuel Oil None 10100601, 10100401
<b>Device NS-057A</b> Manufacturer Model Rating – Output Rating – Input Fuel Type Control Equipment SCC	<b>Turbine #2</b> Pratt & Whitney MFT4 ≈15MW Electricity Generation 227 MMBtu/hour Distillate Fuel Oil None 20100101
<b>Device NS-057B</b> Manufacturer Model Rating – Output Rating – Input Fuel Type Control Equipment SCC	<b>Turbine #3</b> Pratt & Whitney MFT4 ≈15MW Electricity Generation 227 MMBtu/hour Distillate Fuel Oil None 20100101
<b>Device D-8</b> Manufacturer Model, Year Manufactured Serial Number Rating - Output	<b>Fire Pump – Emergency Backup</b> Caterpillar 3304 DI, 1983 83Z00622 95 bhp
<b>Device D-23</b> Manufacturer Model, Year Manufactured Serial Number Rating - Output	<b>Emergency Black Start</b> Generac SD130, 1999 G3675D18EBYLC 195 bhp

68. The Permittee shall construct and operate the project as described in Authority To Construct application September 29<sup>th</sup> 2006 and its series of amendments ending with the most recent submittal of April 6<sup>th</sup> 2009. 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 1.1 and Table 1.2 below. For each of the reciprocating internal combustion engines S-1 through S-10, both a Selective Catalytic Reduction system (SCR) and an oxidation catalyst shall be designated "A-(engine number) SCR" and "B-(engine number) oxidation catalyst respectively". [District Rule 504 §2.1]

**Table 1.1 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 DM8149 (or equivalent) Diesel-fired Emergency IC Engine powering a 350kW electrical generator	469 HP
S-12	Cummins CFP9E-F20 (or equivalent) Diesel-fired Emergency IC Engine powering a fire water pump	268 HP

**Table 1.2 Authorized Control Devices**

Control Equipment	Manufacturer	Model	Specifications
Oxidation Catalyst	HUG Engineering (or equivalent)	OCT-0806-040-0062/450 (or equivalent)	Catalyst: Platinum Reactor 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 Reactor 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

69. 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 2.0, Table 2.1, or Table 2.2. *[District Rule 102 §5.0]*

**Table 2.0 S-1 Through S-10 Engine Specifications**

Primary Fuel	Natural Gas
Backup Fuel	CARB Diesel
Design Ambient Temperature	67.5 °F
Nominal Heat Input Rate (HHV)	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)
Nominal Exhaust Temperature	728°F
Nominal Exhaust Flow Rate	121,500 acfm
Exhaust Release Height	100 Feet (above grade)
Nominal Exhaust O <sub>2</sub> Concentration, dry volume	11.6%
Nominal Exhaust CO <sub>2</sub> Concentration, dry volume	5.3%
Emission Controls	Lean Burn Technology and SCR; Oxidation Catalyst
SIC	4911
SCC	20100202 natural gas mode; 20100301 diesel mode

**Table 2.1 S-11 Engine Specifications**

Primary Fuel	CARB Diesel
Nominal Heat Input Rate (HHV)	4.0 MMBtu/hr
Heat Input, gal/hr	29.1
SIC	4911
SCC	20100301

**Table 2.2 S-12 Engine Specifications**

Primary Fuel	CARB Diesel
Nominal Heat Input Rate (HHV)	1.94 MMBtu/hr
Heat Input, gal/hr	14.2
SIC	4911
SCC	20201607

70. The Permittee shall only fire units NS-020 and NS-021 with Natural Gas, Fuel Oil, or a combination of the two fuels. Fuel Oil sulfur content shall not exceed 1.7% as determined in accordance with 40 CFR Part 75. *[District Rule 102 §5.0]*

71. The Permittee shall only fire units NS-057A and NC-057B with Distillate Fuel Oil or equivalent Distillate Fuel Oil. Distillate Fuel Oil sulfur content shall not exceed 0.5% by weight. *[District Rule 102 §5.0, EPA PSD permit issued 4/28/77 and revised 2/23/79, 12/11/81]*

72. The Permittee shall only fire reciprocating engines S-1 through S-10 with fuel which meets or exceeds the fuel specifications identified in Tables 2.3. 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 §5.0]*

**Table 2.3 Fuel Specifications for 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

73. 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 at least once every twelve months or at more frequent intervals if necessary to ensure compliance with the 1% accuracy requirement. [*District Rule 102 §5.0*]
74. The exhaust stacks shall not be fitted with rain caps or any other similar device which would impede vertical exhaust flow. [*District Rule 102 §5.0*]
75. 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 Generators D-8, D-25, S-11, and S-12. [*District Rule 102 §5.0*]
76. The Emergency IC Diesel Generators D-8, D-25, 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.
77. The reciprocating engines S-11 and S-12 shall be certified to meet EPA Tier III emission standards for off-road engines. The Permittee shall submit documentation of EPA Tier III certification a minimum of 30 days prior to installation of the devices. [*40 CFR 60 Subpart IIII*]
78. 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. [*District Rule 102 §5.0*]
79. The Permittee's request for approval of an equivalent engine shall include the following information: engine manufacturer and model number, horsepower (hp) rating, exhaust stack information, and manufacturer's guaranteed emission concentrations. [*District Rule 504 §4.0; District Rule 102 §5.0*]
80. The Permittee's request for approval of an equivalent engine shall be submitted to the District at least thirty (30) days prior to the planned installation date. The Permittee shall also notify the District at least ten (10) days prior to the actual installation of the District approved equivalent engine. [*District Rule 103 §6.0*]
81. The Permittee shall install exhaust gas temperature monitoring devices at the inlet and the outlet of the oxidation catalyst. [*40 CFR §63.6625; BACT*]

