



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
17 STATE HOUSE STATION AUGUSTA, MAINE 04333-0017

DEPARTMENT ORDER

**Fiber Materials Inc.  
York County  
Biddeford, Maine  
A-262-71-AF-R/A**

**Departmental  
Findings of Fact and Order  
Air Emission License  
Renewal with Amendment**

**FINDINGS OF FACT**

After review of the air emission license renewal 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 (Department) finds the following facts:

**I. REGISTRATION**

**A. Introduction**

Fiber Materials Inc. (FMI) has applied to renew an Air Emission License for the operation of emission sources associated with their carbon composite manufacturing facility.

The equipment addressed in this license is located at 5 Morin Street, Biddeford, Maine.

FMI has requested an amendment to their license in order to permit the installation of a spray booth.

**B. Emission Equipment**

The following equipment is addressed in this air emission license:

**Boilers**

<b>Equipment</b>	<b>Max. Capacity (MMBtu/hr)</b>	<b>Maximum Firing Rate (scf/hr)</b>	<b>Fuel Type</b>	<b>Date of Install.</b>
Boiler #1	1.7	1,703	natural gas	2000
Boiler #4a	1.2	1,132	natural gas	2017
Boiler #4b	1.2	1,132	natural gas	2017

### Generators

Equipment	Output (kW)	Max. Input Capacity (MMBtu/hr)	Firing Rate (gal/hr)	Fuel Type	Manf. Date
Bldg 2 Generator	100	1.1	7.9	distillate fuel	2006
Bldg 3 Generator	200	2.3	16.8	distillate fuel	2005
Bldg 1-2-6 Generator	400	3.7	27.3	distillate fuel	2014

### Process Equipment

Equipment	Number of Units	Control Device
Impregnation Vessels	10 pair	Condenser/Coalescent Filters
Atmospheric Carbonizers 1-3	3	Incinerator #3
Atmospheric Carbonizers 4-6	3	Incinerator #9
Silicon Carbide Carbonizer (ACCU-2)	1	N/A
Douglas Impregnator/Carbonizers	2	Condensers, Filters, & Incinerator #3
Hot Isostatic Press Vessels (HIP 2, 3, and 4)	3	Wet Scrubber
Hot Isostatic Press Vessels (HIP 6 and 7)	2	Catch-Can & Wet Scrubber
Hot Isostatic Press Vessel (HIP 8)	1	Catch-Can & Wet Scrubber
A/B Graphitizers	7	Incinerator #2
G/F Graphitizers	6	Incinerator #1
H Graphitizers	3	Incinerator #1
B1 Retort Oven	1	Incinerator #5
C1 Retort Oven <sup>1</sup>	1	Incinerator #10
Drying Oven	1	N/A
Machine Shops	Misc.	Dust Collection Systems
Parts Washers	2	N/A
Spray Booth	1	Filters

<sup>1</sup> Formerly named S1 Retort Oven

FMI also has other small boilers not listed in the table above. These are considered insignificant emissions units because they are each rated below 1.0 MMBtu/hr, the heat input capacity level at or above which would require their inclusion in the license; therefore, these small boilers are not addressed further in this license.

FMI may operate small stationary engines smaller than 0.5 MMBtu/hr. These engines are considered insignificant activities and are not required to be included in this license. However, they are still subject to applicable State and Federal regulations. More

information regarding requirements for small stationary engines is available on the Department's website at the link below.

<http://www.maine.gov/dep/air/publications/docs/SmallRICEGuidance.pdf>

Additionally, FMI may operate portable engines used for maintenance or emergency-only purposes. These engines are considered insignificant activities and are not required to be included in this license. However, they may still be subject to applicable State and Federal regulations.

#### C. Definitions

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.

Portable or Non-Road Engine means an internal combustion engine which is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform. This definition does NOT include engines which remain or will remain at a location (excluding storage locations) for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. Any engine that replaces an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period.

An engine is not a non-road (portable) engine if it remains or will remain at a location for more than 12 consecutive months or for a shorter period of time if sited at a seasonal source. A seasonal source is a source that remains in a single location for two years or more and which operates for fewer than 12 months in a calendar year. If an engine operates at a seasonal source for one entire season, the engine does not meet the criteria of a non-road (portable) engine and is subject to applicable stationary engine requirements.

Records or Logs mean either hardcopy or electronic records.

#### D. Application Classification

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

FMI has applied to renew currently licensed emission units as well as amend their license to add a spray booth.

The modification of a minor source is considered a major or minor modification based on whether or not expected emission increases exceed the “Significant Emissions” levels as defined in the Department’s *Definitions Regulation*, 06-096 Code of Maine Rules (C.M.R.) ch. 100. The emission increases are determined by subtracting the current licensed annual emissions preceding the modification from the maximum future licensed annual emissions.

FMI proposes to include emissions from the new paint booth in the current facility-wide emission limits for VOC and HAP resulting in no increase in licensed emissions of any pollutant. Therefore, this license is considered to be both a renewal and a minor modification and has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 Code of Maine Rules C.M.R. ch. 115.

#### E. Facility Classification

With the annual facility limits on volatile organic compounds (VOC) and hazardous air pollutants (HAP) and the operating hours restriction on the emergency generators, the facility is licensed as follows:

- As a synthetic minor source of air emissions for criteria pollutants, because FMI is subject to license restrictions that keep facility emissions below major source thresholds for VOC; and
- As an area source of hazardous air pollutants (HAP), because the licensed emissions are below the major source thresholds for HAP.

## 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.

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

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;

- the effectiveness of available alternatives for reducing emissions from the source being considered; and
- the economic feasibility for the type of establishment involved.

**B. Process Overview**

FMI produces carbon fiber composite parts. Production of the parts consists of a four-step process: weaving, impregnation, carbonization, and graphitization.

In the weaving step, carbon fiber yarn is hand-woven to create forms that make up the basic structure of each part. The weaving process does not generate any emissions of regulated air pollutants.

Following weaving, the completed carbon fiber forms (also known as “billets”) are impregnated with coal tar pitch in a pair of impregnation vessels. One vessel in the pair is filled with coal tar pitch which is electrically heated to melt the pitch and reduce its viscosity. The other vessel in the pair contains the billet to be impregnated. It is heated to a similar temperature, and the air is evacuated from the vessel containing the billet. The pitch is pumped from the melting vessel into the evacuated vessel, thereby impregnating the billet with coal tar pitch.

