Florida Department of Environmental Protection

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PERMITTEE

U.S. EcoGen Polk, LLC
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Jupiter, Florida 33477

Authorized Representative:
Mr. William F. Quinn, P.E., President

Air Permit No. 1050444-001-AC
Expires: June 30, 2017
Woody Biomass Power Plant

Facility ID No. 1050444
63 Megawatt Power Plant

PROJECT

This is the final air construction permit, which authorizes construction of a nominal 63 megawatt (MW) power plant fueled by clean woody biomass. The facility is an electric power plant categorized under Standard Industrial Classification No. 4911. The new plant will be located in the city of Fort Meade, in Polk County, Florida. The UTM coordinates are Zone 17; 418.721 kilometers (km) East and 3,073.665 km North.

This final permit is organized into the following sections: Section 1 (General Information); Section 2 (Administrative Requirements); Section 3 (Emissions Unit Specific Conditions); Section 4 (Appendices). Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix CF of Section 4 of this permit. As noted in the Final Determination provided with this final permit, only minor changes and clarifications were made to the draft permit.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and is not subject to the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Upon issuance of this final permit, any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida
Division of Air Resource Management
Office of Permitting and Compliance
(Electronic Signature)

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CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Permit package (including the Final Determination and Final Permit with Appendices) was sent by electronic mail, or a link to these documents made available electronically on a publicly accessible server, with received receipt requested before the close of business on the date indicated below to the following persons.

William F. Quinn, U.S. EcoGen Polk, LLC: bill.quinn@usecogen.com
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Clerk Stamp
FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.
(Electronic Signature)

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PROPOSED PROJECT

The project involves the construction of a nominal 63 MW electric power plant by U.S. EcoGen Polk, LLC (US EcoGen) utilizing a bubbling fluidized bed (BFB) boiler fueled primarily by clean woody biomass. The BFB boiler will provide steam to a steam turbine electrical generator (STEG). The new plant will be will be located in Polk County, Florida on a 1,163-acre parcel in the City of Fort Meade off of U.S. Highway 17.

The primary fuel for the proposed BFB biomass boiler will be clean woody biomass and eucalyptus tree chips, with natural gas used only for boiler startup, shutdown and bed stabilization.

The project will incorporate the following pollution control equipment and measures:

- Efficient combustion of woody biomass in the BFB boiler through good combustion practices (GCP) to minimize formation of particulate matter (PM), PM smaller than 10 micrometers (µm) (PM_{10}), PM smaller than 2.5 µm ($PM_{2.5}$), nitrogen oxides (NO_X), carbon monoxide (CO) and volatile organic compounds (VOC);
- Use of clean woody biomass to minimize sulfur dioxide (SO_2) and hazardous air pollutant (HAP) formation, including hydrogen chloride (HCl);
- Ammonia (NH_3) injection into selective catalytic reduction (SCR) reactor to destroy NO_X;
- Acid gas control system to control SO_2 and HCl emissions from the BFB boiler;
- A fabric filter baghouse to further control PM/PM_{10}/$PM_{2.5}$ emissions from the BFB boiler;
- Reasonable precautions and best management practices through implementation of a Best Management practices (BMP) to minimize emissions from biomass handling, storage and processing and ash (bottom and fly) handling, storage and shipment; and
- The use of clean fuels and GCP in emergency equipment to minimize emissions.

The project will incorporate the following emission monitoring systems:

- Continuous emission monitoring systems (CEMS) for CO, SO_2 and NO_X; and
- A continuous opacity monitoring system (COMS) for visible emissions (VE).

This project will consist of the following emissions units (EU).

Facility ID No. 1050444

EU ID No.	Emission Unit Description
001	Fuel receiving, handling, storage and processing
002	Power island
003	Ash handling, storage and shipment
004	One emergency diesel generator with a maximum design rating of 670 horsepower (hp), 500 kilowatts (kW)
005	One emergency diesel firewater pump with a maximum design rating of 200 hp (150 kW)

Facility Regulatory Classification

- The facility is not a major source of hazardous air pollutants (HAP).
- The facility operates a unit subject to the Acid Rain provisions of the Clean Air Act (CAA).

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- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is not a major stationary source in accordance with Rule 62-212.400(PSD), F.A.C.
- The facility is subject to the provisions of the Clean Air Interstate Rule (CAIR), including applicable portions of Chapters 62-204, 62-210 and 62-296, F.A.C.
- The facility is subject to Chapter 62-204-800, F.A.C for New Source Performance Standards (NSPS) under Section 111 of the Clean Air Act (CAA) and National Emissions Standards for Hazardous Air Pollutants (NESHAP) under Section 112 of the CAA.

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1. Permitting Authority: The Permitting Authority for this project is the Office of Permitting and Compliance in the Division of Air Resource Management of the Department of Environmental Protection (Department). The Office of Permitting and Compliance mailing address is 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400. All documents related to applications for permits shall be submitted to the Air Resource Section of the Department's Southwest District Office at: 13051 N. Telecom Parkway, Temple Terrace, Florida 33637-0926.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Air Resource Section of the Department's Southwest District Office at: 13051 N. Telecom Parkway, Temple Terrace, Florida 33637-0926

3. Appendices: The following Appendices are attached as a part of this permit and the permittee must comply with the requirement of the appendices:

Appendix BMP	Best Management Practices Plan;
Appendix CC	Common Conditions;
Appendix CEMS	Continuous Emissions Monitoring System (CEMS) Requirements;
Appendix CF	Citation Formats and Glossary of Common Terms;
Appendix CTR	Common Testing Requirements;
Appendix Db	NSPS, 40 CFR 60, Subpart Db – Standards of Performance Small Industrial-Commercial-Institutional Steam Generating Units;
Appendix F	40 CFR 75, Appendix F, Section 5 - Measurement of Boiler Heat Input Rate;
Appendix GC	General Conditions;
Appendix GP	Identification of General Provisions - NSPS 40 CFR 60, Subpart A and NESHAP 40 CFR 63, Subpart A;
Appendix IIII	NSPS, Subpart IIII - Stationary Compression Ignition Internal Combustion Engines;
Appendix JJJJJJ	NESHAP, Subpart JJJJJJ - National Emission Standard for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources; and
Appendix ZZZZ	NESHAP, Subpart ZZZZ - Stationary Reciprocating Internal Combustion Engines (RICE).

4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.

5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]

6. Modifications: No emissions unit shall be constructed and no existing emission unit shall be modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]

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7. Source Obligation:

   a. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   b. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   [Rule 62-212.400(12), F.A.C.]

8. Application for Title V Permit: This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V air operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V air operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to the Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220 and Chapter 62-213, F.A.C.]

