PERMIT AMENDMENT NO. 4911-119-0025-E-04-1
ISSUANCE DATE: 7/9/2018

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

Air Quality – Permit Amendment

In accordance with The Georgia Air Quality Act, O.C.G.A. Section 12-9-1, et seq and the Rules, Chapter 391-3-1, adopted pursuant to or in effect under that Act, Permit No. 4911-119-0025-E-04-1 issued on August 27, 2015 to:

Facility Name:	**GRP Franklin Renewable Energy Facility**
Facility Address:	**3465 Highway 198** **Carnesville, Georgia 30521 Franklin County**
Mailing Address:	**3465 Highway 198** **Carnesville, Georgia 30521**
Facility AIRS Number:	**04-13-119-00025**

for the following: Construction and operation of a 79 MW steam-turbine generator powered by steam from a 920.5 MMBtu/hr boiler (Source Code: B001) firing a combination of clean cellulosic biomass from clean construction and demolition wood, and small quantities of propane during startup and bed stabilization only; ancillary equipment includes a 450-kW emergency generator, a 125-hp fire pump, storage tanks and a cooling tower.

is hereby amended as follows: Add creosote treated railroad ties and distillate fuel oil to the allowed fuels and update the size of some of the equipment including updating the boiler (B001) to 700 MMBtu/hr.

Reason for Amendment: Application No. 26520 dated April 23, 2018.

This Permit is further subject to and conditioned upon the terms, conditions, limitations, standards, or schedules contained in or specified on the attached **8** page(s).

This Permit Amendment is hereby made a part of Permit No. 4911-119-0025-E-04-0 and compliance herewith is hereby ordered. Except as amended hereby, the above referenced Permit remains in full force and effect.

STATE OF GEORGIA
CONSTITUTION
WISDOM JUSTICE MODERATION
1776

[Signed]

Richard E. Dunn, Director
Environmental Protection Division

UPDATED LIST OF EMISSION UNITS

Emission Units		Air Pollution Control Devices	
ID No.	Description	ID No.	Description
B001	Wood biomass fired stoker boiler with a heat input capacity of 700 MMBtu/hr	ESP1 CYC1 SCR1 CAT1 DSI	Electrostatic Precipitator Cyclone Selective Catalytic Reduction System Oxidation Catalyst Dry Sorbent Injection (optional)
EG1	550 kW Diesel-fired emergency generator	NA	NA
FP1	125 hp fire pump engine	NA	NA
CT1	Counter-flow mechanical draft cooling tower	DE	Drift Eliminators
AM1	10,000 gallons aqueous ammonia storage tank	NA	NA
AS1	Fly ash storage silo (approximately 5,400 ft^3)	NA	NA
SO1	Sorbent storage silo (approximately 1,500 ft^3)	NA	NA
SA1	Sand storage silo	NA	NA

2. Allowable Emissions

2.5 The Permittee shall only fire clean cellulosic biomass, which may include clean construction and demolition wood, **creosote treated railroad ties, and distillate fuel oil** in the boiler (Source Code: B001). "Clean cellulosic biomass" and **"creosote treated railroad ties"** are defined in Condition 2.9 and 40 CFR 241.
[391-3-1-.03(2)(c); 40 CFR 63.11200(b) and 40 CFR 241.2]

2.6 The Permittee shall not discharge or cause the discharge into the atmosphere from the boiler (Source Code: B001) emissions that:

a. Contain particulate matter in excess of 0.03 pounds per million BTU heat input. This particulate matter standard shall apply at all times except periods of startup and shutdown.
[40 CFR 63.11201(a) and Table 1 (Row 3) of 40 CFR 63, Subpart JJJJJJ; 40 CFR 60.43b(h)(1); Avoidance of 40 CFR 52.21; 391-3-1-.02(2)(d)2.(iii) subsumed]

b. **Exhibit greater than 10 percent opacity on a daily block average, or maintain the 30-day rolling average total secondary electric power of the electrostatic precipitator (Control Device ID No.: ESP1) at or above the minimum total secondary electric power per Table 3 (Row 2) of 40 CFR 63 Subpart JJJJJJ. This standard shall apply at all times, except period of startup and shutdown.**
[40 CFR 63.11201(c) and Table 3 (Row 2) of 40 CFR 63, Subpart JJJJJJ; 40 CFR 60.43b(f) subsumed; 391-3-1-.02(2)(d)3. subsumed]