82. 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 calibrated at least once every twelve months or at more frequent intervals if necessary to ensure compliance with the 1% requirement. *[District Rule 102 §5.0]*
83. 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 §5.0]*
84. 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]*
85. 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 §6.0]*
86. Both onsite and offset emission credits were utilized for this project. Prior to commencement of construction, in accordance with Rule 106 §6.6, the Permittee shall provide to the APCO documentation of transfer of ownership of offsite 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 District sufficient offsite emission credits to offset the increases listed in Table 3.0 below. NO<sub>x</sub> credits provided to offset PM<sub>10</sub> increases shall be at an inter-pollutant ratio of 3.58:1 after the appropriate distance ratio is applied. The Permittee shall permanently shut down the District Permit Units No. NS-020 (Boiler #1), NS-021 (Boiler #2) and NS-057 (Turbines #2 and #3) in accordance with the Startup, Commissioning & Simultaneous Operation Section of this Permit. *[40 CFR 51, Appendix S; District Rule 110]*

**Table 3.0 Required Offsite Offsets By Quarter**

Pollutant	Pollutant Quantities in Tons			
	1 <sup>st</sup> Quarter	2 <sup>nd</sup> Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter
PM <sub>10</sub>	2.45	2.35	2.37	2.34
ROC	0.62	0.59	0.59	0.59

**EMISSION LIMITING CONDITIONS**

87. 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 §3.1*]
88. 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 §5.0*]
89. For units NS-020, NS-021, the Permittee shall perform the following:
- a. Effective January 1, 2000, the Permittee shall hold allowances, as of the transfer deadline, in the facility account (after deductions under 40 CFR 73.34(c)) not less than the total annual emissions of sulfur dioxide for the previous calendar year from the unit [40 CFR 72.9(c)(1)(i)].
  - b. An affected unit shall be subject to the requirements under Condition 89.a:
    - i. Starting January 1, 2000, an affected unit under 40 CFR 72.6(a)(2); or
    - ii. Starting on the later of January 1, 2000 or the deadline for monitor certification under 40 CFR part 75, an affected unit under 40 CFR 72.6(a)(3).
  - c. Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program [40 CFR 72.9(c)(4)].
  - d. An allowance shall not be deducted in order to comply with the requirements under Condition 89 prior to the calendar year for which the allowance was allocated. [40 CFR 72.9(c)(5)]
  - e. An allowance allocated by the Administrator under the Acid Rain Program is a limited authorization to emit sulfur dioxide in accordance with the Acid Rain Program. No provision of the Acid Rain Program, the Acid Rain permit application, this permit, or the written exemption under 40 CFR 72.7 and 72.8 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization. [40 CFR 72.9(c)(6)]
90. For any affected unit in the Acid Rain Program which emits excess emissions in a calendar year, the Permittee shall:

- a. Pay without penalty required, and pay upon demand the interest on that penalty, as required by 40 CFR Part 77; and
  - b. Comply with the terms of an approved offset plan, as required by 40 CFR Part 11. *[40 CFR 72.9(e)(2)]*
  
91. A. Visible emissions from units NS-020, NS-021, NS-057A, and NS-057B shall not be as dark or darker in shade as that designated as No. 2 on the Ringleman Chart, or of such opacity so as to obscure an observer's view to a degree equal to or greater than 40%, for any period or periods aggregating more than 3 minutes in any one hour.  
  
B. 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. This visible emission limitation shall not apply during Startup or Shutdown Periods, or during the Commissioning Period. *[District Rule 102 §5.0]*
  
92. 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, except during the Commissioning Period, 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§5.0]*
  
93. 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]*
  
94. 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]*
  
95. For any affected unit in the Acid Rain Program which emits excess emissions in a calendar year, the Permittee shall submit a proposed offset plan as required under 40 CFR Part 77. *[40 CFR 72.9(e)(1)]*

**HEAT INPUT & FUEL LIMITATIONS**

**Engines S-1 Through S-10**

96. 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. *[District Rule 102 §5.0]*

**Table 4.0 Heat Input Limitations Per Engine**

Each Unit <sup>1</sup>		Heat Input, MMBtu (HHV)	
		Hourly 3 hr rolling average	Calendar Day
Natural Gas Mode <sup>2</sup>	Natural Gas	143.9	3,454
	Diesel (Pilot)	0.8	19
Diesel Mode	Diesel	148.9	3574

**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.

97. 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 all 10 engines. *[District Rule 102 §5.0]*

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

Sum of All 10 Units		Heat Input, MMBtu (HHV)		
		Hourly	Daily	Annual
Natural Gas Mode <sup>1</sup>	Natural Gas	1,439	34,536	9,277,233
	Diesel Pilot	7.9	190	51,576
Diesel Mode	Diesel	1,489	30,376	148,900