9. Objectionable Odors Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor. [Rule 62-296.320(2), F.A.C.]

   {Note: An objectionable odor is defined in Rule 62-210.200(Definitions), F.A.C., as any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance.}

10. Title IV Permit: At least 24 months before the date on which the new unit begins serving an electrical generator greater than 25 MW, the permittee shall submit an application for a Title IV Acid Rain Permit to the Department's Office of Permitting and Compliance in Tallahassee and a copy to the Region 4 Office of the U.S. Environmental Protection Agency (EPA) in Atlanta, Georgia. This permit does not specify the Acid Rain program requirements. These will be included in the Title V air operation permit. [40 CFR 72].

11. Unconfined Emissions of Particulate Matter: No person shall cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any activity, including vehicular movement; transportation of materials; construction, alteration, demolition or wrecking; or industrially related activities such as loading, unloading, storing or handling; without taking reasonable precautions to prevent such emissions. Any permit issued to a facility with emissions of unconfined particulate matter shall specify the reasonable precautions to be taken by that facility to control the emissions of unconfined particulate matter. Appendix BMP of this permit provides a Best Management Plan (BMP) of reasonable precautions specific to the US EcoGen facility to control fugitive PM emissions. [Rule 62-296.320(4)(c), F.A.C.]

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A. Fuel Receiving, Handling, Storage and Processing (EU-001)

This section of the permit addresses the following emissions unit.

EU ID No. 001	Emission Unit Description
Fuel Receiving, Handling, Storage and Processing: EU 001 will consist of unloading, transferring, storage and delivery of clean woody biomass to the BFB boiler. The following major equipment is associated with EU-001: truck dumper areas, covered conveyor systems, biomass/log storage areas, boiler delivery fuel bins, log loading deck and log chipper. This emission unit is being designed to accommodate clean woody biomass primarily in the form of pre-processed chips and whole logs. Trucks will enter the plant and will proceed to a scale station for weighing. The trucks will then proceed to the truck dumping stations or log unloading area. At the dumping station, the chipped biomass from the trucks will be emptied into the receiving hoppers, as well as receiving hoppers that can be accessed by material handling equipment. Logs from the log pile will be transported to the log loading deck from which the logs are conveyed to an electrically driven log chipper that processes the logs into chips. The typical biomass receiving operation will be 10 hours/day and 6 days/week. The chipper feed operation will be 5 days/week and 24 hours/day (150 TPH). Other design characteristics are as follows: • Clean Woody Biomass Feedstock Throughput: 500 tons per hour (TPH); • Truck Fuel Receiving Dumpers: 160 TPH and 1,401,600 tons per year (TPY); • Fuel Stackout Conveyor to Fuel Pile: 310 TPH and 2,715,600 TPY; and • Fuel Reclaim #1 and #2: 90 TPH each and 788,400 TPY each.	

EQUIPMENT

1. Process Equipment: The permittee is authorized to construct fuel receiving, handling, storage and processing systems consisting of the following primary pieces of equipment:
   a. Fuel Receiving (Chip) Including Dumping Stations: Supply Trucks Inbound and Outbound;
   b. Covered Conveyor Systems: Covered conveyor systems for woody biomass handling with associated drop points within the conveyor system that shall be covered where technically feasible;
   c. Fuel Prep Tower: Consists of bypass diverter gate, screens and stackout conveyor; and
   d. Magnetic Separator: Used to remove metals from the received chipped biomass prior to conveyance to the fuel bins.

   [Application No. 1050444-001-AC; Rule 62-4.070(3); Rule 62-210.200(PTE), F.A.C.]

2. Air Pollution Control Equipment: To minimize fugitive dust, woody biomass conveyors shall be covered. Dust collectors shall be installed on the conveyor transfer drop points where practical. Vent screens associated with the fuel bins shall be installed on the fuel bins to minimize dust.

   {Permitting Note: Covered conveyors means that the conveyance belt for the biomass is totally covered from above thus preventing wind from causing fugitive dust emissions. However, the bottom of the conveyance belt shall be accessible for maintenance and repairs. One small section of the conveyance belt near the receiving point shall provide for visible inspection from above so that woody biomass that does not meet specification of "clean woody biomass" in Condition 5 of this subsection can be removed.}

   [Application No. 1050444-001-AC; Rule 62-4.070(3), F.A.C.]

3. BMP Plan: A Best Management Practice (BMP) plan shall be utilized to minimize fugitive PM emissions from the receiving, handling, storage, and processing of woody biomass. A preliminary BMP plan is contained in Appendix BMP of this permit. This plan also includes quality control and quality assurance (QA/QC) procedures to ensure woody biomass delivered by vendors and suppliers

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to the facility meets the requirements given in Specific Condition 5 of this subsection. No later than 180 days before the facility becomes operational, a final BMP plan shall be filed with the Compliance Authority to reflect the final engineering designs of the biomass receiving, handling, storage and processing systems. The final BMP plan shall also be incorporate into the Title V operating permit.

{Permitting Note: As part of the final BMP, technical information may be provided to the Compliance Authority based on the final engineering of the fuel conveyance system that describes methods or equipment designed to control fugitive PM emissions from the conveyor transfer drop points.}

[Application No. 1050444-001-AC; Rule 62-296.320, F.A.C.]

PERFORMANCE RESTRICTIONS

4. Hours of Operation: The hours of operation of this equipment are not limited (i.e., unrestricted at 8,760 hours per year).
[Application No. 1050444-001-AC; Rule 62-4.070(3); Rule 62-210.200(PTE), F.A.C.]

5. Clean Woody Biomass: Eucalyptus trees will be grown and harvested in eucalyptus tree plantations for use as the primary BFB boiler fuel. Approximately two years after being planted, the eucalyptus trees will supply the majority of the biomass fuel to the BFB boiler. Until sufficient eucalyptus trees are available, "bridging" biomass will be used to fuel the BFB boiler. The "bridging" biomass fuel shall consist of clean, untreated woody biomass as defined below. The BMP plan shall be followed with regard to (QA/QC) procedures to ensure the biomass fuel meets the definitions given below.

Fuel Group	Description
Primary Biomass Fuel	
Eucalyptus Trees (Primary Fuel)	Whole logs chipped off site or shipped to the site and then chipped to provide wood chips as fuel to the BFB boiler
Bridging Biomass Fuel	
Forest Products Residue & Commercial Tree trimmings	Tops, limbs and whole tree (soft or hardwoods) that result from harvesting and/or thinning as well as the residue therefrom
	Forest understory including smaller trees and saplings
	Tree parts and/or branches that have been cut down for land development or line clearing purposes or that have been gathered after storms.
Wood Production Residuals	Butts, sticks, pole ends and tree surgeon material
	Saw dust and kerf waste from cutting/milling whole green trees
	Fines from planing kiln-dried lumber
Clean wood waste	Clean construction wood waste that was a primary mill product and has not been treated in any way. Acceptable materials include untreated pallets, dimensional lumber, clean wood trim, and clean milled lumber.
Whole Tree Chips	Wood chips from whole trees on an opportunity basis

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6. Clean Woody Biomass Storage Areas: Chipped biomass and whole logs will be stored in piles. Use of wood chips will be in a first in/first out (FIFO) basis. The storage piles (chips and logs) will be managed by mechanical means such as front-end loaders. The biomass chips processed offsite and the chips from whole logs processed onsite will then be taken by covered conveyors to the biomass fuel bins and from there to the BFB boiler. [Application No. 1050444-001-AC]

7. Paved Roadways and Gravel Areas: Fugitive dust emissions from the plant's paved roadways and gravel areas shall be controlled in accordance with Best Management Practice specified in Appendix BMP of this permit. [Rule 62-296.320, F.A.C.]