The billets then enter the carbonization stage which converts the coal tar pitch to carbon coke. Atmospheric Carbonizers are electrically heated in a nitrogen environment at atmospheric pressure.

As an alternative to the atmospheric carbonization process, some billets are processed using the Hot Isostatic Press (HIP) system. The billets are placed in a large electric furnace which is then placed in an autoclave.

The billets, which are now covered in carbon, go through a graphitization process where the disordered carbon atoms undergo a structural change to create pure graphite. The process must occur at high temperatures to allow the chaotic carbon atoms to travel to form ideal and homogenous graphite layers. The graphitizers are electric induction furnaces. The graphitizers are continuously purged with nitrogen to prevent oxidation of the carbon and/or graphite.

In addition to the standard carbon-carbon composite part production described above, FMI produces billets using a rayon carbon precursor raw material. The rayon cellulosic fibers are converted to carbon in the Bachman (B1) Retort Oven before being converted from carbon to graphite in one of the graphitizers. The resulting graphite is ground and mixed with a phenolic resin, ethylene glycol, hexamethylenetetramine, and water to produce a slurry. The slurry is cast into specific shapes by pouring it into molds then drawing out the water using a vacuum pump and heat. The part is then returned to the graphitizer to convert the remaining phenolic resin into graphite.

The completed billets can undergo a number of post-production steps including machining, CNC (computer numerical control) cutting, and ceramic coating. The application of a ceramic coating occurs in the Ceramics Processing Area (CPA) and uses a silicon carbide ceramic precursor coating which is applied manually and will be spray-applied in the proposed spray booth. The coating is cured in the ACCU-2 Silicon Carbide Carbonizer or one of the smaller electrically driven CPA ovens. The coating provides a protective barrier on the parts to prevent corrosion, erosion, or thermal destruction.

C. Boilers #1, #4a, and #4b

FMI operates Boilers #1, #4a, and #4b for facility heating. Boiler #1 is rated at 1.7 MMBtu/hr, and Boilers #4a and #4b are each rated at 1.2 MMBtu/hr. All three boilers fire natural gas.

1. BPT Findings

The BPT emission limits for Boilers #1, #4a, and #4b were based on the following:

PM/PM<sub>10</sub>/PM<sub>2.5</sub> – 0.05 lb/MMBtu based on 06-096 C.M.R. ch. 115, BPT  
SO<sub>2</sub> – 0.6 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98  
NO<sub>x</sub> – 100 lb/MMscf based on AP-42 Table 1.4-1 dated 7/98  
CO – 84 lb/MMscf based on AP-42 Table 1.4-1 dated 7/98  
VOC – 5.5 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98  
Visible – 06-096 C.M.R. ch. 101  
Emissions

The BPT emission limits for Boilers #1, #4a, and #4b are the following:

Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	PM <sub>2.5</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1	0.09	0.09	0.09	–	0.17	0.14	0.01
Boiler #4a	0.06	0.06	0.06	–	0.11	0.10	0.01
Boiler #4b	0.06	0.06	0.06	–	0.11	0.10	0.01

2. Visible Emissions

Visible emissions from Boilers #1, #4a, and #4b each shall not exceed 10% opacity on a six-minute block average basis.

3. New Source Performance Standards (NSPS): 40 C.F.R. Part 60, Subpart Dc

Due to their size, Boilers #1, #4a, and #4b are not subject to *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* 40 C.F.R.

Part 60, Subpart Dc for units greater than 10 MMBtu/hr manufactured after June 9, 1989. [40 C.F.R. § 60.40c]

4. National Emission Standards for Hazardous Air Pollutants (NESHAP): 40 C.F.R. Part 63, Subpart JJJJJ

Boilers #1, #4a, and #4b are not subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*, 40 C.F.R. Part 63, Subpart JJJJJ. Natural gas-fired units are exempt from the requirements of this regulation. [40 C.F.R. §§63.11195(e)]

D. Bldg 2 Generator and Bldg 3 Generator

Bldg 2 Generator and Bldg 3 Generator are emergency generators with each generator set consisting of an engine and an electrical generator. The generators have engines rated at 1.1 MMBtu/hr and 2.3 MMBtu/hr, respectively, firing distillate fuel. Both of these generators were manufactured and installed prior to April 1, 2006.

1. BPT Findings

The BPT emission limits for the generators are based on the following:

PM/PM <sub>10</sub> /PM <sub>2.5</sub>	–	0.12 b/MMBtu from 06-096 C.M.R. ch. 115, BPT
SO <sub>2</sub>	–	Combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)
NO <sub>x</sub>	–	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
Visible Emissions	–	06-096 C.M.R. ch. 101

The emission limits for Bldg 2 Generator and Bldg 3 Generator are the following:

Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	PM <sub>2.5</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Bldg 2 Generator	0.13	0.13	0.13	–	4.76	1.03	0.38
Bldg 3 Generator	0.28	0.28	0.28	–	10.14	2.19	0.81

Visible emissions from each of the emergency generators (Bldg 2 Generator and Bldg 3 Generator) shall not exceed 20% opacity on a six-minute block average basis except for periods of startup during which time FMI shall either meet the normal operating visible emissions standard or the following work practice standards and alternative visible emissions standard.

- a. The duration of the startup shall not exceed 30 minutes per event;
- b. Visible emissions shall not exceed 50% opacity on a six-minute block average basis; and
- c. FMI shall keep records of the date, time, and duration of each startup.

Use of the work practice standards and alternative visible emissions standard in lieu of the normal operating standard is limited to no more than once per day.

Note: This does not limit the engine to one startup per day. It only limits the use of the alternative emission standard to once per day.

2. Chapter 169

Bldg 2 Generator and Bldg 3 Generator were installed prior to the effective date of *Stationary Generators*, 06-096 C.M.R. ch. 169 and are therefore exempt from this rule pursuant to section 1.