**Notes:**

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

98. The Permittee shall not exceed the diesel fuel firing limits while operating reciprocating engines S-1 through S-10 in the modes listed below. *[District Rule 102 §5.0]*

A. Natural Gas Mode.

**Table 4.2 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	58	1,402	376,734

B. Diesel Mode

**Table 4.3 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

**POLLUTANT LIMITATIONS**

99. The Permittee shall not discharge particulate matter from units NS-020 and NS-021 into the atmosphere in excess of 0.10 lb/MMBtu heat input. *[District Rule 104 §3.3]*

100. The Permittee shall not discharge particulate matter from units NS-057A and NS-057B into the atmosphere in excess of 0.20 gr/dscf of exhaust gas, calculated to 12 percent CO<sub>2</sub>. *[District Rule 104 §3.1]*

101. The Permittee shall not discharge nitrogen oxides, calculated as NO<sub>2</sub>, from units NS-057A and NS-057B into the atmosphere in excess of 0.70 lbs/million Btu heat input. *[EPA PSD permit issued 4/28/77 and revised 2/23/79 and 12/11/81]*

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

102. 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 during Startup or Shutdown Periods. *[District Rule 102 §5.0]*

**Table 5.0 Start & Shutdown Period Emission Limits**

Mode of Operation	Pollutant				
	NOx	CO	ROC	PM10	SOx
Natural Gas, lb/hr	23.6	24.1	17.9	3.6	0.4
Diesel Mode, lb/hr	164	25.5	17.2	10.8	0.22

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

103. The Permittee shall not operate reciprocating engines S-1 through S-10, such that they individually discharge pollutants exceeding the limits identified in Table 5.1 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 §5.0]

**Table 5.1 Natural Gas Mode Emission Limits – per engine**

Pollutant	Emission Rate		
	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

104. The combined discharge of pollutants, from the reciprocating engines S-1 through S-10 shall not exceed the limits listed in Table 5.2 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 §5.0]

**Table 5.2 S-1 Through S-10 Combined Natural Gas Mode Limit**

Pollutant	Emission Rate Lb/Day
CO	1,589
NH <sub>3</sub>	456
NOx	1,360
PM <sub>10</sub>	864
ROC	1,608
SOx	97

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

105. 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 5.3 below. The limits shall not apply during Startup or Shutdown Periods. [40 CFR 63.6(f)(1), District Rule 102 §5.0]

**Table 5.3 Diesel Mode Emission Limits – per engine**

Pollutant	Emission Rate		
	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
NOx	35.0	19.9	0.134
PM <sub>10</sub>	-	10.8	0.137
ROC	40.0	7.9	0.053
SOx	0.40	0.22	0.0016

106. 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 5.4 below. The limits shall not apply during the Commissioning Period as defined in this permit. *[District Rule 102 §5.0]*

**Table 5.4 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

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 5.5 below during any Calendar Day in which one or more of the engines are operated in diesel mode for any period of time.

**Table 5.5 S-1 Through S-10 Combined Diesel Mode Limit**

Pollutant	Emission Rate Lb/Day
CO	2,219
NH <sub>3</sub>	506
NOx	9,103
PM <sub>10</sub>	1,542
ROC	2,183
SOx	97

107. For purposes of determining compliance of reciprocating engines S-1 through S-10 with the daily PM<sub>10</sub> limit in Table 5.5, the Permittee shall calculate and record PM<sub>10</sub> emissions from each engine for each Calendar Day as follows: 0.180 pounds per minute times the number of Operational Minutes during that Calendar Day; plus 0.060 pounds per minute times the number of Natural Gas Mode Operational Minutes during that Calendar Day. In no event shall the Permittee operate the engines such that their combined hours of operation in Diesel Mode exceed 142 hours per Calendar Day. *[District Rule 102 §5.0]*

108. 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 5.6 below. *[District Rule 102 §5.0]*

**Table 5.6 S-1 Through S-10 Combined Annual Emission Limits**

Pollutant	Emission Rate Tons/Yr
CO	172.7
NH <sub>3</sub>	63.3
NOx	179.1
PM <sub>10</sub>	119.8
ROC	190.8
SOx	4.3

**Engines D-8, D-23, S-11, and S-12**

109. The Permittee shall not operate reciprocating engines D-8, D-25, S-11, and S-12 such that pollutant discharge into the atmosphere exceeds the quantities in Table 5.7 below. *[District Rule 102 §5.0]*

**Table 5.7 Reciprocating Engines D-8, D-23, 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
D-8 Fire Pump	CO	7.16	1.50
	DPM	2.34	0.5
	NOx	33.32	6.98
	ROC (non-methane HC)	3.25	0.68
	SOx	-	0.0024
D-23 Black Start Generator	CO	0.95	0.41
	DPM	0.14	0.06
	NOx	6.79	2.92
	ROC (non-methane HC)	0.42	0.18
	SOx	-	0.0781

110. 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 5.8 below. *[District Rule 102 §5.0]*

**Table 5.8 S-11 and S-12 Combined Annual Emission Limits**

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

**STARTUP COMMISSIONING & SIMULTANEOUS OPERATION**

111. The Permittee shall discontinue operation of Permit Units NS-020 (Boiler #1), NS-021 (Boiler #2) and NS-057 (Turbines #2 and #3) and shall surrender the Permits to Operate for these Permit Units within 180 days after initial startup of reciprocating engines S-1 through S-10. *[District Rule 102 §5.0]*