EMISSIONS STANDARDS

8. Opacity: There shall be no visible emissions greater than 5% opacity from dust collectors associated with this emission unit.
[Application No. 1050444-001-AC; Rule 62-296.320(4)(b) and (c), F.A.C.; Rule 62-296.320(2), F.A.C.]

TESTING AND MONITORING REQUIREMENTS

9. Initial VE Compliance Tests: The outlets of the dust collectors shall be tested to demonstrate initial compliance with the emissions standards for opacity. The initial tests shall be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial operation of the emission unit. [Rule 62-4.070(3); Rule 62-297.310(7)(a)1, F.A.C.]

10. Annual VE Compliance Tests: During each federal fiscal year (October 1st to September 30th), the dust collectors of this emissions unit shall be tested to demonstrate compliance with the emissions standards for opacity. [Application No. 1050444-001-AC; Rule 62-297.310(7)(a)4, F.A.C.]

11. Test Requirements: The permittee shall notify the Compliance Authority in writing at least 15 days prior to any required tests. Tests shall be conducted in accordance with the applicable requirements specified in Appendix CTR (Common Testing Requirements) of this permit.
[Rule 62-297.310(7)(a)9, F.A.C.]

12. Test Methods: Required tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
9	Visual Determination of the Opacity of Emissions from Stationary Sources

The above method is described in Appendix A of 40 CFR 60 which is included as Appendix GP of this permit is are adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department.
[Rule 62-204.800; Rule 62-297.100, F.A.C.; Appendix A of 40 CFR 60]

RECORDS AND REPORTS

13. Test Reports: The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix CTR (Common Testing Requirements) of this permit. For each test run, the report shall also indicate the operating rate. [Rule 62-297.310(8), F.A.C.]

14. Baghouse Design Specifications: The permittee shall maintain records of dust outlet loading for all new and replacement bags to demonstrate compliance with the baghouse design specification.
[Application No. 10504444-001-AC; Rule 62-4.070(3), F.A.C.]

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B. Power Island (EU-002)

This section of the permit addresses the following emissions units.

EU ID No. 002	Emission Unit Description

Description: The boiler will be a woody biomass-fueled BFB boiler wherein wood is combusted within in a bed of hot sand. The heat from the exhaust will be recovered to generate superheated steam to generate a nominal 63 MW of electricity in a STEG.

Fuels: The primary fuel for the BFB will be eucalyptus trees once the eucalyptus trees from the plantations becomes established. The secondary fuel will be clean woody biomass as described in Section 3-A, Specific Condition 5 and Appendix BMP of this permit. Natural gas will be used for startup, shutdown and flame (bed) stabilization fuel.

Maximum Continuous Rating (Heat Input): The maximum continuous rating to the BFB boiler is 740 million British thermal units per hour (MMBtu/hr). The maximum design rate using natural gas alone is 160 MMBtu/hr.

Maximum Continuous Rating (Steam Production): The maximum continuous rating (MCR) of steam production of the BFB boiler is 565,000 pounds per hour (peak is 110% of MCR).

Controls: GCP in the BFB boiler to minimize formation of PM, NO_X, CO and VOC; limitation of biomass to woody untreated biomass to minimize SO_2 and HAP formation, including HCl; use of natural gas for startup, shutdown and flame (bed) stabilization; ammonia injection into SCR reactor to destroy NO_X; acid gas control system to control SO_2 and HCl emissions; and a fabric filter baghouse to control PM emissions.

Stack Parameters: The stack will be approximately 11 feet diameter and 180 feet tall.

Continuous emissions and opacity monitoring systems (CEMS, COMS): Emissions of CO, NO_X and SO_2 will be monitored and recorded by CEMS. VE will be monitored and recorded by a COMS.

Applicability of 40 CFR Subpart Db (NSPS Subpart Db): This unit is subject to NSPS Subpart Db – Industrial-Commercial-Institutional Steam Generating Units because it has a maximum heat input capacity greater than 100 mmBtu/hr from the fuels combusted and is not subject to NSPS Subpart Da because it has a maximum heat input capacity less than 250 mmBtu/hr from the fossil fuels combusted.

In addition to the BFB boiler the following equipment is also associated with this EU:

- *Aqueous Ammonia Storage Tank:* Aqueous ammonia at a 19% concentration level or less will be used as the reactant and will be stored onsite in a nominal 10,000 gallon pressurized horizontal tank. No air emissions are associated with the ammonia storage tank.
- *Air Cooled Condenser and Auxiliary Cooling Towers*: Cooling of spent steam in the steam turbine power system will be provided by an air cooled condenser unit. The air cooled condenser does not have the potential to emit regulated air pollutants. The auxiliary cooling tower will provide cooling for various components, including turbine lube oil, BFB lube oil, and generator coolers. The auxiliary cooling tower has the potential to emit a small amount of PM.
- *Sand Storage Silo*: A sand storage silo will be installed to store the makeup sand for use in the bed of the BFB boiler. PM will be controlled by a breather vent or vent filter.
- *Sorbent Storage Silo*: A sorbent storage silo will be installed to store the sorbent use in the spray dryer absorber (SDA) system or multilevel/multiple injection location dry sorbent injection (DSI) system. PM will be controlled by a breather vent or vent filter.

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EQUIPMENT

1. Construction of BFB Boiler: The permittee is authorized to construct a BFB boiler with fluidizing air supply, natural gas startup and stabilization burners, overfire air ports, steam drum, superheater, economizer, air heater, ash hoppers, ducts, steam turbine-electrical generator, fuel feeding equipment, air-cooled condensing unit, auxiliary cooling tower, and other associated equipment. [Application No. 1050444-001-AC]

2. BFB Boiler Air Pollution Control Equipment: To comply with the emission standards of this permit, the permittee shall install the following add-on air pollution control equipment on the BFB boiler.

   a. Baghouse: The permittee shall design, install, operate and maintain a baghouse to control PM and VE. The design control efficiency of the baghouse shall be 99%.

   b. SCR System: The permittee shall design, install, operate, and maintain an ammonia based SCR system including ammonia storage tank, pumps, metering system, injection grid, reactor and catalyst to reduce NO_X emissions in the flue gas exhaust and achieve the NO_X emissions standards specified in this subsection. The SCR shall be brought on line and functioning properly whenever the boiler is in operation in accordance with the manufacturer's procedures and guidelines. The storage tank of ammonia shall comply with all applicable requirements of 40 CFR 68.