3. New Source Performance Standards (NSPS)

Due to the dates of manufacture of the compression ignition emergency engines listed above, the engines are not subject to the New Source Performance Standards (NSPS) *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE)*, 40 C.F.R. Part 60, Subpart IIII, since the units were manufactured prior to April 1, 2006. [40 C.F.R. § 60.4200]

4. National Emission Standards for Hazardous Air Pollutants (NESHAP):  
40 C.F.R. Part 63, Subpart ZZZZ

*National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 C.F.R. Part 63, Subpart ZZZZ is applicable to the emergency engines listed above. The units are considered existing, emergency stationary reciprocating internal combustion engines at an area HAP source and are not subject to New Source Performance Standards regulations. EPA's August 9, 2010 memo (*Guidance Regarding Definition of Residential, Commercial, and Institutional Emergency Stationary RICE in the NESHAP for Stationary RICE*) specifically does not exempt these units from the federal requirements. [40 C.F.R. § 63.6585]

A summary of the currently applicable federal 40 C.F.R. Part 63, Subpart ZZZZ requirements is listed below.



a. Emergency Engine Designation and Operating Criteria

Under 40 C.F.R. Part 63, Subpart ZZZZ, a stationary reciprocating internal combustion engine (RICE) is considered an **emergency** stationary RICE (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 63, Subpart ZZZZ, 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;
- 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 RICE 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.

Bldg 2 Generator and Bldg 3 Generator shall be limited to the usage outlined in 40 C.F.R. § 63.6640(f) and therefore may be classified as existing emergency stationary RICE as defined in 40 C.F.R. Part 63, Subpart ZZZZ. Failure to comply with all of the requirements listed in 40 C.F.R. § 63.6640(f) may cause these engines to not be considered emergency engines and therefore subject to all applicable requirements for non-emergency engines.

b. 40 C.F.R. Part 63, Subpart ZZZZ Requirements

(1) Operation and Maintenance Requirements  
[40 C.F.R. § 63.6603(a) and Table 2(d)]

	Operating Limitations
Compression ignition (distillate fuel) units: Bldg 2 Generator Bldg 3 Generator	<ul style="list-style-type: none"><li>- Change oil and filter every 500 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;</li><li>- Inspect the air cleaner every 1,000 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; and</li><li>- Inspect all hoses and belts every 500 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary.</li></ul>

The engines shall be operated and maintained according to the manufacturer's emission-related written instructions, or FMI shall develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engines in a manner consistent with good air pollution control practice for minimizing emissions. [40 C.F.R. § 63.6625(e)]

(2) Optional Oil Analysis Program

FMI has the option of utilizing an oil analysis program which complies with the requirements of § 63.6625(i) in order to extend the specified oil change requirement. If this option is used, FMI must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil

changes for each engine. The analysis program must be part of the maintenance plan for each engine. [40 C.F.R. § 63.6625(i)]

(3) Non-Resettable Hour Meter Requirement

A non-resettable hour meter shall be installed and operated on each engine. [40 C.F.R. § 63.6625(f)]

(4) Startup Idle and Startup Time Minimization Requirements

During periods of startup the facility must minimize the engine's time spent at idle and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes. [40 C.F.R. § 63.6625(h) and 40 C.F.R. Part 63, Subpart ZZZZ Table 2d]

(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. § 63.6640(f)]

(6) Recordkeeping

FMI 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. § 63.6655(f)]

E. Bldg 1-2-6 Generator

Bldg 1-2-6 Generator is an emergency generator consisting of an engine and an electrical generator. It has an engine rated at 3.7 MMBtu/hr, which fires distillate fuel. It was manufactured in 2014.

1. BPT Findings

The BPT emission limits for the Bldg 1-2-6 Generator are based on the following:

PM/PM <sub>10</sub> /PM <sub>2.5</sub>	– 0.12 b/MMBtu from 06-096 C.M.R. ch. 103
SO <sub>2</sub>	– Combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)
NO <sub>x</sub>	– 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  
Visible – 06-096 C.M.R. ch. 101  
Emissions

The BPT emission limits for the Bldg 1-2-6 Generator are the following:

Unit	Pollutant	lb/MMBtu
Bldg 1-2-6 Generator	PM	0.12

Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	PM <sub>2.5</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Bldg 1-2-6 Generator	0.45	0.45	0.45	0.01	16.49	3.55	1.31

Visible emissions from the Bldg 1-2-6 Generator shall not exceed 20% opacity on a six-minute block average basis.

2. Chapter 169

The Bldg 1-2-6 Generator was installed prior to the effective date of *Stationary Generators*, 06-096 C.M.R. ch. 169 and is therefore exempt from this rule pursuant to section 1.

3. New Source Performance Standards

*Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*, 40 C.F.R. Part 60, Subpart IIII is applicable to the Bldg 1-2-6 Generator since the unit was 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 unit(s) also meet(s) 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 IIII requirements is listed below.

a. Emergency Engine Designation and Operating Criteria

Under 40 C.F.R. Part 60, Subpart IIII, 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 IIII, 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;
- 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 IIII Requirements**

**(1) Manufacturer Certification Requirement**

The engine 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)]

**(2) Ultra-Low Sulfur Fuel Requirement**

The fuel fired in the engine 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 the engine. [40 C.F.R. § 60.4209(a)]

**(4) Operation and Maintenance Requirements**

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

FMI shall have available for review by the Department a copy of the manufacturer's emission-related written instructions for engine operation and maintenance. [06-096 C.M.R. ch. 115, BPT]

**(5) Annual Time Limit for Maintenance and Testing**

As an emergency engine, the unit shall 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**

FMI shall keep records that include the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the number of hours the unit operated for emergency purposes, the number of

hours the unit operated for non-emergency purposes, and the reason the engine was in operation during each time. [40 C.F.R. § 60.4214(b)]

**F. Impregnation Vessels**

FMI is licensed to operate 10 pairs of impregnation vessels. They are exhausted via a vacuum pump and emit volatiles from coal tar pitch as well as very small amounts of carbon monoxide (CO). The coal tar pitch volatiles contain both VOC and HAP. The heat for the impregnation vessels is electric.

