

PROPOSED

Amended Date

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
(xxxx xxxx xxxx xxxx xxxx)

12-xxxE CAB
File No. 0087-05

Mr. Jeff Walsh
President and General Manager
AES Hawaii, Inc.
91-086 Kaomi Loop
Kapolei, Hawaii 96707-1883

Dear Mr. Walsh:

**Subject: Amendment of Covered Source Permit (CSP) No. 0087-02-C
Significant Modification Application No. 0087-05
CFB Boilers
AES Hawaii, Inc.
203 MW Coal-Fired Cogeneration Plant
Located at: 91-086 Kaomi Loop, Campbell Industrial Park, Kapolei, Oahu
Date of Expiration: July 19, 2014**

In accordance with Hawaii Administrative Rules, Chapter 11-60.1, and pursuant to your application for a Significant Modification dated July 15, 2011 and additional information dated November 4, 2011 and January 24, 2012, the Department of Health hereby amends Covered Source Permit (CSP) No. 0087-02-C issued to AES Hawaii, Inc. The amendment allows the firing of wood in the boilers.

The enclosed Attachment IIA supersedes in its entirety the corresponding Attachment IIA issued with CSP No. 0087-02-C on July 20, 2009. In addition, the enclosed **Monitoring Report Form: Wood Fuel**, is enclosed for your use and submittal as required. All other permit conditions issued with CSP No. 0087-02-C shall not be affected and shall remain valid. A receipt for the application filing fee of \$3,000.00 is enclosed.

If there are any questions regarding these matters, please contact Mr. Darin Lum of the Clean Air Branch at (808) 586-4200.

Sincerely,

STUART YAMADA, P.E., CHIEF
Environmental Management Division

DL:smk
Enclosures

c: CAB Monitoring Section

**ATTACHMENT IIA: SPECIAL CONDITIONS
COVERED SOURCE PERMIT NO. 0087-02-C
CFB BOILERS**

Amended Date:

Expiration Date: July 19, 2014

In addition to the standard conditions of the Covered Source Permit, the following special conditions shall apply to the permitted facility:

Section A. Equipment Description

1. Attachment IIA of the Covered Source Permit encompasses the following equipment and associated appurtenances:
 - a. CFB Boilers A and B

Two (2) Alstrom Pyropower Corp. circulating fluidized bed (CFB) steam boilers with a total maximum design heat input of 2,150 MMBtu/hr.
 - b. Air Pollution Control Equipment for CFB Boilers:
 - 1) Limestone injection system;
 - 2) Selective non-catalytic reduction (SNCR) with ammonia/urea injection (Thermal DeNO_x); and
 - 3) Two (2) Asea Brown Boveri (ABB) baghouses (Flakt Model 2).
 - c. 25,000 gallon pressurized anhydrous ammonia storage tank.

(Auth.: HAR §11-60.1-3)
2. An identification tag or nameplate shall be displayed on the equipment listed above which identifies the model no., serial no., and manufacturer. The identification tag or nameplate shall be attached to the equipment in a conspicuous location.

(Auth.: HAR §11-60.1-5)

Section B. Applicable Federal Regulations

1. This equipment is subject to the provisions of the following sections:
 - a. 40 CFR Part 60, Standards of Performance for New Stationary Sources:
 - 1) Subpart A - General Provisions; and
 - 2) Subpart Da - Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978.
 - b. 40 CFR Part 52.21, Prevention of Significant Deterioration of Air Quality.
 - c. 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants for Source Categories:
 - 1) Subpart A – General Provisions; and

- 2) Subpart UUUUU – National Emission Standards for Hazardous Air Pollutants from Coal and Oil Fired Electric Utility Steam Generating Units.

The permittee shall comply with all applicable requirements of these standards, including all emission limits, notification, testing, monitoring and reporting requirements. The major requirements of these standards are detailed in the special conditions of this permit.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR 60.1, 40 CFR 60.40a, 40 CFR 52.21, 40 CFR 63.1, 40 CFR 63.9980)¹

2. The storage and use of ammonia in this facility is subject to the provisions of 40 CFR Part 68, Chemical Accident Prevention Provisions. The permittee shall comply with all applicable requirements, including submittal of:
 - a. A compliance schedule for meeting the requirements of 40 CFR Part 68 by the date provided in 40 CFR 68.10(a); or
 - b. As part of the compliance certification submitted pursuant to Attachment I, Standard Condition No. 28, a certification statement that the facility is in compliance with all requirements of 40 CFR 68, including the registration and submission of the Risk Management Plan.

(Auth.: HAR §11-60.1-3, §11-60.1-90, 40 CFR §68)¹

Section C. Operational and Emission Limitations

1. The CFB boilers (boilers) shall be fired primarily on coal with a maximum sulfur content not to exceed 1.5 percent by weight. During hot or cold startups, the boilers may be fired on fuel oil no. 2 with a maximum sulfur content not to exceed 0.5 percent by weight.