   c. Acid Gas Control System:

      (i.) A spray dryer absorber (SDA) system shall be installed, operated and maintained to control acid gas emissions such as SO_2 and HCl to achieve the respective emission standards specified in this subsection. The SDA process consists of an absorber chamber, a rotary atomizer, a flue gas disperser, a downstream dust collector, and an absorbent feed preparation system, or;

      (ii.) A multilevel/multiple injection location DSI system utilizing sodium bicarbonate as its sorbent shall be installed, operated and maintained to control acid gas emissions such as SO_2 and HCl to achieve the respective emission standards specified in this subsection. The DSI and multicyclone system involves finely milled sodium bicarbonate multi-level injection after the economizer and just prior to baghouse, with addition of multicyclone separator prior to the baghouse inlet. The permittee shall notify the Department of the specific technology selected as the control device within 90 days of selecting the final design.

   d. Circumvention: The permittee shall not circumvent the acid gas control equipment or allow emissions without this equipment operating properly. The utilization of the acid gas control system will be on an as needed to maintain minor source HAP status. The "as needed" basis will be determined by performance testing within 60 calendar days of achieving permitted capacity as defined in Rule 62-297.310(2), F.A.C., but no later than 180 calendar days after initial startup.

      {Permitting Note: Performance curves established during shakedown per Specific Condition 20 of this subsection will determine the requirements for the operating the acid gas control system.}

      [Application No. 1050444-001-AC; Rule 62-210.650, F.A.C.; Rule 62-4.070(3), F.A.C.; 40 CFR 60.12]

3. Sand Storage Silo: A sand storage silo will be installed to store the makeup sand for use in the bed of the BFB boiler. PM will be controlled by a breather vent or vent filter.

4. Sorbent Storage Silo: A sorbent storage silo will be installed to store the sorbent use in the spray dryer absorber (SDA) system or multilevel/multiple injection location dry sorbent injection (DSI) system. PM will be controlled by a breather vent or vent filter.

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B. Power Island (EU-002)

PERFORMANCE RESTRICTIONS

5. Authorized Fuels: The BFB boiler is authorized to combust eucalyptus tree wood chips and clean woody biomass as defined in Specific Condition 5 of Section 3-A of this permit. In addition, the boiler is authorized to combust natural gas as a supplemental fuel primarily for startup, shutdown and flame (bed) stabilization.

   {Restriction of fossil fuels to natural gas satisfies the requirement to determine state only small boiler BACT for PM and SO_2 to the extent that fossil fuel is fired in accordance with Rule 62-296.406, F.A.C.}

   [Application No. 1050444-001-AC; Rule 62-4.070(3); Rule 62-296.406; Rule 62-210.200(PTE), F.A.C.; NSPS, Subpart Db]

6. Heat Input from Fossil Fuels: The burner equipment to fire natural gas in the BFB boiler shall be physically constrained such that it cannot burn more than 160 MMBtu/hr of heat input from natural gas. This limitation satisfies the fossil fuel heat input limitation requirements of NSPS, Subpart Db. The maximum amount of natural gas that may be burned in the BFB boiler in any 12-month consecutive period, assuming a heat content of the natural gas of 1,020 Btu per standard cubic feet (scf), is 1,374 million standard cubic feet (scf). [Application No. 1050444-001-AC; NSPS Subpart Db; Rule 62-4.070(3); Rule 62-212.400, F.A.C., Avoid 40 CFR Part 60 Subpart Da]

7. Operational Hours: The hours of operation of this EU, including silos and cooling towers, are not restricted (8760 hours/year).
   [Application No. 1050444-001-AC; Rule 62-4.070(3); Rule 62-210.200(PTE), F.A.C.]

NSPS APPLICABILITY

8. NSPS Subpart Db: The BFB boiler is subject to the applicable provisions of NSPS Subpart Db in 40 CFR 60 for Industrial-Commercial-Institutional Steam Generating Units and provided in Appendix Db of this permit. For the BFB boiler, NSPS Subpart Db specifies limits for NO_X, PM and opacity and requires a CEMS for NO_X and a COMS for opacity. The BFB boiler is exempt from the NSPS SO_2 emission limit since the uncontrolled SO_2 emission rate is 0.32 lb/MMBtu or less with the use of low sulfur biomass fuel and natural gas. [40 CFR 60, NSPS Subpart Db]

NESHAP APPLICABILITY

9. Subpart JJJJJJ: The BFB boiler is subject to the applicable provisions of NESHAP Subpart JJJJJJ in 40 CFR 63 for Area Sources - Industrial, Commercial, and Institutional Boilers and Process Heaters for major sources of HAP. [40 CFR 63, NESHAP Subpart JJJJJJ]

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B. Power Island (EU-002)

EMISSIONS STANDARDS

10. Emission Limits: Emissions from BFB boiler shall not exceed the following standards.

Pollutant	Emission Standard	Basis	Compliance Demonstration
NO_X [1]	0.30 lbs/MMBtu	NSPS Db 40 CFR 60.44b Avoid PSD Rule 62-212.400(12), F.A.C.	30-day rolling average, rolled daily compliance by CEMS
	246 TPY	Avoid PSD Rule 62-212.400(12), F.A.C.	12-month rolling average, rolled monthly, compliance by CEMS
CO	246 TPY	Avoid PSD Rule 62-212.400(12), F.A.C.	12-month rolling average, rolled monthly, compliance by CEMS
SO_2	227 TPY [2]	Avoid PSD Rule 62-212.400(12), F.A.C.	12-month rolling average, rolled monthly, compliance by CEMS
PM [3, 7]	0.03 lbs/MMBtu (filterable only)	NESHAP JJJJJJ NSPS Db 60.43b(h)(1) Avoid PSD Rule 62-212.400(12), F.A.C.	Initial and Annual Stack Test
VE[4]	10% average, daily block	NESHAP JJJJJJ, Reasonable Assurance[4]	Compliance by COMS
	20% (27%), one 6-minute block/hour	NSPS Subpart Db	
HCl	9.9 TPY	Avoids Major HAP Status [5]	Initial and Annual Stack Test, Performance Curves [6]