2.7 The Permittee shall not burn **distillate fuel oil** containing more than 0.30 percent sulfur, by weight or that, when combusted without SO2 emission control, has an SO2 emission rate equal to or less than 140 ng/J (0.32 lb/MMBtu) heat input, in the boiler (Source Code: B001).
[40 CFR 60.42b(k)(2) SO2 limit Avoidance and 391-3-1-.02(2)(g)2. subsumed]

2.8 The Permittee shall not combust more than **4,380,000 distillate fuel oil** in the boiler (Source Code: B001) during any 12 consecutive month period.
[40 CFR 60.44b(l)(1) NOx limit Avoidance]

2.9 For the purposes of this Permit:

Clean cellulosic biomass means those residuals that are akin to traditional cellulosic biomass, including, but not limited to: Agricultural and forest-derived biomass (e.g., green wood, forest thinnings, clean and unadulterated bark, sawdust, trim, tree harvesting residuals from logging and sawmill materials, hogged fuel, wood pellets, untreated wood pallets); urban wood (e.g., tree trimmings, stumps, and related forest-derived biomass from urban settings); corn stover and other biomass crops used specifically for the production of cellulosic biofuels (e.g., energy cane, other fast growing grasses, byproducts of ethanol natural fermentation processes); bagasse and other crop residues (e.g., peanut shells, vines, orchard trees, hulls, seeds, spent grains, cotton byproducts, corn and peanut production residues, rice milling and grain elevator operation residues); wood collected from forest fire clearance activities, trees and clean wood found in disaster debris, clean biomass from land clearing operations, and clean construction and demolition wood. These fuels are not secondary materials or solid wastes unless discarded. Clean biomass is biomass that does not contain contaminants at concentrations not normally associated with virgin biomass materials.

Any wood that has been treated with compounds such as chromate copper arsenate or comingled with such compounds or lead is not considered clean cellulosic biomass.

"Creosote treated railroad ties" means railway support ties treated with a wood preservative containing creosols and phenols and made from coal tar oil.
[391-3-1-.03(2)(c) and 40 CFR 241.2]

NEW CONDITION

2.19 Prior to burning creosote treated railroad ties in the boiler (Source Code: B001), the railroad ties shall be processed by, at a minimum, metal removal and shredding or grinding.
[40 CFR 241.4(a)(7)]

4. Process & Control Equipment

4.4 The Permittee shall operate the selective catalytic reduction system (Control Device ID No.: SCR1), **Electrostatic Precipitator (Control Device ID No.: ESP1), Cyclone (Control Device ID No.: CYC1), and Oxidation Catalyst (Control Device ID No.: CAT1)** at all times that the boiler (Source Code: B001) is in operation except during periods of startup.
[391-3-1-.03(2)(c)]

5. Monitoring

5.6 The Permittee shall install, calibrate, maintain, and operate monitoring devices for the measurement of the amount of **distillate fuel oil** burned in the boiler (Source Code: B001) on a daily basis, as well as calculate the total amount of **distillate fuel oil** burned on a monthly basis. Records shall be available for inspection by or submission to the Division upon request. The system shall meet the applicable performance specification(s) of the Division's monitoring requirements.
[40 CFR 60.49b(d)(2) and 391-3-1-.02(6)(b)1]

NEW CONDITION

5.9 The Permittee shall install, calibrate, maintain, and operate monitoring devices for the measurement of the indicated parameters on the following equipment. Data shall be recorded at the frequency specified below. Where such performance specification(s) exist, each system shall meet the applicable performance specification(s) of the Division's monitoring requirements.
[391-3-1-.02(6)(b)1]

a. Secondary voltage (kilovolts) for each field of the electrostatic precipitator (Control Device ID No.: ESP1) for the boiler (Source Code: B001). Data shall be recorded once per each hour of operation of the boiler,

b. Secondary current (milliamps) for each field of the electrostatic precipitator (Control Device ID No.: ESP1) for the boiler (Source Code: B001). Data shall be recorded once per each hour of operation of the boiler, or

c. Total power (in volt-amps) from the electrostatic precipitator (Control Device ID No.: ESP1) for the boiler (Source Code: B001).

d. The cumulative total hours of operation, during all periods of operation, for the boiler (Source Code: B001). Data shall be recorded daily.