(Auth.: HAR §11-60.1-5, §11-60.1-38, §11-60.1-90)

2. Wood Fuel
 - a. The boilers may also be fired on a mixture of coal and wood fuel such that the combined feed rate does not exceed 233,000 lb/hr (116.5 tons/hr).
 - b. The maximum amount of wood fuel fired into the boilers shall not exceed 20 tons/hr and 175,200 tons per any rolling twelve-month (12-month) period.
 - c. The maximum heat input from wood fuel firing shall not exceed 215 MMBtu/hr and 1,883,400 MMBtu per any rolling twelve-month (12-month) period.
 - d. All wood fuel, including wood processed into pellets which may utilize a *polyethylene binder*, fired by the boilers shall be untreated and uncontaminated by paint, glues, preservatives, oils, added chemicals, or similar foreign substances. Use of construction demolition debris of any type as wood fuel is explicitly prohibited.

- e. Wood fuel shall consist of chips or pellets of uncontaminated whole tree wood, including stumps, branches, bark, chips, and sawdust.

(Auth.: HAR §11-60.1-5, §11-60.1-90)

3. Tire Derived Fuel (TDF)

- a. The boilers may also be fired on a mixture of coal and TDF such that the combined feed rate does not exceed 215,000 lb/hr (107.5 tons/hr).
- b. The boilers may also be fired on a mixture of coal, TDF, and wood such that the combined feed rate does not exceed 233,000 lb/hr (116.5 tons/hr).
- c. The maximum amount of TDF fired into the boilers shall not exceed 7.5 tons/hr.

(Auth.: HAR §11-60.1-5, §11-60.1-90)

4. Spent Activated Carbon

The boilers may also be fired on spent activated carbon. The spent activated carbon shall be obtained only from the Board of Water Supply in Honolulu, Tesoro Refinery Hawaii, and Kalaeloa Partners. Spent activated carbon may be obtained from other sources, provided a written notification identifying the new source is submitted to the Department of Health, and approved, prior to the acceptance of the spent activated carbon.

(Auth.: HAR §11-60.1-3, §11-60.1-90)

5. Specification (Spec) Used Oil

- a. The boilers may also be fired on spec used oil such that the total usage does not exceed 3,000,000 gallons in any rolling twelve-month (12-month) period.
- b. The permit conditions prescribed herein may at any time be revised by the Department of Health to reflect federal or state promulgated rules on used oil.
- c. This permit shall not release the permittee from compliance with all applicable state and federal rules and regulations on the handling, transporting, storing, and burning of used oil.
- d. The used oil shall be obtained only from Unitek Solvent Services, Inc., Phillips Services, and sources within AES Hawaii, Inc. Used oil may be obtained from other sources, provided a written notification identifying the new source is submitted to the Department of Health, and approved, prior to the acceptance of the used oil.
- e. Samples of the used oil generated from the facility shall be taken from the holding tanks or drums, and composited and analyzed for compliance with the limits in Attachment IIA, Special Condition No. C.5.i prior to being emptied into the reclaim tank and burned. These samples shall be taken in such a manner that the composite sample is representative of all of the used oil generated by the facility for that period of time. The composite sample shall represent no more than 5,000 gallons of used oil or all of the used oil collected in any three (3) month period, whichever is less.

- f. Each composite sample shall be submitted in a timely manner to a qualified laboratory and an analysis obtained for the constituents/properties for which limits are given in Attachment IIA, Special Condition No. C.5.i.
- g. Analysis reports shall be obtained (for the twice monthly testing) for the constituents/properties for which limits are given in Attachment IIA, Special Condition No. C.5.i for all deliveries of spec used oil.
- h. This permit does not authorize the permittee to burn hazardous waste. The permittee shall not burn the used oil if declared or determined to be a hazardous waste.
- i. The following constituents/properties of the spec used oil shall not exceed the specified units listed below:

<u>Constituent/Property</u>	<u>Allowable Limit</u>
Arsenic	5 ppm maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Total Halogens	1000 ppm maximum
Sulfur	0.5% maximum by weight
Flash Point	100°F minimum
Polychlorinated Biphenyls (PCB)	< 2 ppm

- j. Should the results of any used oil analyses deem the sample to be hazardous, the contaminated containers shall be identified and isolated from the non-contaminated containers and properly disposed. Fuel blending to meet the constituents/properties limits given in Attachment IIA, Special Condition No. C.5.i is allowable only for spec used oil that were not deemed hazardous.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, §11-60.1-140, 40 CFR §279.11)

6. Air Pollution Control Equipment

The permittee shall continuously operate and maintain the following air pollution controls to meet the emissions limits as specified in Attachment IIA, Special Condition No. C.10. The following controls shall be fully operational upon startup and thereafter:

- a. A limestone injection system shall be used to meet the sulfur dioxide and lead emission limits (3-hour average) as shown in Attachment IIA, Special Condition No. C.10; and a minimum sulfur dioxide removal efficiency of 75%.
- b. A SNCR system shall be used to meet the nitrogen oxide emission limit (three-hour (3-hour) average) as shown in Attachment IIA, Special Condition No. C.10.
- c. Baghouses shall be used to meet the particulate matter and lead emission limits (three-hour (3-hour) average) as shown in Attachment IIA, Special Condition No. C.10.
 - 1) The pressure drop across the baghouses shall be maintained at 1" to 9" H₂O.
 - 2) The permittee shall follow a regular maintenance schedule to ensure the following items of the baghouses are operating properly:

- a) The filter bags are checked for any tears, holes, abrasions and scuffs; and replaced as needed;
 - b) The hoppers are discharged in a timely manner to prevent excessive particulate buildup which could cause compaction, overflow or plugging;
 - c) The cleaning systems are maintained and operated at sufficient intervals to minimize particulate buildup or caking on the filter bags; and
 - d) Other miscellaneous items/equipment essential for the effective operation of the baghouses are maintained.
- 3) The baghouses shall be operated at all times during boiler operations.
- d. The equipment listed in **Section A** of this attachment shall be properly maintained and kept in good operating condition at all times with scheduled inspections and maintenance as recommended by the manufacturer or as needed to meet the emission limits as shown in Attachment IIA, Special Condition No. C.10.