1. NO_X limit in pounds per million Btu heat input (lb/MMBtu) on a 30-day basis is pursuant to NSPS Subpart Db applicable to units that combust wood with very low sulfur natural gas. Mass rate limit in TPY insures annual emissions will be less than 250 TPY and avoids PSD.
2. Use of low sulfur fuels including wood and natural gas insure that uncontrolled SO_2 emissions are less than 0.32 lb/MMBtu. Therefore, no specific limit from NSPS Subpart Db applies. Compliance with this exemption is by fuel monitoring. Mass rate limit in TPY insures annual emissions will be less than 250 TPY.
3. Meeting the NSPS and NESHAP PM limits equals approximately 97.2 TPY. Meeting these limits will provide reasonable assurance that annual emissions of $PM/PM_{10}/PM_{2.5}$ (including condensable) will be less than 250 TPY.
4. VE by continuous opacity monitoring system (COMS). VE standard of 10% opacity per NESHAP Subpart JJJJJJ. VE must meet 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent to meet NSPS Subpart Db requirements. Meeting the Subpart Db requirements ensure meeting the VE requirements of Rules 62-296.320 and 62-296.406, F.A.C. The permittee must meet the work practice standard requirements of the NESHAP JJJJJJ during periods of startup, shutdown and malfunction. A work practice standards plan to minimize emissions during these periods shall be submitted to the Compliance Authority for approval no later than 180 days prior to boiler startup. Opacity of 10% provides reasonable assurance of continuous compliance with PM/PM_{10} and is a reasonable expectation given catalyst-based NO_X, CO, VOC controls.
5. Must stay below 10 TPY threshold for an individual HAP to avoid becoming a major source of HAP and triggering NESHAP Subpart DDDDD - Major Sources: Industrial, Commercial, and Institutional Boilers.
6. Performance curves in conjunction with annual stacking testing to determine suitable sorbent injection rates show compliance with the 9.9 TPY emission cap.
7. Compliance with this PM limit ensures compliance with Rule 62-296.410, F.A.C. and 62-296.406, F.A.C.

[Application No. 1050444-001-AC; Rules 62-210.200(PTE), 62-296.406, 62-296.410, and 62-212.400(12), F.A.C.; 40 CFR 60, Subpart Db; and 40 CFR 63, Subpart JJJJJJ]

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11. Sand and Sorbent Storage Silos: Opacity from the breather vent or vent filter of the sand and sorbent storage silos shall not exceed 5% opacity based on EPA Method 9 during initial and annual tests. Test shall take place during loading of the silos. [Application No. 1050444-001-AC; and Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.

CONTINUOUS EMISSION MONITORS

12. Continuous Monitoring Requirements: The permittee shall install, calibrate, maintain and operate CEMS and a diluent monitor to measure emissions of SO_2, NO_X and CO from the boiler stack. The permittee shall install a COMS to measure and record opacity from the boiler stack. The CEMS, COMS and diluent monitor shall be installed in a manner sufficient to demonstrate continuous compliance with the CEMS-based and COMS-based emission standards. Each CEMS and COMS shall be installed, calibrated and properly functioning within 30 calendar days of achieving permitted capacity as defined in Rule 62-297.310(2), F.A.C., but no later than 180 calendar days after initial startup and prior to the initial performance tests. Within one working day of discovering emissions in excess of a SO_2, NO_X, or CO standard, the permittee shall notify the Compliance Authority.
    a. SO_2 CEMS: The SO_2 CEMS shall be certified, operated, and maintained in accordance with the requirements of 40 CFR 75. Record keeping and reporting shall be conducted pursuant to Subparts F and G in 40 CFR 75.
    b. NO_X CEMS: The NO_X CEMS shall be certified, operated, and maintained in accordance with the requirements of 40 CFR Part 75. Recordkeeping and reporting shall be conducted pursuant to Subpart Db in 40 CFR 60 and Subparts F and G in 40 CFR 75.
    c. CO CEMS: The CO CEMS shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 4 or 4A. Quality assurance procedures shall conform to the requirements of 40 CFR 60, Appendix F, and the Data Assessment Report of Section 7 shall be made each calendar quarter, and reported semiannually to the Compliance Authority. The RATA tests required for the CO monitor shall be performed using EPA Method 10 in Appendix A of 40 CFR 60. The CO monitor span values shall be set appropriately, considering the allowable methods of operation and corresponding emission standards.
    d. COMS: In accordance with 40 CFR 60.48b(a) the permittee shall install, calibrate, operate and maintain a continuous opacity monitor (COM) to continuously monitor and record opacity from the steam generating unit. The COMS shall be certified pursuant to 40 CFR 60 Appendix B, Performance Specification 1.
    e. Diluent Monitor: The oxygen (O_2) or carbon dioxide (CO_2) content of the flue gas shall be monitored at the location where SO_2, CO and NO_X are monitored. Each monitor shall comply with the performance and quality assurance requirements of 40 CFR 75.

    [Application No. 1050444-001-AC; Rule 62-4.070(3), F.A.C.; 40 CFR 60, Subpart Db and Appendices]

STARTUP, SHUTDOWN AND MALFUNCTION REQUIREMENTS

13. Malfunction Notifications: In case of excess emissions resulting from malfunctions, each owner or operator shall notify the Compliance Authority. If the permittee is temporarily unable to comply with any of the conditions of the permit due to any unavoidable mechanical and/or electrical failure of air pollution control equipment or process equipment or of a process resulting in operation in an abnormal or unusual manner the permittee shall immediately (within one working day) notify the Compliance Authority. Notification shall include pertinent information as to the cause of the problem, and what steps are being taken to correct the problem and to prevent its recurrence. If requested by the Compliance Authority, the owner or operator shall submit a quarterly written report describing the malfunction. [Rule 62-210.700(6), F.A.C.; Rule 62-4.130, F.A.C.]

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14. Operating Procedures: The emission standards established by this permit rely on "good combustion practices" to reduce emissions. Therefore, all operators and supervisors shall be properly trained to operate and maintain the steam generating unit and pollution control systems in accordance with the guidelines and procedures established by each manufacturer. The training shall include good combustion practices as well as methods of minimizing excess emissions. [Rule 62-4.070(3), F.A.C.]

15. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. All such preventable emissions shall be included in any compliance determination based on CEMS data. [Rule 62-210.700(4), F.A.C.]

16. Emission Limit Compliance and Excess Emission: Because of the long-term nature of all of the NO_X, SO_2 and CO CEMS-based mass emission rate limits and to avoid triggering PSD, all emissions data for these pollutants, including periods of startup, shutdown and malfunction, shall be included in any compliance determinations based on CEMS data. [Rules 62-210.700(4), 62-210.200(PTE) ,and 62-4.070(3), F.A.C.]

17. Excess Emissions Allowed – Opacity Requirements: During startup, shutdown and malfunctions, the stack opacity shall not exceed 20% based on 6-minute block averages, except for one 6-minute block per hour that shall not exceed 27% opacity.

[Rules 62-210.700(5), 62-210.200(PTE) and 62-4.070(3), F.A.C.]

