



DEPARTMENT ORDER

**Maine Woods Pellet Company, LLC,
Athens Capital Holdings, LLC &
Athens Energy LLC
Somerset County
Athens, Maine
A-989-77-2-A**

**Departmental
Findings of Fact and Order
New Source Review
NSR #2
After-the-Fact**

FINDINGS OF FACT

After review of the air emission license amendment application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes (M.R.S.) § 344 and § 590, the Maine Department of Environmental Protection (the Department) finds the following facts:

I. REGISTRATION

A. Introduction

FACILITY	Maine Woods Pellet Company, LLC, Athens Capital Holdings, LLC & Athens Energy LLC
LICENSE TYPE	06-096 C.M.R. ch. 115, Minor Modification
NAICS CODES	321999
NATURE OF BUSINESS	Wood Pellet Manufacturer
FACILITY LOCATION	164 Harmony Rd, Athens, Maine

B. NSR License Description

Maine Woods Pellet Company, LLC (MWP), along with co-applicants Athens Capital Holdings, LLC and Athens Energy LLC, previously licensed the installation and operation of a cogeneration facility and additional pellet processing equipment in support of the facility's pellet processing operation (A-989-71-E-A dated May 13, 2015). The cogeneration facility includes two small emergency engines that were not included in the original New Source Review (NSR) license for this project. This NSR license addresses that equipment.

C. Emission Equipment

The following equipment is addressed in this NSR license:

Generators/Engines

<u>Equipment</u>	<u>Max. Heat Input Capacity (MMBtu/hr)</u>	<u>Max. Firing Rate (gal/hr)</u>	<u>Output</u>	<u>Fuel Type, % sulfur</u>	<u>Mfr. Date</u>	<u>Install. Date</u>
Thermal Oil Backup	0.8	5.6	101 Hp	distillate fuel, 0.0015%	2011	2016
Generator #1	1.8	12.8	187 kW	distillate fuel, 0.0015%	2010	2016

D. Definitions

Distillate Fuel. For the purposes of this license, *distillate fuel* means the following:

- Fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials (ASTM) in ASTM D396;
- Diesel fuel oil numbers 1 or 2, as defined in ASTM D975;
- Kerosene, as defined in ASTM D3699;
- Biodiesel, as defined in ASTM D6751; or
- Biodiesel blends, as defined in ASTM D7467.

E. Application Classification

All rules, regulations, or statutes referenced in this air emission license refer to the amended version in effect as of the issued date of this license.

The application for MWP does not violate any applicable federal or state requirements and does not reduce monitoring, reporting, testing, or recordkeeping requirements.

At the time the cogeneration project was licensed, MWP was a minor source. The installation of new emission units at an existing minor source is considered a major modification based on whether or not expected emission increases from the new equipment exceed the "Significant Emission" levels as defined in 06-096 C.M.R. ch. 100. Since the Thermal Oil Backup and Generator #1 were part of the cogeneration project, their emissions should have been included in determining whether the modification for the project as a whole was major or minor.

The emission increases are determined by the maximum future license annual emissions for the new emission units. The corrected comparison (including emissions from the Thermal Oil Backup and Generator #1) is as follows:

Pollutant	Max. Future License (TPY)	Significant Emission Levels
PM, PM ₁₀ , PM _{2.5}	68.9	100
SO ₂	15.2	100
NO _x	98.2	100
CO	243.6	100
VOC	49.2	50
CO ₂ e	121,896.6	100,000

Therefore, the original NSR modification for the cogeneration project (A-989-71-E-A) was correctly classified as major for carbon monoxide (CO) and carbon dioxide equivalent (CO₂e). This application seeks only to address the applicable requirements for the Thermal Oil Backup and Generator #1 and has therefore been processed as a minor modification under *Minor and Major Source Air Emission License Regulations*, 06-096 C.M.R. ch. 115.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in 06-096 C.M.R. ch. 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. Thermal Oil Backup and Generator #1

The Thermal Oil Backup is an John Deere model 4045H distillate-fired engine used to continue circulating thermal oil at the cogeneration facility in the event of power outage or equipment failure. The engine is rated at 0.8 MMBtu/hr and was

manufactured in 2011. MWP has provided evidence that the engine is certified by the manufacturer and conforms with the applicable EPA emissions tier.