**1. Control Equipment**

Hydrocarbon exhaust emissions from the vacuum pump are controlled by a condenser followed by a coalescent filter, with a 99.9% overall collection and control efficiency. The condenser is a chamber with baffle plates, trapping hydrocarbons which are driven off from the pitch. The coalescent filter captures oil fumes generated in the vacuum pump. Both the condenser and filter are drained periodically.

**2. BPT**

A BACT analysis conducted in 2023 found that use of the condensing trap vessel and coalescent filter on each impregnation vessel and compliance with the facility-wide limits for VOC and HAP to represent BACT for control of emissions from the impregnation vessels. This control methodology is determined to represent BPT.

Visible emissions from each impregnation vessel vent shall not exceed 10% opacity on a six-minute block average basis.

FMI shall maintain a log of the date and details of any repairs or maintenance (planned or unplanned) performed on the condenser and coalescent filter including dates of routine draining of the condensate.

**G. Atmospheric Carbonizers**

The parts are brought to the carbonization stage after impregnation. FMI operates six atmospheric carbonizers (Atmospheric Carbonizers 1-6). The pitch-impregnated billets are heated in a nitrogen environment for a period of time. Then, the billets are cooled over a day and a half. This process converts the material to a dense coke. The carbonization process releases hydrogen, methane, and hydrocarbon vapors containing both VOC and HAP.

**1. Control Equipment**

Emissions from the carbonizers are controlled by thermal incinerators. Atmospheric Carbonizers 1-3 are controlled by Incinerator #3, and Atmospheric Carbonizers 4-6 are controlled by Incinerator #9. Each incinerator is rated to have a greater than 99.9% control efficiency.

Incinerator #3 is operated at a temperature of 1,600 °F throughout the carbonization cycle and has a minimum retention time of 1.0 second. It has one chamber, and the burner is rated at 1.7 MMBtu/hr firing natural gas. Incinerator #3 also controls emissions from the Douglas Impregnator/Carbonizers discussed later in this license.

Incinerator #9 is operated at a temperature of 1,450 °F throughout the carbonization cycle and has a minimum retention time of 1.0 second. It has one chamber, and the burner is rated at 2.0 MMBtu/hr firing natural gas.

Testing has shown that emissions from the carbonizing process drop to negligible levels after the cooling stage begins.

**2. BPT**

BPT for the atmospheric carbonizers is use of Incinerators #3 and #9 to control emissions and compliance with the facility-wide limits for VOC and HAP. This was confirmed by a BACT analysis conducted in 2021.

FMI shall record each incinerator temperature on an hourly basis when in operation.

FMI shall continuously control VOC and HAP emissions from Atmospheric Carbonizers 1-3 and Douglas Impregnator/Carbonizers #1 and #2 by the use of Incinerator #3. Upon power termination to all five carbonizer furnaces, the use of Incinerator #3 may be discontinued when the temperature of all five carbonizers drops below 110 °C (230 °F) and a minimum of eight hours has elapsed from the time the last carbonizer power was shut off.

FMI shall continuously control VOC and HAP emissions from Atmospheric Carbonizers 4-6 by the use of Incinerator #9. Upon power termination to all three carbonizer furnaces, the use of Incinerator #9 may be discontinued when the temperature of all three carbonizers drops below 110 °C (230 °F) and a minimum of eight hours has elapsed from the time the last carbonizer power was shut off.

FMI shall maintain a log of the date and details of any repairs or maintenance (planned or unplanned) performed on Incinerators #3 and #9.



A pyrometer or thermocouple shall be installed and maintained at the location of the incinerator or refractory-lined stack which provides sufficient volume to ensure a flue gas retention time of not less than 1.0 second. The temperature of Incinerators #3 and #9 each shall be monitored continuously and recorded at least once hourly whenever an associated atmospheric carbonizer is in operation. FMI shall keep a log for each atmospheric carbonizer detailing dates and times of operation.

A summary of the BPT analysis for Incinerators #3 and #9 is the following:

PM/PM <sub>10</sub> /PM <sub>2.5</sub>	– 0.05 lb/MMBtu based on 06-096 C.M.R. ch. 115, BPT
SO <sub>2</sub>	– 0.6 lb/MMscf based on AP-42, Table 1.4-2, dated 7/98
NO <sub>x</sub>	– 200 lb/MMscf based on twice the value in AP-42, Table 1.4-1, dated 7/98, due to the high amount of thermal NO <sub>x</sub> expected
CO	– 84 lb/MMscf based on AP-42, Table 1.4-1, dated 7/98
VOC	– 5.5 lb/MMscf based on AP-42, Table 1.4-2, dated 7/98
Visible Emissions	– 06-096 C.M.R. ch. 115, BPT

The emission limits for Incinerators #3 and #9 are the following:

Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	PM <sub>2.5</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Incinerator #3	0.09	0.09	0.09	–	0.33	0.14	0.01
Incinerator #9	0.10	0.10	0.10	–	0.39	0.16	0.01

Visible emissions from Incinerators #3 and #9 each shall not exceed 10% opacity on a six-minute block average basis.

#### H. Douglas Impregnator/Carbonizers

FMI is licensed to operate two combined impregnator/carbonizers (Douglas Impregnator/Carbonizers #1 and #2). These units perform similar operations as the impregnation vessels and atmospheric carbonizers but in a single closed system instead of individual units.

##### 1. Control Equipment

During the impregnation stage, the vessel is evacuated via a vacuum pump. Hydrocarbon exhaust emissions from the vacuum pump are controlled by a condenser followed by a coalescent filter, with a 99.9% overall collection and control efficiency. The condenser is a chamber with baffle plates, trapping hydrocarbons which are driven off from the pitch. The coalescent filter captures oil fumes generated in the vacuum pump. Both the condenser and filter are drained periodically.

During the carbonization stage, the units are controlled by thermal incineration by routing the emissions to Incinerator #3. Incinerator #3 is rated to have a greater than 99.9% control efficiency. It is operated at a temperature of 1,600 °F throughout the carbonization cycle and has a minimum retention time of 1.0 second. It has one chamber, and the burner is rated at 1.7 MMBtu/hr firing natural gas. Incinerator #3 also controls emissions from the Atmospheric Carbonizers 1-3 discussed earlier in this license.

Testing has shown that emissions from the carbonizing process drop to negligible levels after the cooling stage begins.