TESTING REQUIREMENTS

18. Boiler Heat Input Rate Calculation: Section 5 of Appendix F provides a methodology for calculation of the heat input rate to a boiler using F-Factors. The applicable portions of Appendix F of 40 CFR 75 for the calculation of the heat input rate is contained in Appendix F of this permit. The test shall be conducted when firing only wood biomass as the primary fuel and natural gas as a startup, shutdown and flame (bed) stabilization fuel. The biomass shall be as close to the fuel mix and heating values of the boiler design fuel mix and heating value as practical and shall be at least three hours long. The boiler steam conditions and production rate shall be monitored and recorded during the test. The primary fuel firing rates in tons per hour and scf per minute shall be calculated and recorded based on the steam parameters. A sample of the as-fired biomass shall be analyzed for the heating value (Btu/lb) and moisture content (%). The actual heat input rate (MMBtu/hour) shall be determined by the steam parameters (enthalpies) and the measured thermal efficiency. Results of the test shall be submitted to the Compliance Authority within 45 days of completion. The boiler thermal efficiency test shall be repeated when eucalyptus tree wood chips become the primary boiler fuel replacing the "bridging" biomass fuel. In addition, the boiler thermal efficiency test shall be repeated during the 12-month period prior to renewal of any operation permit. If the tested boiler thermal efficiency is less than 90% of the design boiler thermal efficiency, then the tested thermal efficiency shall be used in any future calculations of the heat input rate until a new test is conducted. [Rule 62-4.070(3), F.A.C.]

19. Initial and Annual PM and Opacity Stack Tests: The stack tests shall be conducted within 60 days after achieving the maximum heat input rate to the boiler, but not later than 180 days after the initial startup of the boiler. All initial tests must be conducted between 90% and 100% of permitted capacity; otherwise this permit will be modified to reflect the true maximum capacity as constructed. The Department may require the permittee to repeat some or all of these initial stack tests after major replacement or major repair of any air pollution control or process equipment.

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a. BFB Boiler: In accordance with test methods specified in this permit, the BFB boiler stack shall be tested to demonstrate initial compliance with the emission standards for PM. Subsequent compliance stack tests for PM shall also be conducted during each federal fiscal year (October 1st to September 30th). Tests shall be conducted between 90 and 100% of the maximum heat input rate. CEMS data for CO, NO_X and SO_2 along with COMS data for opacity shall be reported for each run of the required tests for PM.

b. Silo Vent Filters: Opacity (vent filters of storage silos) shall be tested in accordance with the test methods specified in this permit to demonstrate compliance. Subsequent compliance stack tests for opacity shall also be conducted during each federal fiscal year (October 1st to September 30th).

[Application No. 1050444-001-AC; Rule 62-212.400(5)(c), F.A.C.; Rule 62-297.310(7)(a) and (b), F.A.C.; 40 CFR 60.8]

20. <u>HCl Performance Testing:</u> In accordance with test methods specified in this permit, the BFB boiler stack shall be tested to determine HCl emissions. The test shall be conducted within 60 days after achieving the maximum heat input rate to the boiler, but not later than 180 days after the initial startup of the boiler. To demonstrate reasonable assurance of compliance with the HCl emission cap given in Specific Condition 10 of this subsection the permittee shall use the following procedure.

a. The permittee is required to prepare a stack testing protocol that must be submitted 60 days in advance of such testing and approved by the District prior to actual performance testing.

b. The test protocol shall define the stack test program that will be used to determine HCl emissions based on boiler load, sorbent injection rate, and other critical parameters. The performance curves shall be used to determine the HCl mass emission rate (lb/hour) for the given operating conditions.

c. The permittee is required to perform the performance testing and develop performance curves for the bridging fuel to be used initially in the BFB boiler and then the eucalyptus tree wood chips biomass boiler fuel when it becomes available.

d. Performance curves shall be used to determine and track emissions of HCl from the BFB boiler on a monthly basis to show compliance with the HCl emission cap given in Specific Condition 10 of this subsection (i.e., hours of operation at given conditions multiplied by the HCl mass emission rate for the set of operating conditions).

e. Permittee is required to perform compliance stack testing within 60 days of the initial startup of the BFB boiler.

f. The permittee maybe required to perform HCl compliance stack test within a period of 60 days after any physical change or change in method of operation to the acid gas control system. Changes such as type of biomass fuel, type of sorbent injected or baghouse parameters (e.g. bag type) may required a HCl stack test be perform.

g. CEMS data for CO, NO_X and SO_2 along with COMS data for opacity shall be reported for each run of the required tests for HCl.

[Application No. 1050444-001-AC; Rule 62-212.400(5)(c), F.A.C.; Rule 62-297.310(7)(a) and (b), F.A.C.; 40 CFR 60.8]

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21. Test Methods: Any required stack tests shall be performed in accordance with the following methods.

EPA Method	Description of Method and Comments
1 - 4	Determination of Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content *{Notes: Methods shall be performed as necessary to support other methods.}*
5, 5B, 17	Measurement of PM
6C	Measurement of SO_2 Emissions (Instrumental)
7E	Measurement of NO_X Emissions (Instrumental)
9	Visual Determination of the Opacity
10	Measurement of CO Emissions (Instrumental) *{Note: The method shall be based on a continuous sampling train.}*
19	Calculation Method for NO_X, PM, and SO_2 Emission Rates
26, 26A	Determination of HCl Emissions from Stationary Sources

Test methods are specified in Appendix A of 40 CFR 60, adopted by reference in Rule 62-204.800, F.A.C. [Rules 62-204.800, F.A.C.; 40 CFR 60, Appendix A]

OTHER MONITORING REQUIREMENTS

22. Pressure Drop: The permittee shall maintain and calibrate a device which continuously measures and records the pressure drop across each baghouse compartment controlling the PM emissions from the BFB boiler. Records shall be maintained on site and made available upon request. [Rule 62-4.070(3), F.A.C.]

23. SCR NH_3 Injection: In accordance with the manufacturer's specifications, the permittee shall install, calibrate, operate and maintain a flow meter to measure and record the NH_3 injection rate for the SCR system. The permittee shall document the general range of NH_3 flow rates required to meet the NO_X standard over the range of load conditions by comparing NO_X emissions with NH_3 flow rates. During NO_X CEMS downtimes or malfunctions, the permittee shall operate at an NH_3 flow rate that is consistent with the documented flow rate for the given load condition. Records shall be maintained on site and made available upon request. [Rule 62-4.070(3), F.A.C.]

24. Natural Gas Usage: A natural gas flow meter shall be installed on the BFB boiler to keep track of the amount of natural gas burned in the boiler. Records of the natural gas usage must be kept on site and open to inspection by the Compliance Authority. [Rule 62-4.070(3), F.A.C.]

RECORDS AND REPORTS

25. Stack Test Reports: In addition to the information required in Rule 62-297.310(8), F.A.C., each stack test report shall also include the following information: heat input rate (MMBtu/hour), calculated authorized fuels firing rate (tons/hour, and for natural gas cubic feet per minute), and emission rates PM, NO_X, SO_2 and CO in lb/hr and HCl in TPY. [Rule 62-4.070(3), F.A.C.]