Generator #1 is a Magnum Power Products, LLC 186 kW genset with a John Deere model 6068HF485 distillate-fired engine used for back-up emergency power. The engine is rated at 1.8 MMBtu/hr and was manufactured in 2010. MWP has provided evidence that the engine is certified by the manufacturer and conforms with the applicable EPA emissions tier.

1. BACT Findings

The BACT emission limits for the Thermal Oil Backup and Generator #1 are based on the following:

- PM/PM₁₀ - 0.31 lb/MMBtu from AP-42 Table 3.3-1 dated 10/96
- SO₂ - combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)
- NO_x - 4.41 lb/MMBtu from AP-42 Table 3.3-1 dated 10/96
- CO - 0.95 lb/MMBtu from AP-42 Table 3.3-1 dated 10/96
- VOC - 0.35 lb/MMBtu from AP-42 Table 3.3-1 dated 10/96
- Opacity - 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for the Thermal Oil Backup and Generator #1 are the following:

Unit	PM (lb/hr)	PM₁₀ (lb/hr)	SO₂ (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Thermal Oil Backup	0.24	0.24	—	3.40	0.73	0.27
Generator #1	0.54	0.54	—	7.72	1.66	0.61

Visible emissions from the Thermal Oil Backup and Generator #1 shall each not exceed 20% opacity on a six-minute block average basis.

2. 40 C.F.R. Part 60, Subpart IIII

Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 C.F.R. Part 60, Subpart IIII is applicable to the emergency engines listed above since the units were ordered after July 11, 2005, and manufactured after April 1, 2006. [40 C.F.R. § 60.4200] By meeting the requirements of 40 C.F.R. Part 60, Subpart IIII, the units also meet the requirements found in the *National Emission Standards for Hazardous Air*

Pollutants for Stationary Reciprocating Internal Combustion Engines, 40 C.F.R. Part 63, Subpart ZZZZ. [40 C.F.R. § 63.6590(c)]

A summary of the currently applicable federal 40 C.F.R. Part 60, Subpart III requirements is listed below. At this time, the Department has not taken delegation of this federal rule promulgated by EPA; however, MWP is still subject to the requirements.

a. Emergency Engine Designation and Operating Criteria

Under 40 C.F.R. Part 60, Subpart III, a stationary reciprocating internal combustion engine (ICE) is considered an **emergency** stationary ICE (emergency engine) as long as the engine is operated in accordance with the following criteria. Operation of an engine outside of the criteria specified below may cause the engine to no longer be considered an emergency engine under 40 C.F.R. Part 60, Subpart III, resulting in the engine being subject to requirements applicable to **non-emergency** engines.

(1) Emergency Situation Operation (On-Site)

There is no operating time limit on the use of an emergency engine to provide electrical power or mechanical work during an emergency situation. Examples of use of an emergency engine during emergency situations include the following:

- Use of an engine to produce power for critical networks or equipment (including power supplied to portions of a facility) because of failure or interruption of electric power from the local utility (or the normal power source, if the facility runs on its own power production);
- Use of an engine to mitigate an on-site disaster or equipment failure;
- Use of an engine to pump water in the case of fire, flood, natural disaster, or severe weather conditions; and
- Similar instances.

(2) Non-Emergency Situation Operation

An emergency engine may be operated up to a maximum of 100 hours per calendar year for maintenance checks, readiness testing, and other non-emergency situations as described below.

- (i) An emergency engine may be operated for a maximum of 100 hours per calendar year for maintenance checks and readiness testing, provided that the tests are recommended by federal, state, or local government; the manufacturer; the vendor; the regional transmission organization or equivalent balancing authority and transmission

operator; or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE more than 100 hours per calendar year.

- (ii) An emergency engine may be operated for up to 50 hours per calendar year for other non-emergency situations. **However, these operating hours are counted as part of the 100 hours per calendar year operating limit described in paragraph (2) and (2) (i) above.**

The 50 hours per calendar year operating limit for other non-emergency situations cannot be used for peak shaving, demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

[40 C.F.R. §§ 60.4211(f) and 60.4219]

b. 40 C.F.R. Part 60, Subpart III Requirements

(1) Manufacturer Certification Requirement

The engines shall be certified by the manufacturer as meeting the emission standards for new nonroad compression ignition engines found in 40 C.F.R. § 60.4202. [40 C.F.R. § 60.4205(b)] MWP provided evidence of this certification with their application.