(Auth.: HAR §11-60.1-3, §11-60.1-5, HAR §11-60.1-38, §11-60.1-90, §11-60.1-161; 40 CFR 60.42a, 40 CFR 60.43a, 40 CFR 68)¹

7. Ammonia Storage Tank

The 25,000 gallon anhydrous ammonia storage tank associated with the Thermal DeNO_x system shall be pressurized and equipped with an over pressure detection system. The filling of ammonia into the storage tank shall be done under a closed system where the displaced vapors from the storage tank are routed back to the delivery vessel.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90, §11-60.1-161; 40 CFR 68)¹

8. Fugitive Particulate Emissions

- a. The permittee shall take measures to control fugitive dust (e.g., wet suppression, enclosures, etc.) at all material transfer points, stockpiles, and throughout the workyard. The Department of Health may at any time require the permittee to further abate fugitive dust emissions if an inspection indicates poor or insufficient control.
- b. The permittee shall not cause or permit fugitive dust to become airborne without taking reasonable precautions and shall not cause or permit the discharge of visible emissions or fugitive dust beyond the lot line of the property on which the emissions originate.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-33, §11-60.1-90)

9. Opacity of Stack Emissions

The permittee shall not discharge or cause the discharge into the atmosphere emissions from the boilers' stack exhibiting an opacity of twenty (20) percent or greater (six-minute (6-minute) average), except for one six (6) minute period per hour of not more than twenty-seven (27) percent opacity.

(Auth.: HAR §11-60.1-3, §11-60.1-32, §11-60.1-90, 40 CFR 60.42a)¹

10. Maximum Emission Limits

The permittee shall not discharge or cause the discharge into the atmosphere from the stack of the boilers, air pollutant emissions in excess of the following specified limits except during startup, shutdown, malfunction, and emergency conditions (as defined in 40 CFR §60.41a):

Compound	Maximum Emission Limits ¹			
	lb/hr	lb/MMBtu	ppmvd @ 15%O ₂	gr/dscf @ 12% CO ₂ , dry
SO ₂	645.0	1.2	48	--
NO _x baseload ²	236.5	0.5	25	--
NO _x low load ^{2,3}	236.5	0.5	59	--
CO	408.4	--	70	--
VOC ⁴	32.2	--	3.5	--
Lead (Pb)	5.7	--	--	1.2E-3
PM/PM ₁₀ ⁵	32.2	0.03	--	7.0E-3
Fluorides	0.2	9.3E-5	--	--
Mercury	0.17	8.1E-5	--	--
Beryllium	0.067	3.1E-5	--	--
Sulfuric Acid Mist	4.10	1.9E-3	--	--
Hydrogen Chloride (HCl)	4.30	0.002		

¹Three-hour (3-hour) average with standard conditions assumed to be 68°F and 29.92 inches Hg. Stack concentrations assumed to be 5% H₂O, 6.5% O₂ and 12% CO₂. Stack temperature at outlet is 265°F and stack pressure at outlet is atmospheric (29.92 inches Hg).

²Molecular weight of NO_x taken to be that of NO₂ (46).

³Low load is an individual boiler heat input of less than 450 mmBtu/hr.

⁴Molecular weight of VOC taken to be that of propane (44).

⁵PM₁₀ emission rate assumed to be 100% of the total particulate matter (TSP) emission rate.

(Auth.: HAR §11-60.1-3, HAR §11-60.1-5, HAR §11-60.1-38, §11-60.1-90, §11-60.1-161; 40 CFR 60.42a, 40 CFR 60.43a, 40 CFR 60.44a)¹

Section D. Monitoring and Recordkeeping Requirements

1. Fuel Monitoring and Recordkeeping

- a. The sulfur content of the coal fired in the boilers shall be tested in accordance with the most current American Society for Testing and Materials (ASTM) methods. The sulfur content of the coal shall be verified by both of the following methods:
- 1) A representative sample of the coal used by the boilers shall be analyzed for its sulfur content by weight **at least once a month**; and
 - 2) A certificate of analysis on the sulfur content of the coal shall be obtained from the respective suppliers **upon delivery of shipments**.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90)

- b. The permittee shall operate and maintain individual fuel measurement systems for the continuous measurement and recording of the amount of coal and TDF being fired in the boilers.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90)

- c. The permittee shall operate and maintain a non-resetting flow meter for the continuous measurement and recording of the amount of spec used oil being fired in the boilers. Monthly records shall be kept of the beginning meter readings and the total fuel usage. Monthly fuel summaries shall include the monthly total fuel usage and the total fuel used based on a twelve-month (12-month) rolling basis.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90)

- d. Fuel delivery receipts shall be maintained, showing the supplier, fuel type, sulfur content (percent by weight), date of delivery, and amount (in gallons) of the fuel oil no. 2 delivered to the facility.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90)

2. Wood Fuel

a. Wood Feed Rate

The permittee shall install, operate and maintain a non-resetting weigh scale for the continuous and permanent recording of the total amount of wood fuel fed to the boilers, in pounds. All wood fuel fed to the boilers shall be recorded by the weigh scale monitoring system.