112. The Permittee shall develop, implement, and maintain a written Commissioning Plan for reciprocating engines S-1 through S-10 that describes specific procedures to be followed during the Commissioning Period. The Commissioning Plan shall be submitted to the District at least thirty (30) days prior to the first operation of the first of reciprocating engines S-1 through S-10. 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 NOx and CO continuous emissions monitors, and any activities requiring the firing of each unit without abatement by an SCR system or oxidation catalyst. The plan shall provide that the reciprocating engines S-1 through S-10 shall be commissioned in two groups of five engines each; that each of the existing boilers [District Permit Units NS-020 (Boiler #1) and NS-021 (Boiler #2)] shall be replaced by one of the groups of engines; and that each boiler and its associated group of engines shall not be in operation simultaneously for more than 90 calendar days. Operation of a boiler and any of its associated engines for any portion of a calendar day shall accrue toward the maximum limit of 90 days applicable to that boiler. *[District Rule 102 §5.0; District Rule 110 Section 8.8]*

113. The Commissioning Plan is subject to District review and approval. If the District does not act to approve, reject, or request additional information within thirty (30) days of receipt of the Plan submitted by the Permittee, the Plan shall be considered to be approved. The Permittee shall not commission reciprocating engines S-1 through S-10 unless a District approved Commissioning Plan is in effect. *[District Rule 102 §5.0]*

114. In accordance with the District approved Commissioning Plan required under the Startup, Commissioning & Simultaneous Operation Section of this Permit, the reciprocating engines shall be tuned to minimize emissions in the time frame specified in the approved Commissioning Plan. *[District Rule 102 §5.0]*
115. 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. *[District Rule 102 §5.0]*
116. 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 [District Permit Units NS-020 (Boiler #1), NS-021 (Boiler #2) and NS-057 (Turbines)] and any of the new HBGS reciprocating engines S-1 through S-10 shall not be in simultaneous operation for more than 180 calendar days, including their individual Commissioning Periods; and shall be shutdown and their Permits to Operate (PTOs) surrendered once engines S-1 through S-10 have successfully completed their Commissioning Phase as defined elsewhere in this permit. Operation of the existing plant units and any engine or engines for any portion of a calendar day, shall accrue toward the maximum limit of 180 days. Commissioning Activities may be further limited in scope and duration by the District approved Commissioning Plan. *[District Rule 110, Rule 102 §5.0]*
117. Selective catalytic reduction (SCR) systems and oxidation catalysts shall serve each reciprocating engine S-1 through S-10 except as provided for in the District approved Commissioning Plan required under the Startup, Commissioning & Simultaneous Operation Section of this Permit. Permittee shall submit SCR and oxidation catalyst design details to the District for review and approval at least 90 days prior to scheduled delivery of these systems to the site. The Permittee shall not install or operate the SCR and oxidation catalyst systems without authorization from the APCO. *[District Rule 110, District Rule 102 §5.0]*
118. Permittee shall submit continuous emission monitor design, installation, and operational details to the District within 120 days following commencement of construction. *[District Rule 102 §5.0]*
119. In accordance with the District approved Commissioning Plan required under the Startup, Commissioning & Simultaneous Operation Section of this Permit, the Selective Catalytic Reduction (SCR) system and the oxidation catalyst shall be installed, adjusted, and operated to minimize emissions from each reciprocating engine in the time frame specified in the Commissioning Plan. *[District Rule 102 §5.0]*
120. The continuous monitors specified in the Authorized Equipment Section of this Permit 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 NO<sub>x</sub> and CO emission concentrations. *[District Rule 102 §5.0]*

121. 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 NO<sub>x</sub> and CO emission concentrations, summarized for each hour and each day. *[District Rule 102 §5.0; District Regulation Appendix B]*
122. 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. *[District Rule 102 §5.0]*
123. A. 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: *[District Rule 102 §5.0]*
- 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.
- B. When one or more reciprocating engines S-1 through S-10 are undergoing Commissioning Activities, including during the test run and run phases, the Permittee shall not:
- a. Simultaneously operate more than five units which have not yet completed commissioning
  - b. Operate in Diesel Mode Startup any unit which has completed commissioning while there are any non-commissioned units in operation.
124. During the Commissioning Period, the Permittee shall not operate reciprocating engines S-1 through S-12, such that the combined emissions from all of the engines regardless of their commissioning status, exceed any of the limits in Table 5.9 below: *[District Rule 102 §5.0]*

**Table 5.9 S-1 through S-12 Combined Commissioning Emission Limits**

Pollutant	Lbs/Hr	Lbs/Day
CO	197.2	2,662
NO <sub>x</sub>	392	4,365
PM <sub>10</sub>	54	1,296
ROC (as Methane)	86.6	1,559
SO <sub>x</sub> (SO <sub>2</sub> )	2.0	48.4