(2) Ultra-Low Sulfur Fuel Requirement

The fuel fired in the engines shall not exceed 15 ppm sulfur (0.0015% sulfur). [40 C.F.R. § 60.4207(b)]

(3) Non-Resettable Hour Meter Requirement

A non-resettable hour meter shall be installed and operated on each engine. [40 C.F.R. § 60.4209(a)]

(4) Operation and Maintenance Requirements

The engines shall be operated and maintained according to the manufacturer's emission-related written instructions or procedures developed by MWP that are approved by the engine manufacturer. MWP

may only change those emission-related settings that are permitted by the manufacturer. [40 C.F.R. § 60.4211(a)]

(5) Annual Time Limit for Maintenance and Testing

As emergency engines, the units shall each be limited to 100 hours/year for maintenance checks and readiness testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity). [40 C.F.R. § 60.4211(f)]

(6) Initial Notification Requirement

No initial notification is required under 40 C.F.R. Part 60, Subpart IIII for emergency engines. [40 C.F.R. § 60.4214(b)]

(7) Recordkeeping

MWP shall keep records that include maintenance conducted on the engines and the hours of operation of each engine recorded through the non-resettable hour meter. Documentation shall include the number of hours each unit operated for emergency purposes, the number of hours each unit operated for non-emergency purposes, and the reason each engine was in operation during each time. [40 C.F.R. § 60.4214(b)]

C. Incorporation Into the Part 70 Air Emission License

The requirements in this 06-096 C.M.R. ch. 115 New Source Review license shall apply to the facility upon issuance. Per *Part 70 Air Emission License Regulations*, 06-096 C.M.R. ch. 140, MWP must apply for a Part 70 license within 12 months of commencing operation of the cogeneration facility. MWP shall include the Thermal Oil Backup and Generator #1 in that application.

D. Annual Emissions

1. MWP shall be restricted to the following annual emissions, based on a 12 month rolling total. The tons per year limits were calculated based on the following:

- Operation of Furnace #1 and Pre-Dryer #1 at full capacity for 8,200 hr/year;
- Operation of Dryer #1 at full capacity for 7,950 hr/year;
- Operation of the Cyclone Baghouse for 7,950 hr/year;
- Operation of the Fire Pump Engine, Thermal Oil Backup, and Generator #1 for 100 hr/year each; and
- Firing 20,000 gal/year of fuel in the Screen Engine.

Total Licensed Annual Emissions for the Facility
Tons/year
 (used to calculate the annual license fee)

	PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	VOC
Dryer #1	33.8	50.9	50.9	20.3	19.9	60.0	49.7
Cyclone Baghouse	2.0	2.0	2.0	–	–	–	–
Furnace #1 & Pre-Dryer #1	68.9	68.9	68.9	15.2	97.6	243.5	49.2
Fire Pump Engine	–	–	–	–	0.3	0.1	–
Screen Engine	0.2	0.2	0.2	0.7	6.0	1.3	0.5
Thermal Oil Backup	–	–	–	–	0.2	–	–
Generator #1	–	–	–	–	0.4	0.1	–
Total TPY	104.9	122.0	122.0	36.2	124.4	305.0	99.4

2. Greenhouse Gases

Greenhouse gases are considered regulated pollutants as of January 2, 2011, through ‘Tailoring’ revisions made to EPA’s *Approval and Promulgation of Implementation Plans*, 40 CFR Part 52, Subpart A, §52.21, *Prevention of Significant Deterioration of Air Quality* rule. Greenhouse gases, as defined in 06-096 CMR 100 (as amended), are the aggregate group of the following gases: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. For licensing purposes, greenhouse gases (GHG) are calculated and reported as carbon dioxide equivalents (CO₂e).

The quantity of CO₂e emissions from this facility is greater than 100,000 tons per year, based on the following:

- the facility's operational limits;
- worst case emission factors from the following sources: U.S. EPA's AP-42, the Intergovernmental Panel on Climate Change (IPCC), and 40 CFR Part 98, *Mandatory Greenhouse Gas Reporting*; and
- global warming potentials contained in 40 CFR Part 98.