## **2. BPT**

BPT for each Douglas Impregnator/Carbonizer during the impregnation phase is use of the condensing trap vessel and coalescent filter and compliance with facility-wide emission limits for VOC and HAP.

BPT for each Douglas Impregnator/Carbonizer during the carbonization phase is use of Incinerator #3 to control emissions and compliance with the facility-wide limits for VOC and HAP.

Visible emissions from each Douglas Impregnator/Carbonizer shall not exceed 10% opacity on a six-minute block average basis.

FMI shall record the temperature of Incinerator #3 on an hourly basis when in operation.

FMI shall continuously control VOC and HAP emissions from Atmospheric Carbonizers 1-3 and Douglas Impregnator/Carbonizers #1 and #2 by the use of Incinerator #3. Upon power termination to all five carbonizer furnaces, the use of Incinerator #3 may be discontinued when the temperature of all five carbonizers drops below 110 °C (230 °F) and a minimum of eight hours has elapsed from the time the last carbonizer power was shut off.

FMI shall maintain a log of the date and details of any repairs or maintenance (planned or unplanned) performed on the condensers and coalescent filters associated with Douglas Impregnator/Carbonizers #1 and #2 including dates of routine draining of the condensate.

FMI shall maintain a log of the date and details of any repairs or maintenance (planned or unplanned) performed on Incinerators #3.

A pyrometer or thermocouple shall be installed and maintained at the location of the incinerator or refractory-lined stack which provides sufficient volume to ensure a flue gas retention time of not less than 1.0 second. The temperature of Incinerators #3 shall be monitored continuously and recorded at least once hourly whenever an associated atmospheric carbonizer is in operation. FMI shall keep a log for each Douglas Impregnator/Carbonizer detailing dates and times of operation.

A summary of the BPT analysis for Incinerators #3 is described in Section II(G) of this license.

**I. Silicon Carbide Carbonizer (ACCU-2)**

FMI operates an Accutherm 2 Carbonizer (ACCU-2) to cure a silicon carbide ceramic precursor coating. This coating is currently applied by hand and is proposed to be spray-applied in the new spray booth discussed later in this license.

Emissions from ACCU-2 are comprised of 99.9% hydrogen, 0.08% silane, and 0.02% cyclohexane. The use of add-on control equipment has been determined to be too dangerous due to the concentration and volatility of the hydrogen gas. BPT for ACCU-2 is to exhaust through Stack #33 and a visible emissions limit of 10% opacity on a six-minute block average basis.

**J. Hot Isostatic Press (HIP) Vessels**

FMI operates six hot isostatic press (HIP) vessels (HIP 2-4 and 6-8).

The billets are placed inside a large electric furnace, which is then placed in an autoclave. The HIP furnace heats the parts while argon is used to pressurize the vessel.

**1. Control Equipment**

In the HIP cycle, hydrocarbon gases are exhausted from the autoclave during brief pulses. The exhaust gas goes through a tremendous pressure drop, and the cooling that results causes some heavy hydrocarbons to condense out. All of the HIP vessels exhaust to a single wet scrubber. In the newer HIP vessels (HIP 6-8), a catch can is used to collect condensed hydrocarbons prior to the wet scrubber.

The wet scrubber condenses and removes the heavy hydrocarbons. The HIP Scrubber is rated at 99.9% efficiency for the collection and removal of pitch volatiles.

**2. BPT**

BPT for the HIP vessels is the use of a catch-can for HIP 6-8, use of a wet scrubber for all HIP vessels, and compliance with the facility-wide limits for VOC and HAP.

FMI shall operate the scrubber in accordance with the manufacturer's recommendations and shall maintain a minimum scrubber fluid flow rate of 3 gal/min. Compliance shall be demonstrated by records of continuous monitoring of the scrubber fluid flow rate.

Visible emissions from the HIP wet scrubber shall not exceed 10% opacity on a six-minute block average basis.

FMI shall maintain a log of the date and details of any repairs or maintenance (planned or unplanned) performed on the catch-cans and wet scrubbers including dates of routine draining of the condensate.

**K. Graphitizers**

FMI operates 16 graphitizers (seven in the A/B Graphitizer bank, six in the G/F Graphitizer bank, and three in the H Graphitizer bank). The graphitizers emit both VOC and HAP.

**1. Control Equipment**

Emissions from the graphitizers are controlled by thermal incinerators. The A/B Graphitizers are controlled by Incinerator #2, and the G/F Graphitizers and H Graphitizers are controlled by Incinerator #1. Each incinerator is rated with a control efficiency greater than 99.9%.

Each incinerator is operated at a temperature of 1,600 °F throughout the graphitization cycle and has a minimum retention time of 1.0 second. Each incinerator has one chamber with a burner rated at 1.7 MMBtu/hr firing natural gas.

**2. BPT**

BPT for the graphitizers is use of Incinerators #1 and #2 to control emissions and compliance with the facility-wide limits for VOC and HAP. This was confirmed by a BACT analysis conducted in 2021.

FMI shall record each incinerator temperature on an hourly basis when in operation.

FMI shall continuously control VOC and HAP emissions from the A/B Graphitizers by the use of Incinerator #2. FMI shall continuously control VOC and HAP emissions from the G/F Graphitizers and the H Graphitizers by the use of Incinerator #1. Upon power termination, the use of the incinerator may be discontinued when the temperature of the graphitizers drops below 1,292 °F and a minimum of 3.5 hours has elapsed from the time the graphitizer power was shut off.

FMI shall maintain a log of the date and details of any repairs or maintenance (planned or unplanned) performed on Incinerators #1 and #2.

A pyrometer or thermocouple shall be installed and maintained at the location of the incinerator or refractory-lined stack which provides sufficient volume to ensure a flue gas retention time of not less than 1.0 second. The temperature of Incinerators #1 and #2 each shall be monitored continuously and recorded at least once hourly whenever an associated atmospheric carbonizer is in operation. FMI shall keep a log for each graphitizer detailing dates and times of operation.