125. For each engine during its Commissioning Period, after steady-state operation of the SCR system and the oxidation catalyst has occurred, the NO<sub>x</sub> and CO emissions from that reciprocating engine shall thereafter comply with the limits specified in the Pollutant Limitations Section of this Permit. For purposes of compliance with this condition, steady-state operation shall mean: the engine, SCR system, and oxidation catalyst all functioning according to manufacturer's specifications and operating in compliance with emission limits and are ready for performance testing in accordance with the requirements of Testing and Compliance Monitoring Section of this Permit. In no event, shall the Commissioning Period for each engine exceed 180 consecutive calendar days beginning on the first day the engine is first fired. *[District Rule 102 §5.0]*
126. 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. *[District Rule 102 §5.0]*
127. The total mass emissions of NO<sub>x</sub>, CO, ROC, PM<sub>10</sub>, and SO<sub>x</sub> that are emitted from the reciprocating engines during the Commissioning Period shall accrue towards the annual emission limits specified in Pollutant Limitations Section of this Permit. *[District Rule 102 §5.0]*
128. 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 of the reciprocating engines S-1 through S-10 to demonstrate that each oxidation catalyst is achieving a minimum 70% reduction in CO over a four hour period. During the initial performance test, the Continuous Emission Monitors shall successfully complete a performance evaluation in accordance using PS3 and 4A of 40 CFR Part 60 Appendix B; the oxidation catalyst pressure drop and inlet temperature shall be measured using ASTM D6522-00 [§63.6625(a)]; and the CEMS data collected in accordance with §63.6625(a) with the data reduced to 1-hour averages.
- If the District does not act to approve, reject, or request additional information within thirty (30) days of receipt of the Plan submitted by the Permittee, the Plan shall be considered to be approved.
129. 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. This compliance plan shall provide for an initial performance test on each of the reciprocating engines S-1 through S-10 to demonstrate compliance with the NO<sub>x</sub> and PM limitations of 40 CFR §60.4204(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.
- If the District does not act to approve, reject, or request additional information within thirty (30) days of receipt of the Plan submitted by the Permittee, the Plan shall be considered to be approved

### **OPERATIONAL CONDITIONS**

#### **Boiler #1, NS-020**

130. If the Permittee fires the boiler with more than 15% per year or 10% per three year average heat input from fuel oil, then a COMS shall be installed per 40 CFR 75.14. *[40 CFR 75.14 (c)]*

#### **Boiler #2, NS-021**

131. If Boiler #2 meets the requirements for a return to a gas-fired unit status, then Permittee may elect to discontinue operation of the COMS as specified in 40 CFR 72.2 Definitions, Gas-fired Section (3)(ii)(A) and (B).

#### **Turbines #2 and #3, NS-057A and NS-057B**

132. The turbines shall be maintained and kept in good operating condition to assure compliance with applicable emission limitations. *[District Rule 102 §5.0]*

133. The combined total operating hours for both turbines shall not exceed 3,120 hours during any 365 day period. A log will be maintained to reflect the actual hours of operation for each turbine. *[District Rule 102 §5.0]*

#### **Engines S-1 through S-10**

134. 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, District Rules, and this Permit. *[40 CFR 70.6(a)(3)(iii)(B); District Rule 105 §5.0]*

135. All equipment listed in Table 1.0 Authorized Emission Devices and 1.1 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 §5.0]*

136. 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. The Plan shall be submitted to the District not less than thirty (30) calendar days prior to the Commissioning Period for any of reciprocating engines S-1 through S-10.

If the District does not act to approve, reject, or request additional information within thirty (30) days of receipt of the Plan submitted by the Permittee, the Plan shall be considered to be approved *[District Rule 102 §5.0]*

137. 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 sixty (60) 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. The Permittee shall not operate the reciprocating engines S-1 through S-12 and their associated control devices, after the expiration of the Commissioning Period for any of the reciprocating engines plus 60 days, unless a District approved Device Operational Plan is in effect. *[District Rule 102 §5.0]*
138. 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 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. The Permittee shall not operate the reciprocating engines S-1 through S-12 and their associated control devices, after the expiration of the Commissioning Period for any of the reciprocating engines plus 60 days, unless a District approved Device Maintenance & Replacement Plan is in effect. *[District Rule 102 §5.0]*
139. 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 Curtailments as set forth in this permit. *[District Rule 102 §5.0]*
140. The Permittee shall not operate reciprocating engines S-1 through S-10 such that Startup Periods exceed 60 minutes in length. This limitation shall not apply during the Commissioning Period. *[District Rule 102 §5.0]*
141. The Permittee shall not operate reciprocating engines S-1 through S-10 such that Shutdown Periods exceed 30 minutes in length. This limitation shall not apply during the Commissioning Period. *[District Rule 102 §5.0]*
142. 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. This limitation shall not apply during the Commissioning Period. *[District Rule 102 §5.0]*

143. 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. For the purpose of determining compliance with this condition, Startup and Shutdown Periods during the Commissioning Period shall not accrue toward these limitations. *[District Rule 102 §5.0]*
144. The Permittee shall not operate any of the reciprocating engines S-1 through S-10 below 50% load except during Startup and Shutdown Periods. This limitation shall not apply during the Commissioning Period. *[District Rule 102 §5.0]*
145. 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. This limitation shall not apply during the Commissioning Period. *[District Rule 102 §5.0]*
146. While operating the reciprocating engines S-1 through S-10 in Diesel Mode, the Permittee shall fire the engines:
- a. Only with CARB Diesel as specified in Table 2.3 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 1000.0 engine hours per year on a 365 day rolling average basis.
147. 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. *[40 CFR 63 Subpart ZZZZ]*
148. 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 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 during the Commissioning Period, or during malfunctions. *[40 CFR 63 Subpart ZZZZ]*