26. Monthly Operations Summary: By the tenth calendar day of each month, the permittee shall record the following for each fuel used in the BFB biomass boiler in a written or electronic log for the previous month of operation: hours of operation, tons of clean woody biomass "bridging" fuel, tons of eucalyptus wood chips, cubic feet of natural gas, total heat input rate; and the updated 12-month rolling totals for each of these operating parameters. In addition, the monthly heat input rate to the BFB biomass boiler shall be recorded and reported. The Monthly Operations Summary shall be maintained on site and made available for inspection when requested by the Department. [Rules 62-4.070(3) F.A.C.]

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27. Quarterly CO, NO_X, SO_2, HCl and Opacity Emissions Report: Within 30 days following the end of each quarter, the permittee shall submit a report to the Compliance Authority summarizing CO, NO_X, SO_2, HCl and opacity emissions including periods of startups, shutdowns, malfunctions, and CEMS and COMS systems monitor availability for the previous quarter. If opacity COMS data is excluded from a compliance determination during the quarter due to a malfunction, the permittee shall include a description of the malfunction, the actual emissions recorded, and the actions taken to correct the malfunction. See Appendix CTR of this permit for the reporting format. [Rules 62-4.070(3), 62-4.130, and 62-210.400(5)(c), F.A.C.]

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C. Ash Handling, Storage and Shipment (EU-003)

This section of the permit addresses the following emissions unit.

EU ID No. 003	Emission Unit Description
Ash Handling, Storage and Shipment: Ash consists of fly ash and bottom ash. Fly ash from the baghouse hoppers will be transferred via enclosed conveyors to a fly ash storage silo which shall be equipped with a vent filter or similar device. The vent filter or similar device will be designed to achieve a PM/PM_{10} emission rate or "dust outlet loading" of 0.01 grains per dry standard cubic feet (gr/dscf). Fly ash from the storage silo will be sent to a truck loading operation for removal off-site. The conveyor system will be enclosed and the chute used to dispense fly ash into the truck will be designed to minimized PM emissions. Bottom ash will be in the form of large solid particles and will be removed from the bottom of the boiler and stored in a metal container for future removal offsite. Design parameters include: • The fly ash handling system shall have a maximum design transfer rate of 0.75 TPH with a maximum annual design transfer rate of 6,570 TPY. • The fly ash shipment system shall have a maximum design transfer rate of 80 TPH (average design transfer rate of 5.5 TPH) with a maximum annual design transfer rate of 48,180 TPY. • The bottom ash handling system shall have a maximum design transfer rate of 1.0 TPH with a maximum annual design transfer rate of 8,760 TPY. • The fly ash storage system shall have a maximum design transfer rate of 0.75 TPH with a maximum annual rate of 6,570 TPY.	

EQUIPMENT

1. Equipment: The permittee is authorized to construct ash handling, storage and shipment system, which consists of the following equipment:
   a. Fly Ash Handling: Fly ash baghouse hoppers, fly ash convection pass hoppers, mechanical dust collector hoppers and fly ash transfer conveyors;
   b. Fly Ash Storage: Fly ash storage silo to store fly ash from the ash conveyor. The fly ash storage silo which will be equipped with a vent filter or alternative control technology;
   c. Fly Ash Shipment: Ash haul out – trucks inbound and outbound;
   d. Bottom Ash System: Vibrating conveyors to move bottom ash from the bottom of the boiler to the metal storage container prior to shipment offsite.

   [Application No. 1050444-001-AC]

2. Air Pollution Control Equipment: To comply with the emission standards of this permit, the permittee shall install and operate the following air pollution control equipment on the ash handling, storage and shipment emission unit.
   a. Enclosures and Dust Collectors: To minimize fugitive dust, bottom and fly ash conveyors shall be covered. Where practical, dust collectors shall be installed on the bottom and fly ash transfer points, drop points, hoppers and chutes.
   [Application No. 1050444-001-AC; Rule 62-4.070, F.A.C. Reasonable Assurance].
   b. Fly Ash Storage Silo: A vent filter or alternative control technology designed to achieve a PM/PM_{10} emission rate of 0.01 gr/dscf shall be installed and maintained. The particulate control device shall be installed and operational before the silo is brought into service.

   [Application No. 1050444-001-AC; Rule 62-4.070(3); Rule 62-210.200(PTE), F.A.C.]

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C. Ash Handling, Storage and Shipment (EU-003)

PERFORMANCE RESTRICTION

3. Hours of Operation: The hours of operation are not limited (i.e., unrestricted at 8,760 hours per year).

   [Application No. 1050444-001-AC; Rule 62-210.200(PTE), F.A.C.]

EMISSIONS STANDARDS

4. VE Standard: As determined by EPA Method 9, there shall be no visible emissions greater than 5% opacity from the fly ash storage silo. [Rules 62-296.320(4)(b); 62-4.070; and 62-212.400(5)(c), F.A.C.]

5. Control of Unconfined Emissions of PM: To ensure compliance with the emission standards with regard to opacity and PM of this subsection the permittee shall adhere to the procedures set forth in Appendix BMP of this permit with regard to fugitive emissions. [Application No. 1050444-001-AC; Rule 62-296.320 F.A.C.]

TESTING AND MONITORING REQUIREMENTS

6. Initial Compliance Tests: The dust collectors and fly ash silo baghouse associated with this emission unit shall be tested to demonstrate initial compliance with the VE standards specified in Specific Condition 4 of this subsection. The initial test shall be conducted within 180 days after initial operation.
   [Rule 62-297.310(7)(a)1., F.A.C.; Rule 62-4.070(3), F.A.C.]

7. Annual Compliance Tests: During each federal fiscal year (October 1st to September 30th), the dust collectors and fly ash silo baghouse associated with this emission unit shall be tested to demonstrate compliance with the VE emissions standards specified in Specific Condition 4 of this subsection.
   [Rule 62-297.310(7)(a)4, F.A.C.; Rule 62-4.070(3), F.A.C.]

8. Test Methods: Any required tests shall be performed in accordance with the following methods.

Method	Description of Method and Comments
EPA 9	Method 9 - Visual Determination of the Opacity of Emissions from Stationary Sources

RECORDS AND REPORTS

9. Test Reports: The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix CTR (Common Testing Requirements) of this permit. For each test run, the report shall also indicate the operating rate. [Rule 62-297.310(8), F.A.C.]

10. Dust Collector Design Specification: To demonstrate compliance with the dust outlet loading specification of the fly ash silo vent filter, the permittee shall maintain records from the vendor for new and replacement bags. [Rule 62-4.070(3), F.A.C.]

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D. Emergency Electrical Generator EU-004

This section of the permit addresses the following emissions unit.

