



NARRATIVE

TO: James Eason

FROM: Bradley Belflower

DATE: April 8, 2019

Facility Name: **GRP Franklin Renewable Energy Facility**
AIRS No.: 119-00025
Location: Carnesville, GA (Franklin County)
Application No.: 26985
Date of Application: February 28, 2019

Background Information

GRP Franklin Renewable Energy Facility was issued Permit No. 4911-119-0025-E-04-0 on August 27, 2015, to construct and operate an electric power generating facility in Carnesville, Georgia. The facility was originally permitted as a 920 MMBtu/hr fluidized bed boiler burning clean cellulosic biomass with propane used for startup and bed stabilization only. The original permit was amended on July 9, 2018, to change the boiler type to a 700 MMBtu/hr stoker boiler that can burn biomass and fuel oil as part of normal operation. This change in boiler type also allowed the facility to add creosote treated railroad ties to the list of fuels for the boiler (See 40 CFR 241.4 – *Non-Waste Determinations for Specific Non-Hazardous Secondary Materials When Used as a Fuel*). The current permit has facility-wide NO_x and CO limits, so that the facility is a minor source for PSD, and facility-wide HAP limits, so that the facility is an area source for HAPs.

Purpose of Application

On March 1, 2019, the Division received Expedited Application No. 26985 (postmarked February 28, 2019) to (1) add a new belt dryer to dry wood chips prior to combustion in the boiler, (2) add “other-treated railroad ties” to the list of fuels that can be burned in the boiler, and (3) update the sizes of other support equipment. The belt dryer will draw air through wood chips and use hot water from the turbine generator as an energy carrier. The belt dryer will have a maximum input rate of 60 tons per hour (at 45% water). On February 7, 2018, EPA promulgated additions to 40 CFR 241.4 (*Non-Waste Determinations for Specific Non-Hazardous Secondary Materials When Used as a Fuel*) that allowed “other-treated railroad ties” be used as non-hazardous waste fuel. Note that “other-treated railroad ties” was used in the preamble to the proposed rule (81 FR 75781). The final rule uses the terms “creosote-borate treated railroad ties”, “copper naphthenate treated railroad ties”, and “copper naphthenate-borate treated railroad ties”.

GRP Franklin Renewable Energy was notified on March 4, 2019, that they were accepted into the Expedited Permitting Program. GRP Franklin Renewable Energy accepted the invitation into the program the same day. A check for the expedited permit fee cleared the lockbox on March 19, 2019.

A public advisory was issued on March 6, 2019, and expired on April 5, 2019. No comments were received.

Updated Equipment List

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)
BL01	Belt Dryer	NA	NA
EG1	500 kW Diesel-fired emergency generator	NA	NA
FP1	280 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

Emissions Summary

The facility's emissions are found in Appendix C, "Emissions Calculations", of Application No. 26985 and are summarized in the following table.

Facility-Wide Emissions
(in tons per year)

Pollutant	Potential Emissions			Actual Emissions		
	Before Mod.	After Mod.	Emissions Change	Before Mod.	After Mod.	Emissions Change
PM	93.6	93.6	0.0	84.2	84.3	0.1
PM ₁₀ /PM _{2.5}	55.6	55.6	0.0	50.0	50.0	0.0
NO _x	249	249	0.0	224.1	224.1	0.0
SO ₂	101.5	101.5	0.0	91.3	91.3	0.0
CO	249	249	0.0	224.1	224.1	0.0
VOC	52.5	222.0	169.5	47.1	199.7	152.6
Max. Individual HAP	9.0	9.0	0.0	8.1	8.1	0.0
Total HAP	24	24	0.0	18.37	22.54	4.17

Regulatory Applicability

There are no changes to the applicable regulations for this facility. A change has been to 40 CFR 241, “*Solid Wastes Used As Fuels or Ingredients in Combustion Units*”, that affects the fuels that GRP Franklin Renewable Energy Facility plans to use.