A summary of the BPT analysis for Incinerators #1 and #2 is the following:

PM/PM <sub>10</sub> /PM <sub>2.5</sub>	– 0.05 lb/MMBtu based on 06-096 C.M.R. ch. 115, BPT
SO <sub>2</sub>	– 0.6 lb/MMscf based on AP-42, Table 1.4-2, dated 7/98
NO <sub>x</sub>	– 200 lb/MMscf based on twice AP-42, Table 1.4-1, dated 7/98 due to the high amount of thermal NO <sub>x</sub> expected
CO	– 84 lb/MMscf based on AP-42, Table 1.4-1, dated 7/98
VOC	– 5.5 lb/MMscf based on AP-42, Table 1.4-2, dated 7/98
Visible Emissions	– 06-096 C.M.R. ch. 115, BPT

The emission limits for Incinerators #1 and #2 are the following:

Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	PM <sub>2.5</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Incinerator #1	0.09	0.09	0.09	–	0.33	0.14	0.01
Incinerator #2	0.09	0.09	0.09	–	0.33	0.14	0.01

Visible emissions from Incinerators #1 and #2 each shall not exceed 10% opacity on a six-minute block average basis.

#### L. Retort Ovens

FMI is licensed to operate two electric retort ovens (B1 and C1 Retort Ovens<sup>1</sup>). They are used to carbonize adhesives and assorted rayon materials, such as rayon felt, fiber, tow, and staple.

##### 1. Control Equipment

Emissions from the retort ovens are controlled by thermal incinerators. Emissions from the B1 Retort Oven are controlled by Incinerator #5. Emissions from the C1 Retort

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<sup>1</sup> C1 Retort Oven was previously named S1 Retort Oven.

Oven are controlled by Incinerator #10. Each incinerator is rated with a control efficiency greater than 99.9%.

Each incinerator is operated at a temperature of 1,600 °F throughout the carbonization cycle and has a minimum retention time of 1.0 second. Incinerator #5 has two chambers with a total heat input of 3.0 MMBtu/hr. Incinerator #10 has two chambers with a total heat input of 2.4 MMBtu/hr. Both incinerators fire natural gas.

## **2. BPT**

BPT for the retort ovens is use of Incinerators #5 and #10 to control emissions and compliance with the facility-wide limits for VOC and HAP. This was confirmed by a BACT analysis conducted in 2023.

FMI shall record each incinerator temperature on an hourly basis when in operation.

FMI shall continuously control VOC and HAP emissions from the B1 Retort Oven by the use of Incinerator #5. FMI shall continuously control VOC and HAP emissions from the C1 Retort Oven by the use of Incinerator #10. Upon power termination, the use of the incinerator may be discontinued when the temperature of the retort oven drops below 392 °F and a minimum of 6.5 hours has elapsed from the time the retort oven power was shut off.

FMI shall maintain a log of the date and details of any repairs or maintenance (planned or unplanned) performed on Incinerators #5 and #10.

A pyrometer or thermocouple shall be installed and maintained at the location of the incinerator or refractory-lined stack which provides sufficient volume to ensure a flue gas retention time of not less than 1.0 second. The temperature of Incinerators #5 and #10 each shall be monitored continuously and recorded at least once hourly whenever the associated retort oven is in operation. FMI shall keep a log for each retort oven detailing dates and times of operation.

A summary of the BPT analysis for Incinerators #5 and #10 is the following:

PM/PM <sub>10</sub> /PM <sub>2.5</sub>	– 0.05 lb/MMBtu based on 06-096 C.M.R. ch. 115, BPT
SO <sub>2</sub>	– 0.6 lb/MMscf based on AP-42, Table 1.4-2, dated 7/98
NO <sub>x</sub>	– 200 lb/MMscf based on twice the value in AP-42, Table 1.4-1, dated 7/98, due to the high amount of thermal NO <sub>x</sub> expected
CO	– 84 lb/MMscf based on AP-42, Table 1.4-1, dated 7/98
VOC	– 5.5 lb/MMscf based on AP-42, Table 1.4-2, dated 7/98
Visible Emissions	– 06-096 C.M.R. ch. 115, BPT

The emission limits for Incinerators #5 and #10 are the following:

Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	PM <sub>2.5</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Incinerator #5	0.15	0.15	0.15	—	0.59	0.25	0.02
Incinerator #10	0.12	0.12	0.12	—	0.47	0.20	0.01

Visible emissions from Incinerators #5 and #10 each shall not exceed 10% opacity on a six-minute block average basis.

M. Drying Oven

FMI operates one electrically powered drying oven used in the production of Fiber Form. Fiber Form is made from chopped carbon fibers mixed with phenol-formaldehyde resin and water to create a slurry. The slurry is molded into shapes by pouring it into molds then drawing out the water using a vacuum pump. The molds are then placed in the Drying Oven and heated to between 225 °F and 235 ° F.

Emissions from the Drying Oven are primarily water. Potential emissions are estimated to be less than 3.6 tons per year (tpy) for VOC and 1.6 tpy for HAP. Based on the relatively small amount of potential emissions, the use of add-on controls has been determined not to be justified.

BPT for the Drying Oven is compliance with the facility-wide limits for VOC and HAP and a visible emissions limit of 10% opacity on a six-minute block average basis.

N. Machine Shops

FMI operates three machine shops, one in Building #1, one in Building #3, and one in Building #5. Each machine shop has a variety of grinders, saws, and lathes for shaping graphite parts. The equipment produces graphite dust, which is controlled by a number of cartridge dust collectors and baghouses, each rated at 99.6% control efficiency. The dust collection systems discharge either indoors or outside depending on the facility heating or cooling needs.

BPT for the machine shops is the continued use of the cartridge filters and baghouses on the dust collection systems and a visible emissions limit of 10% opacity on a six-minute block average basis.

**O. Spray Booth**

FMI has proposed the installation of a new spray booth (Spray Booth) for the application of silicon carbide ceramic precursor coatings to produce a ceramic protective coating on parts.

FMI intends to use two main types of coating. The first is a pre-ceramic polymer that does not contain any VOC or HAP. The second is a mix of pre-ceramic polymer along with solvents and other hydrocarbons with a maximum VOC content of 61% by weight and a maximum HAP content of 30% by weight.

The Spray Booth will be located in Building #1. It will be fully contained and equipped with filters to collect coating overspray before venting outside. Emissions of particulate matter are expected to be negligible.