EU ID No.	Emission Unit Description
004	One emergency diesel generator with a maximum design rating of 670 brake-horsepower (bHp), 500 kilowatts (kW)

NSPS AND NESHAP APPLICABILITY

1. NSPS Subpart IIII Applicability: This emergency generator is a Stationary Compression Ignition Internal Combustion Engine (Stationary ICE) and shall comply with applicable provisions of 40 CFR 60 Subpart IIII, including emission testing or certification. [40 CFR 60 Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines]

2. NESHAP Subpart ZZZZ Applicability: The emergency generator is a Liquid Fueled Reciprocating Internal Combustion Engines (RICE) and shall comply with applicable provisions of 40 CFR 63 Subpart ZZZZ. Pursuant to 40 CFR 63.6590(c) the generators must meet the requirements of Subpart ZZZZ by meeting the requirements of 40 CFR 60 Subpart IIII. [40 CFR 63 Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE)]

EQUIPMENT

3. Emergency Diesel Generator: The permittee is authorized to install, operate, and maintain one emergency generator with a maximum design rating of 500 kW (670 bHp) or smaller.
[Application No. 1050444-001-AC; Rule 62-210.200 (PTE), F.A.C.]

4. ULSD FO Storage Tank: The permittee is authorized to construct a 1,000 gallon tank to store ULSD FO for use in the emergency generator. [Application No. 1050444-001-AC; 62-4.070(3), Reasonable Assurance]

   {Permitting Note: The ULSD FO storage tank for the emergency generator at the EcoGen facility is not subject to NSPS Subpart Kb because it stores a liquid (ULSD FO) with a maximum true vapor pressure less than 3.5 kPa (0.51 pounds per square inch (psi)). Accordingly it is and unregulated emissions unit.}
   [40 CFR 60.110b(a) and (c); Rule 62-204.800(7)(b), F.A.C.]

PERFORMANCE RESTRICTIONS

5. Hours of Operation: The emergency generator may operate up to 250 hours per year for maintenance and testing purposes. [Application No. 1050444-001-AC; Rule 62-210.200 (PTE), F.A.C.]

6. Authorized Fuel: The emergency generator shall fire ULSD FO. The ULSD FO shall contain no more than 0.0015% sulfur by weight. [Application No. 1050444-001-AC; Rule 62-210.200 (PTE), F.A.C.]

EMISSION STANDARDS

7. Emergency Diesel Generator Emissions Limits: The emergency diesel generator shall comply with the following emission limits and demonstrate compliance in accordance with the procedures given in 40 CFR 60 Subpart IIII the language of which is given in Appendix IIII of this permit. Manufacturer certification can be provided to the Department in lieu of actual stack testing.

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Emergency Generator (450 ≤ kW ≤ 560) (600 ≤ hp ≤ 750)	**CO** (g/hp-hr)[1]	**PM** (g/hp-hr)	**SO_2**[2] **(% S)**	**NMHC**[3]**+NO_X** (g/hp-hr)
Subpart IIII (2009 and later)	2.6	0.15	0.0015	3.0

1. g/hp-hr means grams per horsepower-hour
2. SO_2 emission standard will be met by using ULSD FO in the emergency generator with fuel sulfur (S) content of 0.0015% by weight.
3. NMHC means Non-Methane Hydrocarbons.

[Application No. 1050444-001-AC; 40 CFR 60 Subpart IIII; Rule 62-4.070(3), F.A.C.]

RECORDS AND REPORTS

8. Notification, Recordkeeping and Reporting Requirements: The permittee shall adhere to the compliance testing and certification requirements listed in 40 CFR 60.4211 and maintain records demonstrating fuel usage and quality. [40 CFR 60.4211]

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D. Emergency Firewater Pump EU-005

This section of the permit addresses the following emissions unit.

ID	Emission Unit Description
005	One emergency diesel firewater pump with a maximum design rating of 200 hp (150 kW)

NSPS AND NESHAP APPLICABILITY

1. NSPS Subpart IIII Applicability: The firewater pump engine is an Emergency Stationary Compression Ignition Internal Combustion Engine (Stationary ICE) and shall comply with applicable provisions of 40 CFR 60 Subpart IIII. [40 CFR 60 Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines]

2. NESHAP Subpart ZZZZ Applicability: The firewater emergency pump engine is a Liquid Fueled Reciprocating Internal Combustion Engine (RICE) and shall comply with applicable provisions of 40 CFR 63 Subpart ZZZZ. Pursuant to 40 CFR 63.6590(c) the generator must meet the requirements of Subpart ZZZZ by meeting the requirements of 40 CFR 60 Subpart IIII.
[40 CFR 63 Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE)]

EQUIPMENT

3. Firewater Pump Engine: The permittee is authorized to install, operate, and maintain one emergency diesel fire pump engine. This unit will have a maximum rating of 200 hp or smaller.
[Application No. 1050444-001-AC; Rule 62-210.200(PTE), F.A.C.]

4. ULSD FO Storage Tank: The permittee is authorized to construct a 1,000 gallon tank to store ULSD FO for use in the fire water pump engine. [Application No. 1050444-001-AC; 62-4.070(3), Reasonable Assurance]

   {Permitting Note: The ULSD FO storage tank for the fire water pump engine at the EcoGen facility is not subject to NSPS Subpart Kb because it stores a liquid (ULSD FO) with a maximum true vapor pressure less than 3.5 kPa (0.51 pounds per square inch (psi)). Accordingly it is and unregulated emissions unit.}
   [40 CFR 60.110b(a) and (c); Rule 62-204.800(7)(b), F.A.C.]

PERFORMANCE RESTRICTIONS

5. Hours of Operation: The firewater emergency pump may operate up to 250 hours per year for maintenance and testing purposes. [Application No. 1050444-001-AC; Rule 62-210.200 (PTE), F.A.C.]

6. Authorized Fuel: This unit shall fire ULSD FO. The ULSD FO shall contain no more than 0.0015% sulfur by weight. [Application No. 1050444-001-AC; Rule 62-210.200 (PTE), F.A.C.]

EMISSION STANDARDS

7. Emergency Firewater Pump Emissions Limits: The emergency firewater pump engine shall comply with the following emission limits and demonstrate compliance in accordance with the procedures given in 40 CFR 60, Subpart IIII. Manufacturer certification may be provided to the Department in lieu of actual testing. [40 CFR 60.4211; Rule 62-4.070(3), F.A.C.]

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Emergency Pumps (130 ≤ kW < 225) (175 ≤ hp < 300)	**CO** (g/hp-hr)[1]	**PM** (g/hp-hr)	**SO_2**[2] **(% S)**	**NMHC+NO_X** (g/hp-hr)
Subpart IIII (2009 and later)	2.6	0.15	0.0015	3.0

1. g/hp-hr means grams per horsepower-hour.
2. SO_2 emission standard will be met by using ULSD FO in the emergency generator with a fuel sulfur content of 0.0015% by weight.

[Application No. 1050444-001-AC; 40 CFR 60 Subpart IIII; Rule 62-4.070(3), F.A.C.]

RECORDS AND REPORTS

9. Notification, Recordkeeping and Reporting Requirements: The permittee shall adhere to the compliance testing and certification requirements listed in 40 CFR 60.4211 and maintain records demonstrating fuel usage and quality. [Rule 62-212.400 (BACT), F.A.C.; 40 CFR 60.4211]

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