- 1) The following information shall be recorded on a daily basis:
 - a) Date of the meter reading;
 - b) Beginning meter reading for the day;

- c) Ending meter reading for the day; and
 - d) Total amount of wood fed to the boilers, in pounds, for the day.
- 2) The following information shall be recorded on a monthly basis:
- a) Total amount of wood fed to the boilers, in pounds, for each month; and
 - b) Total amount of wood fed to the boilers, in pounds, on a rolling twelve-month (12-month) basis.
- 3) The weigh scale shall be calibrated on a monthly basis or more frequently as recommended by the manufacturer. Each calibration of the weigh scale shall be recorded on the Inspection, Maintenance, and Repair Log of Attachment IIA, Special Condition No. D.4. Upon written request and justification, the Department of Health may approve a less frequent calibration schedule if it can be demonstrated that the weigh scale, due to minimum variations, need not be calibrated on a monthly basis. The calibration schedule for the weigh scale shall be no less frequent than on a monthly basis for the first year of operation or as recommended by the manufacturer.
- 4) The installation of any new non-resetting meters or the replacement of any existing non-resetting meters shall be designed to accommodate a minimum of five (5) years of equipment operation, considering any operational limitations, before the meter returns to a zero reading.

b. Wood Heat Input

Total wood heat input to the boilers shall be recorded on a monthly and rolling twelve-month (12-month) basis. The total monthly wood heat input to the boiler shall be determined by multiplying the total pounds of wood fed to the boiler for each month from Attachment IIA, Special Condition No. D.2.a.2)a) by the wood's higher heating value of Attachment IIA, Special Condition No. D.2.c.1) for the month.

c. Wood Sampling and Analysis

- 1) On a **monthly basis**, the wood shall be sampled and analyzed in accordance with the wood sampling protocol of Attachment IIA, Special Condition No. E.6.a, to determine the higher heating value of the fuel. Samples shall be collected for analysis at least once per calendar month. Samples shall be collected at least **twenty (20) days** from the last sample collected or less as approved by the Department of Health.
- 2) On a **quarterly basis**, the wood shall be sampled and analyzed in accordance with the wood sampling protocol of Attachment IIA, Special Condition No. E.6.a, to determine the proximate and ultimate analysis, and the chlorine content of the fuel. Samples shall be collected for analysis at least once per calendar quarter. Samples shall be collected at least **sixty (60) days** from the last sample collected or less as approved by the Department of Health. Upon written request and justification, the Department of Health may approve a less frequent sampling and analysis schedule if it can be demonstrated that there are minimum variations in the wood fuel characteristics. The sampling and analysis schedule shall be no less frequent than on a quarterly basis for the first year of operations.

d. Vendors or Sources of Wood Fuel

Records shall be maintained on vendors or sources furnishing wood fuel for use in the boilers. Records shall include:

- 1) Date that wood fuel for the boilers is delivered to the facility;
- 2) Name of the vendor or source;
- 3) Description of the wood fuel accepted for use in the boilers (the description shall include tree species and tree section such as bark, leaves, branches, trunk, etc.); and
- 4) Amount of wood fuel (pounds or tons).

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90)

3. Baghouses

The permittee shall operate and maintain pressure drop meters on each baghouse for continuous reading during operation. The permittee shall monitor these meters at least once daily during operation.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90)

4. Inspection, Maintenance, and Repair Log

The permittee shall maintain records on inspections, maintenance, and any repair work conducted on the equipment listed in **Section A** of this attachment. At a minimum, these records shall include: the date of the inspection; name and title of the inspector; a short description of the action and/or any such repair work; and a description of the part(s) inspected or repaired.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

5. Continuous Emission Monitoring Systems (CEMS)

The permittee shall operate, maintain, and calibrate a CEMS at the boilers' exhaust streams to measure opacity, NO_x (as NO₂), SO₂, and CO₂ or O₂ concentrations in the flue gas as follows:

- a. The CEMS shall be operated and data recorded during all periods of operation including periods of startup, shutdown, malfunction, or emergency conditions, except for CEMS breakdowns, repairs, calibration checks, and zero and span adjustments.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90, §11-60.1-161, 40 CFR §60.47a(e))¹

- b. Emissions data shall be obtained for at least eighteen (18) hours in at least twenty-two (22) out of thirty (30) successive boiler operating days. At least two (2) data points must be used to calculate the one-hour (1-hour) averages. If this minimum data requirement cannot be met with a CEMS, the permittee shall supplement emission data with other monitoring systems as approved by the DOH or the following:

- 1) For SO₂, EPA Reference Method 6, 6A, 6B, or 6C shall be used as specified in 40 CFR §60.47a(h) and (j);
- 2) For NO_x, EPA Reference Method 7, 7A, 7C, 7D, or 7E shall be used as specified in 40 CFR §60.47a(h) and (j);
- 3) For O₂ or CO₂, EPA Reference Method 3, 3A, or 3B shall be used as specified in 40 CFR §60.47a(h) and (j); and
- 4) To compute each one-hour (1-hour) average concentration in lb/MMBtu, EPA Reference Method 19 shall be used.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90, §11-60.1-161, 40 CFR §60.47a(f), (g) and (h))¹

c. During each performance evaluation and calibration check for the CEMS, the following methods shall be used:

- 1) For SO₂, EPA Reference Method 6, 6A, 6B, or 6C shall be used as specified in 40 CFR §60.47a(j);
- 2) For NO_x, EPA Reference Method 7, 7A, 7C, 7D or 7E shall be used as specified in 40 CFR §60.47a(j); and
- 3) For O₂ or CO₂, EPA Reference Method 3, 3A, or 3B shall be used as specified in 40 CFR §60.47a(j).

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90, §11-60.1-161, 40 CFR §60.47a(i) and (j))¹

d. The one-hour (1-hour) averages for SO₂ and NO_x shall be expressed in pounds per hour (lb/hr) and pounds per million Btu (lb/MMBtu). All six-minute (6-minute) average opacity readings shall be expressed in percent. Sulfur reduction shall be recorded in percent efficiency.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90, §11-60.1-161, 40 CFR §60.47a)¹

e. The procedures under 40 CFR §60.13 shall be followed for installation, evaluation, and operation of the CEMS.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161, 40 CFR §60.13, 40 CFR §60.47a)¹

f. Quarterly accuracy audits and daily calibration drift tests shall be performed in accordance with 40 CFR Part 60, Appendix F. Successive quarterly audits shall occur no closer than two (2) months. RATA must be conducted at least once every four (4) calendar quarters.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161, 40 CFR §60.13, 40 CFR §60.47a)¹

g. The permittee shall maintain records of all measurements and monitoring data, including the CEMS performance evaluations; calibrations checks; and adjustments and maintenance performed on the system or devices and all other information required to be recorded by 40 CFR §60.13 in a permanent form suitable for inspection.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161, 40 CFR §60.13, 40 CFR §60.47a)¹

6. Records

All records, including support information, shall be true, accurate and maintained for at least **five (5) years** following the date of the monitoring sample, measurement, test, report, or application. Support information includes all maintenance, inspection, and repair records, and copies of all reports required by this permit. These records shall be in a permanent form suitable for inspection and made available to the Department of Health or their representative upon request.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90, SIP §11-60-15)²

Section E. Notification and Reporting Requirements

1. Notification and reporting pertaining to the following events shall be done in accordance with Attachment I, Standard Condition Nos. 16, 17, and 24 respectively.

- a. *Intent to shut down air pollution control equipment for necessary scheduled maintenance;*
- b. *Emissions of air pollutants in violation of HAR, Chapter 11-60.1 or this permit (excluding technology-based emission exceedences due to emergencies); and*
- c. *Permanent discontinuance of construction, modification, relocation or operation of the facility covered by this permit.*

(Auth.: HAR §11-60.1-8, §11-60.1-15, §11-60.1-16, §11-60.1-90; SIP §11-60-10, §11-60-16)²

2. Deviations

The permittee shall report (in writing) **within five (5) working days** any deviations from permit requirements, including those attributable to upset conditions, the probable cause of such deviations and any corrective actions or preventive measures taken. Corrective actions may include a requirement for additional stack testing or more frequent monitoring, or could trigger implementation of a corrective action plan.

(Auth.: HAR §11-60.1-3, §11-60.1-15, §11-60.1-16, §11-60.1-90)

3. Compliance Certification

During the permit term, the permittee shall submit at least **annually** to the Department of Health and U.S. EPA, Region 9, the attached **Compliance Certification Form**, pursuant to HAR §11-60.1-86. The permittee shall indicate whether or not compliance is being met with each term or condition of this permit. The compliance certification shall be submitted **within ninety (90) days after the end of each calendar year**, and shall be signed and dated by a responsible official. The compliance certification shall include at a minimum the following information:

- a. The identification of each term or condition of the permit that is the basis of the certification;
- b. The compliance status;
- c. Whether compliance was continuous or intermittent;

- d. The methods used for determining the compliance status of the source currently and over the reporting period;
- e. Any additional information indicating the source's compliance status with any applicable enhanced monitoring and compliance certification including the requirements of Section 114(a)(3) of the Clean Air Act or any applicable monitoring and analysis provisions of Section 504(b) of the Clean Air Act; and
- f. Any additional information as required by the Department of Health including information to determine compliance.

Upon written request of the permittee, the deadline for submitting the compliance certification may be extended, if the Department of Health determines that reasonable justification exists for the extension.