In conjunction with the Spray Booth, FMI intends to install a make-up air unit (MAU) designed to burn natural gas with a heat input of 0.825 MMBtu/hr. The MAU is considered an insignificant activity but is included here for completeness.

**1. BACT**

FMI submitted a BACT analysis for control of emissions from the Spray Booth.

**a. Particulate Matter (PM, PM<sub>10</sub>, PM<sub>2.5</sub>)**

FMI has proposed a complete enclosure for the Spray Booth with filters on all vents and a visible emissions limit of 10% on a six-minute block average basis. This has been determined to be BACT for control of PM/PM<sub>10</sub>/PM<sub>2.5</sub> emissions from the Spray Booth. FMI shall maintain records of the date of all filter replacements.

**b. Volatile Organic Compounds (VOC) and Hazardous Air Pollutants (HAP)**

FMI has proposed the use of high volume, low pressure (HVLP) spray guns for the Spray Booth. HVLP spray guns utilize either a compressor or a turbine to deliver a high volume of air to the spray gun at low pressure, resulting in enhanced control of the spray pattern and minimal overspray, thus achieving a transfer efficiency of around 60%.

BACT for emissions of VOC and HAP is determined to be use of HVLP spray guns and compliance with the existing facility-wide VOC and HAP limits.



2. Chapter 129

*Surface Coating Facilities*, 06-096 C.M.R. ch. 129, establishes standards for VOC and HAP from selected surface coating operations. The Spray Booth will be used to apply coating to fiber composite parts, which is not one of the surface coating categories listed in the rule's applicability section. Therefore, 06-096 C.M.R. ch. 129 does not apply to the Spray Booth.

P. Facility-Wide Emission Limits

FMI shall be limited to facility-wide emissions of 19.5 tpy of VOC on a calendar year total basis.

FMI shall be limited to facility-wide emissions of 9.9 tpy for all HAP combined on a calendar year total basis.

These are facility-wide limits. As such, emissions from all equipment and processes at the facility and addressed in the air emission license shall be included in calculations used to determine compliance with these limits including emissions from fuel burning equipment.

Compliance with the VOC and HAP emission limits shall be demonstrated by recordkeeping including the following, as applicable: fuel usage, hours of operation, material usage, and site-specific test data. Emissions from the ACCU-2 and the Douglas Impregnator/Carbonizer shall be conservatively calculated based on site-specific emission rates developed for other similar equipment (i.e., the impregnation vessels and the atmospheric carbonizers). Calculations of annual VOC and HAP emissions shall be performed at least once annually. Additional calculation of emissions to demonstrate compliance with these limits shall be performed upon request by the Department.

Q. Parts Washer

FMI operates two small solvent cleaning units (parts washers). These units are maintained by Safety Kleen, an outside vendor. The parts washers are subject to *Solvent Cleaners*, 06-096 C.M.R. ch. 130, and records shall be kept documenting compliance.

This equipment is exempt from *Industrial Cleaning Solvents*, 06-096 C.M.R. ch. 166 pursuant to Section (3)(B).

R. General Process Emissions

Visible emissions from any general process source not otherwise described shall not exceed 20% opacity on a six-minute block average basis.

S. Fugitive Emissions

FMI shall not cause emissions of any fugitive dust during any period of construction, reconstruction, or operation without taking reasonable precautions. Such reasonable precautions shall be included in the facility's continuing program of best management practices for suppression of fugitive particulate matter. See 06-096 C.M.R. ch. 101, § 4(C) for a list of potential reasonable precautions.

FMI shall not cause or allow visible emissions within 20 feet of ground level, measured as any level of opacity and not including water vapor, beyond the legal boundary of the property on which such emissions occur. Compliance with this standard shall be determined pursuant to 40 C.F.R. Part 60, Appendix A, Method 22.

T. Annual Emissions

The table below provides an estimate of facility-wide annual emissions for the purposes of calculating the facility's annual air license fee and establishing the facility's potential to emit (PTE). Only licensed equipment is included, i.e., emissions from insignificant activities are excluded. Similarly, unquantifiable fugitive particulate matter emissions are not included except when required by state or federal regulations. Maximum potential emissions were calculated based on the following assumptions:

- Operating each boiler and each incinerator for 8,760 hrs/year;
- Operating each emergency generator for 100 hrs/yr; and
- A facility-wide VOC limit of 19.5 tpy; and
- A facility-wide HAP emissions limit of 9.9 tpy for all HAP combined.

This information does not represent a comprehensive list of license restrictions or permissions. That information is provided in the Order section of this license.

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

	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC	Total HAP
Boiler #1	0.4	0.4	0.4	—	0.7	0.6	—	—
Boiler #4a	0.3	0.3	0.3	—	0.5	0.4	—	—
Boiler #4b	0.3	0.3	0.3	—	0.5	0.4	—	—
Bldg 2 Generator	—	—	—	—	0.2	0.1	—	—
Bldg 3 Generator	—	—	—	—	0.5	0.1	—	—
Bldg 1-2-6 Generator	—	—	—	—	0.8	0.2	—	—
Incinerator #1	0.4	0.4	0.4	—	1.5	0.6	—	—

	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC	Total HAP
Incinerator #2	0.4	0.4	0.4	–	1.5	0.6	–	–
Incinerator #3	0.4	0.4	0.4	–	1.5	0.6	–	–
Incinerator #5	0.7	0.7	0.7	–	2.6	1.1	–	–
Incinerator #9	0.4	0.4	0.4	–	1.7	0.7	–	–
Incinerator #10	0.5	0.5	0.5	–	2.1	0.9	–	–
Facility-Wide	–	–	–	–	–	–	19.5	9.9
<b>Total TPY</b>	<b>3.8</b>	<b>3.8</b>	<b>3.8</b>	<b>–</b>	<b>14.1</b>	<b>6.3</b>	<b>19.5</b>	<b>9.9</b>

### III. AMBIENT AIR QUALITY ANALYSIS

The level of ambient air quality impact modeling required for a minor source is determined by the Department on a case-by-case basis. In accordance with 06-096 C.M.R. ch. 115, an ambient air quality impact analysis is not required for a minor source if the total licensed annual emissions of any pollutant released do not exceed the following levels and there are no extenuating circumstances:

Pollutant	Tons/Year
PM <sub>10</sub>	25
PM <sub>2.5</sub>	15
SO <sub>2</sub>	50
NO <sub>x</sub>	50
CO	250

The total licensed annual emissions for the facility are below the emission levels contained in the table above and there are no extenuating circumstances; therefore, an ambient air quality impact analysis is not required as part of this license.