The Commercial and Industrial Solid Waste Incinerators (CISWI rules, 40 CFR 60 Subpart CCCC) rules apply to facilities that burn solid wastes as defined in 40 CFR 241. “Creosote-borate treated railroad ties”, “copper naphthenate treated railroad ties”, and “copper naphthenate-borate treated railroad ties” have been added to 241.4(a), the list of Non-Hazardous Secondary Materials (NHSM) that are exempt from the CISWI rules [see 40 CFR 241.4(a) (8), (9), and (10)]. Collectively these additional railroad ties have been referred to as “other-treated railroad ties” or “OTRT”. To qualify, the OTRT must be processed by, at a minimum, removing metal and grinding or shredding the railroad ties. Additionally, the boiler must be designed to burn both biomass and fuel oil as part of normal operations. The CISWI rules require facilities burning NHSM keep records that the fuel meets the requirements as a NHSM.

The area source Boiler MACT (40 CFR 63 Subpart JJJJJ) defines “biomass subcategory” as “any boiler that burns any biomass and is not in the coal subcategory”. Because the proposed change in fuels does not include coal, the applicability of Subpart JJJJJ is not changed.

The fuel oil burners are capable of firing fuel oil at a maximum rate of 140 MMBtu/hr. Because the boilers are not capable of firing fossil fuels at a rate of 250 MMBtu/hr, the PSD threshold is 250 tons per year instead of 100 tons per year.

Permit Conditions

Condition 2.5 was modified to include other treated railroad ties (OTRT) as allowed fuels in Boiler B001.

Condition 2.9 was updated to include the 40 CFR 241 definitions of “creosote-borate treated railroad ties”, “copper naphthenate treated railroad ties”, and “copper naphthenate-borate treated railroad ties” (collectively “other treated railroad ties”).

Condition 2.19, which specifies the minimum processing for the creosote treated railroad ties (CTRT) to qualify as a non-hazardous secondary material (NHSM) from 40 CFR 241, was updated to include OTRT.

Condition 6.2 was updated to include the appropriate test method for VOC.

Condition 6.7, which requires an initial emission test on the boiler, was updated to include an initial test for VOC.

New Condition 6.9 requires an initial performance test for VOC from the belt dryer.

Condition 7.21, which requires records that demonstrate that the CTRT qualifies as a non-hazardous secondary material (NHSM) from 40 CFR 241, was updated to include OTRT. This record is required in the CISWI rules at 40 CFR 60.2175(v).

Toxic Impact Assessment

Even though the change in potential emissions of toxic air pollutants (TAP) was negligible, an updated Toxic Impact Assessment (TIA) was included as Appendix D of Application No. 26985. This TIA was conducted using the SCREEN3 air dispersion model. The results of the TIA are summarized in the following table.

TAP	CAS No.	Percent of AAC		
		15-min	24-hr	Annual
HCl	7647-01-0	0.03%	NA	0.07%
Acetaldehyde	75-07-0	0.01%	NA	0.09%
Acrolein	107-02-8	0.32%	NA	21.96%
Benzene	71-43-2	0.02%	NA	16.13%
Chlorine	7782-50-5	0.02%	0.54%	NA
Formaldehyde	50-00-0	1.00%	NA	13.50%
Arsenic	7440-38-2	0.14%	NA	7.24%
Chromium (total)	7440-47-3	0.01%	NA	18.62%
Lead	7439-92-1	NA	0.13%	NA
Manganese	7439-96-5	0.01%	NA	0.38%
1,2-Dibromoethane	106-93-4	0.01%	NA	1.64%
Silver	7440-22-4	NA	19.00%	NA
Ammonia	7664-41-7	0.09%	NA	0.13%
Sulfuric Acid Mist	7664-93-9	0.16%	6.11%	NA

Summary & Recommendations

I recommend that Permit No. 4911-119-0025-E-04-2 be issued to GRP Franklin Renewable Energy Facility for the construction and operation of a belt dryer BL01 and the addition of other treated railroad ties as fuel in boiler B001 at their electric power generating facility. The facility is a major source and compliance activities will be assigned to the Stationary Source Compliance Program. A public advisory was issued on March 6, 2019, and expired on April 5, 2019. No comments were received.