(Auth.: HAR §11-60.1-4, §11-60.1-86, §11-60.1-90)

4. Semi-Annual Reports

- a. The permittee shall submit summary reports as required by NSPS Subpart Da – 40 CFR §60.49a (submitted by August 1 and February 1 following the first calendar half and second calendar half, respectively) which includes the following:
 - 1) Results of the annual source performance tests and RATAs.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90, §11-60.1-161; 40 CFR §60.49a(a))¹

- 2) SO₂ and NO_x information for each twenty-four hour (24-hour) period
 - a) Calendar date;
 - b) The average SO₂ and NO_x emission rates (lb/MMBtu) for each thirty (30) successive boiler operating days, reasons for non-compliance with the emission standards, and description of corrective actions taken;
 - c) Percent reduction of the potential combustion concentration of SO₂;
 - d) Identification of the boiler operating days for which pollutant or diluent data have not been obtained by an approved method for at least eighteen (18) hours of operation of the facility, justification for not obtaining sufficient data, and description of corrective actions taken;
 - e) Identification of the times when emissions data have been excluded from the calculation of average emission rates because of startup, shutdown, malfunction (NO_x only), emergency conditions (SO₂ only), or other reasons, and justification for excluding data for reasons other than startup, shutdown, malfunction, or emergency conditions;
 - f) Identification of "F" factor used for calculations, method of determination, and type of fuel combusted;
 - g) Identification of the times when hourly averages have been obtained based on manual sampling methods;
 - h) Identification of the times when pollutant concentration exceeded full span of the continuous monitoring system; and

- i) Description of any modifications to the CEMS which would affect the ability of the CEMS to comply with the Performance Specifications 2 or 3.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90, §11-60.1-161; 40 CFR §60.49a(b))¹

- 3) If the minimum quantity of emission data is not obtained for any thirty (30) successive boiler operating days (as required by Attachment IIA, Special Condition No. D.5.b), the following information obtained using the applicable procedures in section 7 of Method 19 for that thirty-day (30-day) period:
 - a) The number of hourly averages available for outlet emission rates (n_o) and inlet emission rates (n_i) as applicable;
 - b) The standard deviation of hourly averages for outlet emission rates (s_o) and inlet emission rates (s_i) as applicable;
 - c) The lower confidence limit for the mean outlet emission rates (E_o^*) and the upper confidence limit for the mean inlet emission rate (E_i^*) as applicable;
 - d) The applicable potential combustion concentration; and
 - e) The ratio of the upper confidence limit for the mean outlet emission rate (E_o^*) and the allowable emission rate (E_{std}) as applicable.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90, §11-60.1-161; 40 CFR §60.49a(c))¹

- 4) If any SO₂ emissions are exceeded during emergency conditions because of control system malfunction, the permittee shall submit a signed statement indicating if emergency conditions existed and requirements under 40 CFR §46a(d) were met during each period and listing the following information;
 - a) Time periods the emergency condition existed;
 - b) Electrical outlet and demand on the utility system;
 - c) Amount of power purchased from interconnected neighboring utility companies during the emergency period;
 - d) Percent reduction in emissions achieved;
 - e) Atmospheric emission rate (lb/MMBtu) of SO₂ discharged; and
 - f) Actions taken to correct control system malfunction.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90, §11-60.1-161; 40 CFR §60.49a(d))¹

- 5) For any periods for which opacity, SO₂, or NO_x emissions data are not available, the permittee shall submit a signed statement indicating if any changes were made in operation of the emission control system during the period of data unavailability. Operations of the control system and boilers during periods of data unavailability are to be compared with operation of the control system and boilers before and following the period of data unavailability.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90, §11-60.1-161; 40 CFR §60.49a(f))¹

- 6) The permittee shall submit a signed statement whether:
- a) The required CEMS calibration, span, and drift checks or other periodic audits have or have not been performed as specified;
 - b) The data used to show compliance was or was not obtained in accordance with approved methods and procedures and is representative of plant performance;
 - c) The minimum data requirements have or have not been met; or the minimum data requirements have not been met for errors that were unavoidable; and
 - d) Compliance with the standards has or has not been achieved during the reporting period.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90, §11-60.1-161; 40 CFR §60.49a(g))¹

- 7) The permittee shall submit all six-minute (6-minute) periods during which the average opacity exceeds the opacity standards in Attachment IIA, Special Condition No. C.9. The information shall include the dates and percent opacity of those periods.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90, §11-60.1-161; 40 CFR §60.49a(h))¹

b. Excess Emissions

The permittee shall submit a written report of all excess emissions to the Department of Health **semi-annually** (submitted by August 1 and February 1 following the first calendar half and second calendar half, respectively) which includes the following:

- 1) The magnitude of excess emissions computed in accordance with 40 CFR §60.13(h), any concurrent data, any conversion factors used, the date and time of commencement and completion of each time period of excess emissions, and corrective actions taken.
- 2) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the boiler(s). The nature and cause of any malfunction (if known) and the corrective action taken or preventive measures adopted, shall also be reported.
- 3) The date and time identifying each period during which the CEMS was inoperative except for zero and span checks. The nature of each system repair or adjustment shall be described.
- 4) The report shall so state if no excess emissions have occurred. Also, the report shall so state if the CEMS operated properly during the period and was not subject to any repairs or adjustments except zero and span checks.
- 5) For purposes of this Covered Source Permit, excess emissions shall be defined as follows:
 - a) Any three-hour (3-hour) period during which the average emissions of NO_x and SO₂, as measured by the continuous monitoring system, exceed the emission limits set forth in Attachment IIA, Special Condition No. C.10.
 - b) Any opacity measurements, as measured by the transmissometer continuous monitoring system exceeding the opacity limits and corresponding averaging times set forth in Attachment IIA, Special Condition No. C.9.