6. Performance Testing

6.2 Performance and compliance tests shall be conducted and data reduced in accordance with applicable procedures and methods specified in the Division's Procedures for Testing and Monitoring Sources of Air Pollutants. The methods for the determination of compliance with emission limits listed under Section 2 which pertain to the emission units listed in Section 2.0 are as follows:

a. Method 1 for the determination of sample point locations.

b. Method 2, 2F, or 2G for the determination of stack gas flow rate.

c. Method 3 or 3A for the determination of stack gas molecular weight.

d. Method 3B for the determination of the emission rate correction factor or excess air; Method 3A may be used as an alternate.

e. Method 4 for the determination of stack gas moisture.

f. Method 5, Method 17 and Method 202 for the determination of particulate matter (PM) emissions.

g. Method 7 or 7E for the determination of nitrogen oxides (NOX) emissions. The NOX CERMS required by Condition 5.2a. shall be used for determining compliance with Condition 2.1.

h. Method 10 or 10b for the determination of carbon monoxide (CO) emissions. The CO CERMS required by Condition 5.2b. shall be used for determining compliance with Condition 2.1.

i. Method 9 for the determination of Opacity. Data from the COMS required by Condition 5.2e. may be used in lieu of Method 9 if the performance evaluation of the COMS has been completed and the results approved by the Division.

j. Method 19 when applicable, to convert pollutant emission concentration (i.e. grains/dscf for PM, ppm for gaseous pollutants), as determined using other methods specified in this section, to pollutant emission rates (i.e. lbs/MMBtu).

k. Method 26 or Method 26A for the determination of hydrogen fluoride (HF), hydrogen chloride (HCl) and chlorine (Cl2) emissions; the sampling time for each run shall be a minimum of one hour.

l. Method 3A or 3C for the determination of carbon dioxide (CO2) emissions; the sampling time for each run shall be a minimum of one hour.

m. NCASI Method ISS/FP A105.01 for the determination of acrolein emissions; the sampling time for each run shall be a minimum of one hour.

n. Method 0011 for the determination of formaldehyde and acetaldehyde emissions; the sampling time for each run shall be a minimum of one hour.

o. Method 18 or other approved method (SW-846, NCASI, etc.) for organic compounds detection for the determination of manganese, benzene, styrene, and toluene; the sampling time for each run shall be a minimum of one hour.

p. Method 29 for the determination of metal emissions, the sampling time for each run shall be a minimum of one hour.

Minor changes in methodology may be specified or approved by the Director or his/her designee when necessitated by process variables changes in facility design, or improvement or corrections, which, in his opinion, render those methods or procedures, or portions thereof, more reliable.
[391-3-1-.02(3)(a)]

NEW CONDITION

6.7 Within 180 days of the initial startup of the boiler (Source Code: B001), the Permittee shall conduct an initial performance test for 1,2-dibromoethane, hydrogen chloride, arsenic, chromium, lead, and silver, using the test method specified in Condition 6.2 operating at maximum.
[391-3-1-.02(3) and 391-3-1-.03(2)(c)]

NEW CONDITION

6.8 During the performance tests required in Condition 6.5, the Permittee shall record the actual secondary current (in mA), secondary voltage (in kV) for each field section, or the total power (in VA) of the electrostatic precipitator (Control Device ID No.: ESP1). The Permittee shall calculate the total power for the electrostatic precipitator using the secondary current and secondary voltage recorded during the performance tests and the equation in Condition 7.20, if applicable. Records of these parameters shall be submitted to the Division along with the results of the performance testing required in Condition 6.5.
[391-3-1-.02(3)(a) and 391-3-1-.03(2)(c)]