As defined in 06-096 CMR 100, any source emitting 100,000 tons/year or more of CO₂e is a major source for GHG. MWP's license includes applicable requirements addressing GHG emissions from this source, as appropriate.

III. AMBIENT AIR QUALITY ANALYSIS

MWP previously submitted an ambient air quality analysis demonstrating that emissions from the facility, in conjunction with all other sources, do not violate ambient air quality standards (A-989-71-E-A). An additional ambient air quality analysis is not required for this NSR license.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants New Source Review License Amendment A-989-77-2-A pursuant to the preconstruction licensing requirements of 06-096 C.M.R. ch. 115 and subject to the specific conditions below.

Severability. The invalidity or unenforceability of any provision of this License or part thereof shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

SPECIFIC CONDITIONS

(1) Thermal Oil Backup and Generator #1

A. The Thermal Oil Backup and Generator #1 shall each be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [06-096 C.M.R. ch. 115, BACT]

B. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BACT]:

Unit	PM (lb/hr)	PM₁₀ (lb/hr)	SO₂ (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Thermal Oil Backup	0.24	0.24	–	3.40	0.73	0.27
Generator #1	0.54	0.54	–	7.72	1.66	0.61

C. Visible emissions from the Thermal Oil Backup and Generator #1 shall each not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

D. The Thermal Oil Backup and Generator #1 shall each meet the applicable requirements of 40 C.F.R. Part 60, Subpart IIII, including the following:

1. **Manufacturer Certification**

The engines shall be certified by the manufacturer as meeting the emission standards for new nonroad compression ignition engines found in § 60.4202. [40 C.F.R. § 60.4205(b)]

2. **Ultra-Low Sulfur Fuel**

The fuel fired in the engines shall not exceed 15 ppm sulfur (0.0015% sulfur). Compliance with the fuel sulfur content limit shall be based on fuel records from the supplier documenting the type of fuel delivered and the sulfur content of the fuel. [40 C.F.R. § 60.4207(b) and 06-096 C.M.R. ch. 115]

3. **Non-Resettable Hour Meter**

A non-resettable hour meter shall be installed and operated on each engine. [40 C.F.R. § 60.4209(a)]

4. **Annual Time Limit for Maintenance and Testing**

a. As emergency engines, the units shall each be limited to 100 hours/year for maintenance checks and readiness testing, emergency demand response, and periods of voltage or frequency deviation from standards. Up to 50 hours/year of the 100 hours/year may be used in non-emergency

situations (this does not include peak shaving, demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity). These limits are based on a calendar year. Compliance shall be demonstrated by records (electronic or written log) of all engine operating hours. [40 C.F.R. § 60.4211(f) and 06-096 C.M.R. ch. 115]

- b. MWP shall keep records that include maintenance conducted on each engine and the hours of operation of each engine recorded through the non-resettable hour meter. Documentation shall include the number of hours each unit operated for emergency purposes, the number of hours each unit operated for non-emergency purposes, and the reason each engine was in operation during each time. [40 C.F.R. § 60.4214(b)]

5. Operation and Maintenance

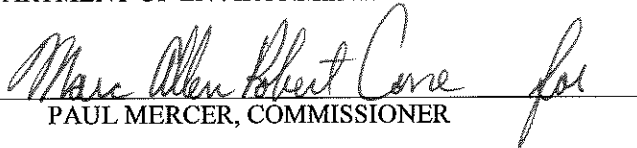
The engines shall be operated and maintained according to the manufacturer's emission-related written instructions or procedures developed by MWP that are approved by the engine manufacturer. MWP may only change those emission-related settings that are permitted by the manufacturer. [40 C.F.R. § 60.4211(a)]

- (2) MWP shall submit an application to incorporate this NSR license into the facility's Part 70 air emission license no later than 12 months from commencing operation of the cogeneration facility. [06-096 C.M.R. ch. 140 § 1(C)(8)]

DONE AND DATED IN AUGUSTA, MAINE THIS 16 DAY OF May, 2017.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:


PAUL MERCER, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 2/22/17

Date of application acceptance: 2/28/17

Date filed with the Board of Environmental Protection:

This Order prepared by Lynn Muzzey, Bureau of Air Quality.