- 6) The enclosed **Excess Emission and Monitoring System Performance Summary Report** shall be used in conjunction to the reporting of excess emissions of NO_x, SO₂, and opacity.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-32, §11-60.1-38, §11-60.1-90, §11-60.1-161; SIP§11-60-15, §11-60-24; 40 CFR 60.47a, 60.48a, 60.49a)^{1, 2}

c. Monitoring Reports

The permittee shall submit **semi-annually**, the attached *Monitoring Report Forms: Fuel Usage/Certification; Spec Used Oil; and Wood Fuel* to the Department of Health. These reports shall be submitted **within sixty (60) days after the end of each semi-annual calendar period** (January 1 to June 30 and July 1 to December 31), and shall be signed and dated by a responsible official.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90)

5. Annual Emissions

- a. As required by *Attachment IV: Annual Emissions Reporting Requirements* and in conjunction with the requirements of *Attachment III: Annual Fee Requirements*, the permittee shall report **annually** the total tons/yr emitted of each regulated air pollutant, including hazardous air pollutants. The reporting of annual emissions is due **within sixty (60) days following the end of each calendar year**. The completion and submittal of *Annual Emissions Report Form: Boilers/Dryers*, shall be used in reporting fuel usage.
- b. Upon the written request of the permittee, the deadline for reporting of annual emissions may be extended, if the Department of Health determines that reasonable justification exists for the extension.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90)

6. Wood Sampling and Analysis

a. Protocol

At least **sixty (60) days** prior to commencement of biomass (wood) combustion in the boilers, the permittee shall submit to the Department of Health for approval, in writing, a wood sampling and analysis protocol for determining the wood's proximate and ultimate analysis, the chlorine content, and higher heating value of the fuel. The protocol shall address in detail the sampling and testing methodology to ensure the samples collected are representative of the wood fired in the boilers during the sampling period. The protocol shall also identify the requirement that the collection of each sample include a recorded description of the wood samples collected (such as the tree species and tree section such as bark, leaves, branches, trunk, etc.). The permittee shall obtain approval for the sampling protocol prior to the commencement of biomass (wood) combustion in the boilers.

Manufacturer's literature on the weigh scale required by Attachment IIA, Special Condition No. D.2.a shall be submitted to the Department of Health along with the wood sampling and analysis protocol. The literature should include information on the accuracy, manufacturer's recommended calibration methods and frequency, and operating details of the weigh scale.

b. Submittal of Wood Sampling and Analysis Results

Results of the wood sampling and analysis shall be submitted to the Department of Health **within sixty (60) days after the end of each semi-annual calendar period** (January 1 to June 30 and July 1 to December 31). The results shall include the sampling collection date, analyzed date, the proximate and ultimate analysis, the chlorine content of the fuel, the higher heating value of the fuel, a description of the wood samples collected and certification that the wood samples were collected and analyzed according to the wood sampling protocol of Attachment IIA, Special Condition No. E.6.a.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90, §11-60.1-173)¹

Section F. Testing Requirements

1. On an annual basis or at other such times as may be specified by the Department of Health, the permittee shall conduct or cause to be conducted source performance tests on the boilers for opacity, NO_x as (NO₂), SO₂, volatile organic compounds (VOC), carbon monoxide (CO), lead (Pb), particulate matter (PM), fluorides (Fl), mercury (Hg), beryllium (Be), and sulfuric acid mist. The following test methods (referenced in Appendix A of 40 CFR, Part 60) or U.S. EPA-approved equivalent methods with prior written approval from the Department of Health shall be used:

- a. Method 9 for opacity;
- b. Methods 1-4 and 19 or 7E for the emissions of NO_x;
- c. Methods 1-4 and 6 or 6C for the emissions of SO₂;
- d. Methods 1-4 and 18, 25, or 25A for the emissions of VOC;
- e. Methods 1-4 and 10 for the emissions of CO;
- f. Methods 1-4 and 12 or 29 for the emissions of Pb;
- g. Methods 1-4 and 5 for the emissions of PM;
- h. Methods 1-4 and 13b for the emissions of Fl;
- i. Methods 1-4 and 101 or 29 for the emissions of Hg;
- j. Methods 1-4 and 103 or 29 for the emissions of Be; and
- k. Methods 1-4 and 8 for the emissions of Sulfuric Acid Mist.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90, §11-60.1-161; SIP§11-60.-15; 40 CFR 60.47a)^{1,2}

2. HCl Emissions

- a. Within **sixty (60) days** after achieving the maximum biomass (wood) firing rate in the boilers, but not later than **one hundred eighty (180) days** after commencement of biomass (wood) combustion in the boilers, and **annually** thereafter, the permittee shall conduct, or

cause to be conducted, performance tests on the boilers to determine the emission rate of HCl for the purpose of determining compliance with the emission limit provided for under Attachment IIA, Special Condition No. C.10. The source test for HCl emissions shall be performed with the boilers firing the maximum allowable biomass rate in combination with the minimum anticipated coal feed rate that would be reasonably anticipated during biomass firing.