149. 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. This Condition does not apply during Startup or Shutdown Periods, during the Commissioning Period, or during malfunctions. [40 CFR 63 Subpart ZZZZ]

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

150. The Permittee shall not operate the reciprocating engines S-11 and S-12, for the purpose of maintenance and testing, in excess of the hour limits listed in Table 6.0 below [District Rule 102 §5.0]:

**Table 6.0 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

151. The Permittee shall not operate the reciprocating engines D-8, D-25, S-11, and S-12, for the purpose of maintenance and testing, within the same 24 hour period. [District Rule 102 §5.0]

152. The Permittee shall not operate the reciprocating engines D-8, D-25, 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 §5.0]

153. 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. [District Rule 102 §5.0]

**REPORTING & RECORDKEEPING**

**Boiler Units #1 and #2, NS-020 and NS-021**

154. For units NS-020 and NS-021, unless otherwise provided, the Permittee shall
- a. Keep on site at the plant each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time prior to the end of 5 years, in writing by the District or the Administrator [40 CFR 72.9(f)(1)]:
    - i. The certificate of representation for the designated representative for the plant and each affected unit at the plant and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR 72.24; provided that the certificate and documents shall be retained on site at the plant

- beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation changing the designated representative;
- ii. Copies of all reports, compliance certifications, and other submissions and all records made or required under the Acid Rain Program; and,
  - iii. Copies of all documents used to complete an Acid Rain permit application and any other submission under the Acid Rain Program or to demonstrate compliance with the requirements of the Acid Rain Program.
- b. For each affected unit submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR Part 72 subpart I and 40 CFR Part 75 [40 CFR 72.9(f)(2)].
  - c. Notify the District by telephone as soon as possible prior to planned fuel switches from natural gas to fuel oil with the date and time of such planned fuel switch [District Rule 102 §5.0].

**Turbines #2 and #3, NS-057A and NS-057B**

155. For units NS-057A and NS-057B, The Permittee shall perform the following: [EPA PSD permit issued 4/28/77 and revised on 2/23/79 and 12/11/81]

- a. The Permittee shall maintain a log of the nitrogen content of the diesel oil received as fuel for the turbines. Nitrogen content shall be measured using the most current ASTM method, or by methods approved by the District, or as certified by the supplier.
- b. A log shall be maintained which indicates the date and the number of hours of turbine operation for each turbine.
- c. A log shall be maintained which indicates the amount and percent by weight of sulfur for each shipment of turbine fuel oil combusted in the turbines.
- d. The Permittee shall notify the District by telephone as soon as possible prior to planned turbine operation with the date and time of such planned operation.
- e. 30 days prior to turbine testing for nitrogen oxide testing, the Permittee shall furnish to the EPA a notice of planned tests which will allow for the development of an approvable test plan and an observer to be present. A written report of the performance tests conducted on the turbines shall be furnished to the District and EPA.

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

156. The Permittee shall report all occurrences of breakdowns of the equipment listed in Table 1.0 Authorized Emission Devices or Table 1.1 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 §5.0.

157. 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 102 §5.0]*

158. The Permittee shall immediately record 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 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
  - g. Actions taken to prevent reoccurrence of excess emission event.
159. 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 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 7.0 to be kept "Annually".
160. The Permittee shall maintain a log of usage for the Emergency IC Diesel Generators D-8, D-25, 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.

161. 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 7.0 below.

**Table 7.0 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> ) and lb/hr, on a 1 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. SO <sub>x</sub> (ppmvd @15% O <sub>2</sub> ) and lb/hr, on a rolling 3 hour average F. Natural gas fuel consumption (MMBtu HHV, hourly average) G. Diesel fuel consumption during Diesel Mode (MMBtu HHV, hourly average) H. Volumetric proportion of natural gas to diesel pilot injection when operating in Natural Gas Mode
Daily	A. NO <sub>x</sub> (lbs/day, total for all engines) B. CO (lbs/day, total for all engines)

Frequency	Information to be Recorded
	C. ROC (lbs/day, total for all engines) D. SOx (lbs/day, total for all engines) E. PM (lbs/day, total for all engines) F. Diesel Particulate Matter (lbs/day, total for all engines) G. Natural gas fuel consumption (MMBtu HHV, and cubic feet for each engine and total for all engines) H. Diesel pilot fuel consumption (MMBtu HHV, all engines combined) I. Diesel fuel consumption during Diesel Mode (MMBtu HHV, and gallons for each engine and total for all engines) J. Engine load (% load on a 24 hour average for each engine and total for all engines) K. Hours of operation (each engine and total for all engines as a sum of operating minutes)
Monthly	A. Sulfur content of natural gas (gr/100scf, monthly fuel testing) B. Natural gas sulfur content (gr/100scf, 12 month rolling average)
Quarterly (combined total for all engines)	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, and cubic feet) H. Diesel pilot fuel consumption (MMBtu HHV, and gallons) I. Diesel fuel consumption during Diesel Mode (MMBtu HHV, and gallons) J. Sulfur content of natural gas (gr/100scf, 12 month rolling average) K. Hours of operation (for each fuel mode)
Annually (combined total for all engines)	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, and cubic feet) H. Diesel pilot fuel consumption (MMBtu HHV, and gallons) I. Diesel fuel consumption during Diesel Mode (MMBtu HHV, and gallons) J. Sulfur content of natural gas (gr./100scf, annual average) K. Hours of operation (for each fuel mode)

162. 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.