7. Notification, Reporting and Record Keeping Requirements

7.5 The Permittee shall submit a written report for each semiannual period ending June 30 and December 31 of each year, which includes the following information:
[391-3-1-.02(6)(b)1]

a. A summary of nitrogen oxides and carbon monoxide CERMS downtime during the reporting period;

b. A summary of sorbent injection and pressure drop excursions and sorbent injection and pressure drop monitor downtimes during the reporting period. For the purposes of this condition, a sorbent injection excursion is defined as any 3-hour block average that is below the operating level established during the most recent performance test;

c. The total operating time and the types and amounts of fuels fired in the boiler (Source Code: B001) during the reporting period;

d. The calculated monthly and consecutive 12-month rolling totals for hydrogen chloride (HCl), total HAPs, carbon monoxide (CO), and nitrogen oxides (NOX) emissions, for each month of the reporting period;

e. The magnitude of all exceedances and excursions and the date and time of the commencement and completion of the occurrence of each exceedance and excursion.

f. Identification of each period of such exceedances and excursions occurring during startups, shutdowns, or malfunctions of the facility. Include the nature and cause of any malfunction (if known) and any corrective actions taken or preventive measures adopted;

g. The date and time of each period during which any required monitoring system or device was inoperative (including periods of malfunction), except for zero and span checks, and the nature of the repairs, adjustments, or replacement needed to make the system operational. When a monitoring system or device has not been inoperative, repaired, or adjusted, this shall be stated in the report;

h. Certification that the **distillate fuel oil** burned in the boiler (Source Code: B001) complies with the requirements of Condition 2.7; and

i. The total quantity of **distillate fuel oil** burned in the boiler (Source Code: B001), determined on a 12-month rolling average basis for each calendar month in the reporting period to demonstrate compliance with Condition 2.8.

All semiannual reports shall be submitted in a manner suitable to the Division and postmarked by the 30th day following the end of each semiannual period, July 30 and January 30, respectively.

7.18 The Permittee shall verify that each shipment of **distillate fuel oil** received for combustion in the boiler (Source Code: B001) complies with the requirements of Condition 2.7. Verification shall consist of either of the following:
[40 CFR 60.41b, 391-3-1-.02(6)(b)1 and 40 CFR 70.6(a)(3)(i)]

a. Fuel oil receipts obtained from the fuel supplier certifying that the oil is distillate fuel oil and contains less than or equal to 0.30 percent sulfur, by weight; or

b. Analysis of the **distillate fuel oil** conducted by methods of sampling and analysis which have been specified or approved by the Division which demonstrates that the distillate fuel oil contains less than or equal to 0.30 percent sulfur, by weight.

NEW CONDITION

7.20 If the Permittee elects not to monitor the total power in accordance with Condition 5.9c., then the Permittee, using the hourly records of total secondary voltage and secondary current for the electrostatic precipitator (Control Device ID No.: ESP1), as applicable, that are obtained in accordance with Condition 5.9, shall determine and record total power for each field of the electrostatic precipitator (Control Device ID No.: ESP1), as applicable in accordance with the following equations:
[391-3-1-.02(6)(b)1]

$PT = V_1 * I_1 + V_2 * I_2$

Where:
PT = Total power to the electrostatic precipitator (Control Device ID No.: ESP1), as applicable, in volt-amps
V_1 = Total secondary voltage of the first field of the electrostatic precipitator (Control Device ID No.: ESP1), as applicable, in kilovolts
V_2 = Total secondary voltage of the second field of the electrostatic precipitator (Control Device ID No.: ESP1), as applicable, in kilovolts
I_1 = Total secondary current of the first field of the electrostatic precipitator (Control Device ID No.: ESP1), as applicable, in milliamps
I_2 = Total secondary current of the second field of the electrostatic precipitator (Control Device ID No.: ESP1), as applicable, in milliamps

NEW CONDITION

7.21 The Permittee shall keep records showing that the creosote treated railroad ties combusted in the boiler (Source Code: B001) have, at a minimum, been processed to remove metal and ground or shredded.
[40 CFR 60.2175(b) and 40 CFR 241.4(a)(7)]