- b. The following test methods (referenced in Appendix A of 40 CFR, Part 60) or U.S. EPA-approved equivalent methods with prior written approval from the Department of Health shall be used:

Methods 1-4 and 26 or 26A for the emissions of HCl.

- c. The test report (as required by Attachment IIA, Special Condition No. F.8) for the source performance tests for HCl shall include:

- 1) The operating conditions of the boilers at the time of the test;
- 2) The HCl emission rate in lb/MMBtu and lb/hr;
- 3) The proximate and ultimate analysis, the chlorine content of the fuel, the higher heating value of the fuel, and a description of the wood samples collected for each of the three (3) test runs. The collection of the wood sample and the analysis shall follow the wood sampling protocol of Attachment IIA, Special Condition No. E.6.a to ensure the samples collected during the test are representative of the fuel fired in the boilers at the time of the test; and
- 4) The records or a summary of the records containing all of the information maintained in accordance with Attachment IIA, Special Condition No. D.2.d from the start of boiler operations up until the date of the current performance test.

- d. The permittee shall conduct a performance test as specified in Attachment IIA, Special Conditions Nos. F.2.a to F.2.c within **ninety (90) days** from the implementation of operational or physical modifications that have the potential to increase emissions of HCl above that of the prior performance test.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90)

3. Note that Method 1 cannot be used under the following conditions:

- a. Cyclonic or swirling gas flow at the sampling location;
- b. Stack or duct with a diameter less than twelve (12) inches or a cross-sectional area less than one hundred thirteen (113) square inches; or
- c. Sampling location less than two (2) stack or duct diameters downstream or less than a half diameter upstream from a flow disturbance.

(Auth.: HAR §11-60.1-5, §11-60.1-11, §11-60.1-90; 40 CFR 60, App. A, Method 1)¹

4. Each source performance test shall consist of three (3) separate runs using the applicable test method. For the purpose of determining compliance with the applicable regulation, the arithmetic mean of the results from the three (3) runs shall apply.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, SIP§11-60.-15; 40 CFR §60.8)^{1,2}

5. The source performance tests shall be conducted at the maximum expected operating capacity of the boilers.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90)

6. The permittee, at its own expense, shall be responsible for installing, providing and maintaining the necessary ports in stacks or ducts and such other safe and proper sampling and testing facilities as may be necessary for the determination of the air pollutant emissions. The Department of Health may monitor any of the required source performance tests.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90, SIP§11-60.-15)²

7. **At least thirty (30) calendar days prior to performing a source performance test**, the permittee shall submit a written source performance test plan to the Department of Health that describes the test date(s), duration, locations, test methods, source operation, fuel consumption, and other parameters that may affect test results. Such a plan shall conform to U.S. EPA guidelines including quality assurance procedures. A source performance test plan or quality assurance plan that does not have the approval of the Department of Health may be grounds to invalidate any test and require a retest.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90, SIP§11-60.-15)²

8. **Within sixty (60) days after completion of the source performance test**, the permittee shall submit to the Department of Health and U.S. EPA Regional Administrator, the test report which shall include the operating conditions of the equipment at the time of the test, the analysis of the fuel, the summarized test results, comparative results with the permit emission limits, and other pertinent field and laboratory data.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90, §11-60.1-161, 40 CFR §60.48a, §60.49a, SIP§11-60.-15)²

9. Any deviations from these conditions, test methods, or procedures may be cause for rejection of the test results unless such deviations are approved by the Department of Health before the tests.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

10. Upon written request and justification by the permittee, the Department of Health may waive the requirement for a specific annual source performance test. The waiver request is to be submitted prior to the required test and must include documentation justifying such action.

Documentation should include, but is not limited to, the results of the prior tests indicating compliance by a wide margin, documentation of continuing compliance, and further that operations of the source have not changed since the previous source performance test.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

Section G. Agency Notification

Any document (including reports) required to be submitted by this Covered Source Permit shall be in accordance with Attachment I, Standard Condition No. 28.

(Auth.: HAR §11-60.1-4, §11-60.1-90)

¹The citations to the Code of Federal Regulations (CFR) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the CFR. Due to the integration of the preconstruction and operating permit requirements, permit conditions may incorporate more stringent requirements than those set forth in the CFR.

²The citations to the State Implementation Plan (SIP) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the SIP.

**MONITORING REPORT FORM
WOOD FUEL
COVERED SOURCE PERMIT NO. 0087-02-C
(PAGE 1 OF 2)**

Amended Date: _____

Expiration Date: July 19, 2014

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the nature and amounts of emissions semiannually.
(Make Copies for Future Use)

For Period: _____ Date: _____

Facility Name: _____

Equipment Description: _____

Equipment Capacity/Rating (specify units): _____
(Units such as Horsepower, kilowatt, tons/hour, etc.)

Serial/ID No.: _____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Responsible Official (PRINT): _____

TITLE: _____

Responsible Official (Signature): _____

MONTH	WOOD FEED RATE, MONTHLY BASIS (TONS)	WOOD FEED RATE, ROLLING 12-MONTH BASIS (TONS)	WOOD HEAT INPUT, MONTHLY BASIS (MMBTU)	WOOD HEAT INPUT, ROLLING 12-MONTH BASIS (MMBTU)
January				
February				
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				