163. The Permittee shall provide notification and record keeping as required pursuant to 40 CFR, Part 60, Subpart A, 60.7.

164. 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 §5.0]*

165. The Permittee shall submit a health risk assessment protocol to the District APCO for review no later than 9 months after the Commissioning Period for the reciprocating engines S-1 through S-10 has concluded. *[District Rule 102 §5.0]*

166. No later than 120 days after the health risk assessment protocol required pursuant to this Section has been approved by the APCO, the Permittee shall submit to the APCO a health risk assessment prepared pursuant to the approved protocol. *[District Rule 102 §5.0]*

167. 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 §5.0]*
- 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.
168. 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 *[District Rule 102 §5.0]*:
- 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**

169. For unit NS-020, the Permittee shall utilize the following methods to determine compliance with the Pollutant and Emission Limitations of this Permit:
- a. **Nitrogen Oxides and Sulfur Dioxide** – EPA reference Method 6, 7E, CARB Method 100, or other EPA approved method. The Permittee shall comply with the requirements specified in 40 CFR Parts 74, 75, and 76.
    - i. The Permittee will install, operate at all times, and maintain a continuous monitoring system for nitrogen oxides, sulfur oxide and a diluent as specified in 40 CFR Part 75.
    - ii. The emissions measurements recorded and reported in accordance with 40 CFR Part 75 shall be used to determine compliance by the unit with applicable Acid Rain emissions limitations and emissions reduction requirements for sulfur dioxide and nitrogen oxides under the Acid Rain Program.
    - iii. General Provisions Condition #24 is satisfied through Fuel Oil sulfur content monitoring using the method and frequency described under 40 CFR 75 Appendix D.
  - b. **Particulate Matter** - CARB Method 5 or other EPA approved method. The Permittee shall be required to have particulate matter from the boiler of permit unit NS-020 tested once during a permit term should the boiler continuously fire Fuel Oil during the permit term in excess of 120 hours. Once this occurs, the Permittee shall have 6 months to complete the testing requirement. *[District Rule 102 §5.0]*

- c. **Visible Emissions** - EPA Reference Method 9 or other EPA approved method. The Permittee shall perform a "Visible Emission Evaluation"(VEE) at least once per quarter while the boiler fires oil should the boiler require oil firing. A CARB certified contractor or the District shall be hired to perform such an evaluation. For all oil firing, the Permittee shall be required to have a VEE performed during the startup of unit NS-020 on fuel oil and thereafter on a weekly schedule. The VEE period shall be a minimum of six (6) minutes unless any one reading is greater than the visible emissions limit, then the observation period shall be a minimum of 60 minutes or until a violation of the emissions limit has been documented, whichever period is shorter. A VEE shall not be required while units NS-020 is fired on natural gas. *[Regulation 1, Rule 102 §5.0]*

170. For unit NS-021, the Permittee shall utilize the following methods to determine compliance with the Pollutant and Emission Limitations of this Permit:

- a. **Nitrogen Oxides and Sulfur Dioxide** – EPA reference Method 6, 7E, CARB Method 100, or other EPA approved method. The Permittee shall comply with the requirements specified in 40 CFR Parts 74, 75, and 76.
  - i. The Permittee will install, operate at all times, and maintain a continuous monitoring system for nitrogen oxides, sulfur oxide and a diluent as specified in 40 CFR Part 75.
  - ii. The emissions measurements recorded and reported in accordance with 40 CFR Part 75 shall be used to determine compliance by the unit with applicable Acid Rain emissions limitations and emissions reduction requirements for sulfur dioxide and nitrogen oxides under the Acid Rain Program.
  - iii. General Provisions Condition #24 is satisfied through Fuel Oil sulfur content monitoring using the method and frequency described under 40 CFR 75 Appendix D.
- b. **Particulate Matter** - CARB Method 5 or other EPA approved method. The Permittee shall be required to have particulate matter from the boiler of permit unit NS-021 tested once during a permit term should the boiler continuously fire oil during the permit term in excess of 120 hours. Once this occurs, the Permittee shall have 6 months to complete the testing requirement. *[District Rule 102 §5.0]*
- c. **Visible Emissions** – The Permittee shall operate, at all times, a continuous opacity monitoring system (COMS). *[40 CFR 60.48b(a)]*
  - i. 40 CFR 60, Appendix B, Performance Specification 1 shall be the basis for the operation of the COMS. *[40 CFR 60.49b(b)]*

171. For units NS-057A and NS-057B, the Permittee shall utilize the following methods to determine compliance with the Pollutant and Emission Limitations of this Permit

- a. **Particulate Matter** - CARB Method 5 or other EPA approved method.
  - b. **Visible Emissions** - EPA Reference Method 9 or other EPA approved method. The Permittee shall perform a "Visible Emission Evaluation"(VEE) at least once between startup and shutdown for each turbine as indicated below. The evaluation period shall be a minimum of six (6) minutes unless any one reading is greater than the visible emissions limit, then the observation period shall be a minimum of 60 minutes or until a violation of the emissions limit has been documented, whichever period is shorter. A CARB certified contractor or the District shall be hired to perform such an evaluation.
  - c. **Nitrogen Oxides** - EPA Reference Method 7E, CARB Method 100 or other EPA approved method. The Permittee shall be required to have oxides of nitrogen from each of the gas turbines of permit unit NS-057 tested at least once every two years. Should the results of any test on any turbine show noncompliance, then that turbine shall be tested annually. Once two consecutive annual tests demonstrate compliance, the test frequency shall revert to biennial. Testing shall be performed at the maximum operating capacity (90% to 110%) of the turbines unless EPA approval is granted for testing at less than maximum capacity [EPA PSD permit revisions, 4/20/2000].
  - d. **Sulfur Dioxide** - Oil sulfur content shall be monitored in accordance with Condition 155(c) in order to meet the limitations of Condition #24. ASTM method D 4294 or more current method shall be used to determine the sulfur content for each shipment of oil received.
172. 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.
173. 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]
174. 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.
175. 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.
176. The Permittee shall demonstrate compliance with all the emission limits identified in this Permit prior to the end of 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 201a and 202
- b. Diesel Particulate Matter – CARB Method 5 (front half)
- c. Visible Emissions
  - i. 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 & ASTM D6522-00 [NESHAP ZZZZ]
- h. Oxygen – CARB Method 100 & ASTM D6522-00 [NESHAP ZZZZ]
  - 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

177. 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. For purposes of compliance with this condition, 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. *[District Rule 102 §5.0]*

- 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



- 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 D5453-93
182. The engines shall be tested at various loads (50%, ~~75%~~75%) on a rotating basis, with one-third of the engines to be tested in diesel mode in each year; and 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. The engines shall be tested on a rotating basis with all engines tested at the three different load values at least once every nine years; and that each engine is tested at a different load each rotation. *[District Rule 102 §5.0]*
183. 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 §5.0]*
184. The Permittee shall demonstrate compliance with the hourly, daily, and annual SOx 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 §5.0]*
185. 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 §5.0]*

186. 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.

**LOCAL ENFORCEABLE ONLY, EQUIPMENT SPECIFIC REQUIREMENTS**

**FUEL USAGE**

187. The Emergency IC Diesel Generators D-8, D-23, 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.

**EMISSIONS**

188. 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. [CCR Title 17 §93115]

**OPERATIONAL CONDITIONS**

189. While operating the reciprocating engines S-1 through S-10 in Diesel Mode, the Permittee shall fire the engines for no more than 50 hours per year for each engine for Maintenance and Testing. [CCR Title 17, §93115]

190. The Emergency IC Diesel Generators D-8, D-25, S-11, and S-12 are authorized the following maximum allowable annual hours of operation as listed in Table 8.0 below [17 CCR §93115] :

**Table 8.0 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

### **AMBIENT MONITORING**

191. 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 §5.0]*
192. 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 §5.0]*

### INSIGNIFICANT EMISSIONS UNITS

193. The following systems are considered insignificant emissions units and are not subject to equipment specific requirements. However, these units are required to comply with all applicable Federal and Local Enforceable Only general requirements and will be included in the facility emission inventory:

Exempt Equipment	Equipment Description	Basis for the Exemption
Air Conditioning Units	Comfort Air Conditioners	District Rule 102 §4.13
Diesel Fire Pump Fuel Tank		District Rule 102 §4.13
Emergency Propane Generator		District Rule 102 §4.13
Emergency Propane Gen. Storage Tank		District Rule 102 §4.13
MEPP South Day Tank (Dist. Oil)		District Rule 102 §4.13
MEPP North Day Tank (Dist. Oil)		District Rule 102 §4.13
Fuel Dispensing Facility		District Rule 102 §4.13
Fuel Oil Service Tank #1		District Rule 102 §4.13
Fuel Oil Service Tank #2		District Rule 102 §4.13
Fuel Oil Storage Tank #1		District Rule 102 §4.13
Fuel Oil Storage Tank #2		District Rule 102 §4.13
Gasoline Storage		District Rule 102 §4.13
Distilled Oil Storage Tank		District Rule 102 §4.13
Lube Oil Tanks		District Rule 102 §4.13
Oil/Water Separator		District Rule 102 §4.13
Portable Sandblasting Unit		District Rule 102 §4.13
Sandblasting and Print Facility		District Rule 102 §4.13
Shop Cold Solvent Cleaner		District Rule 102 §4.13
Unconfined Solvent and Paint Use	General Operations (facility wide)	District Rule 102 §4.13
Welding Shop		District Rule 102 §4.13
Wipe Cleaning Operations	General Operations (facility wide)	District Rule 102 §4.13
Any equipment or activity not specifically identified by this Permit		District Rule 102 §4.13


## AUTHORIZING SIGNATURE

**NORTH COAST UNIFIED  
AIR QUALITY  
MANAGEMENT DISTRICT**

2300 MYRTLE AVENUE  
EUREKA, CALIFORNIA 95501

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

DATE: Feb 8, 2010

BY: 

**RICHARD L. MARTIN JR.  
AIR POLLUTION CONTROL OFFICER**



Permit Seal