This determination is based on information provided by the applicant regarding licensed emission units. If the Department determines that any parameter (e.g., stack size, configuration, flow rate, emission rates, nearby structures, etc.) deviates from what was included in the application, the Department may require FMI to submit additional information and may require an ambient air quality impact analysis at that time.

## **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, and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-262-71-AF-R/A subject to the following conditions.

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.

### **STANDARD CONDITIONS**

- (1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions (38 M.R.S. § 347-C).
- (2) The licensee shall acquire a new or amended air emission license prior to beginning actual construction of a modification, unless specifically provided for in Chapter 115. [06-096 C.M.R. ch. 115]
- (3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [06-096 C.M.R. ch. 115]
- (4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [06-096 C.M.R. ch. 115]
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S. § 353-A. [06-096 C.M.R. ch. 115] Payment of the annual air emission license fee for FMI is due by the end of August of each year.

[38 M.R.S. § 353-A(3)]

- (6) The license does not convey any property rights of any sort, or any exclusive privilege.  
[06-096 C.M.R. ch. 115]
- (7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [06-096 C.M.R. ch. 115]
- (8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request.  
[06-096 C.M.R. ch. 115]
- (9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for a renewal of a license or amendment shall not stay any condition of the license.  
[06-096 C.M.R. ch. 115]
- (10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license.  
[06-096 C.M.R. ch. 115]
- (11) In accordance with the Department's air emission compliance test protocol and 40 C.F.R. Part 60 or other method approved or required by the Department, the licensee shall:
  - A. Perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:
    - 1. Within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions;  
or
    - 2. Pursuant to any other requirement of this license to perform stack testing.
  - B. Install or make provisions to install test ports that meet the criteria of 40 C.F.R. Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and

- C. Submit a written report to the Department within thirty (30) days from date of test completion.  
[06-096 C.M.R. ch. 115]
- (12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:
- A. Within thirty (30) days following receipt of the written test report by the Department, or another alternative timeframe approved by the Department, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 C.F.R. Part 60 or other method approved or required by the Department; and
  - B. The days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and
  - C. The licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.  
[06-096 C.M.R. ch. 115]
- (13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or license requirement. [06-096 C.M.R. ch. 115]
- (14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emissions and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation. [06-096 C.M.R. ch. 115]
- (15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and

in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status.  
[06-096 C.M.R. ch. 115]

- (16) The licensee shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (38 M.R.S. § 605). [06-096 C.M.R. ch. 115]

#### **SPECIFIC CONDITIONS**

(17) **Boilers #1, #4a, and #4b**

- A. Boilers #1, #4a, and #4b are licensed to fire only natural gas. [06-096 C.M.R. ch. 115, BPT]
- B. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BPT]:

Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	PM <sub>2.5</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1	0.09	0.09	0.09	—	0.17	0.14	0.01
Boiler #4a	0.06	0.06	0.06	—	0.11	0.10	0.01
Boiler #4b	0.06	0.06	0.06	—	0.11	0.10	0.01

- C. Visible emissions from Boilers #1, #4a, and #4b each shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 101, § 4(A)(3)]

(18) **Bldg 2 Generator and Bldg 3 Generator**

- A. The fuel sulfur content for Bldg 2 Generator and Bldg 3 Generator shall be limited to 0.0015% sulfur by weight. Compliance shall be demonstrated by fuel delivery receipts from the supplier, fuel supplier certification, certificate of analysis, or testing of the fuel in the tank on-site. [06-096 C.M.R. ch. 115, BPT]
- B. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BPT/BACT]:

Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	PM <sub>2.5</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Bldg 2 Generator	0.13	0.13	0.13	—	4.76	1.03	0.38
Bldg 3 Generator	0.28	0.28	0.28	—	10.14	2.19	0.81

- C. Visible Emissions

Visible emissions from each of the emergency generators (Bldg 2 Generator and Bldg 3 Generator) shall not exceed 20% opacity on a six-minute block average basis except

for periods of startup during which time FMI shall either meet the normal operating visible emissions standard or the following work practice standards and alternative visible emissions standard.

1. The duration of the startup shall not exceed 30 minutes per event;
2. Visible emissions shall not exceed 50% opacity on a six-minute block average basis; and
3. FMI shall keep records of the date, time, and duration of each startup.

Use of the work practice standards and alternative visible emissions standard in lieu of the normal operating standard is limited to no more than once per day.

Note: This does not limit the engine to one startup per day. It only limits the use of the alternative emission standard to once per day.

[06-096 C.M.R. ch. 101, § 4(A)(4)]

- D. Bldg 2 Generator and Bldg 3 Generator shall meet the applicable requirements of 40 C.F.R. Part 63, Subpart ZZZZ, including the following:  
[incorporated under 06-096 C.M.R. chs. 115, BPT]

1. FMI shall meet the following operational limitations for each of the compression ignition emergency engines:
  - a. Change the oil and filter every 500 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;
  - b. Inspect the air cleaner every 1,000 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; and
  - c. Inspect the hoses and belts every 500 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary.

Records shall be maintained documenting compliance with the operational limitations.

[40 C.F.R. § 63.6603(a) and Table 2(d); and 06-096 C.M.R. ch. 115]

2. Oil Analysis Program Option

FMI has the option of utilizing an oil analysis program which complies with the requirements of § 63.6625(i) in order to extend the specified oil change requirement. If this option is used, FMI must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for each engine. The analysis program must be part of the maintenance plan for each engine. [40 C.F.R. § 63.6625(i)]



**3. Non-Resettable Hour Meter**

A non-resettable hour meter shall be installed and operated on each engine. [40 C.F.R. § 63.6625(f)]

**4. Maintenance, Testing, and Non-Emergency Operating Situations**

- a. 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 to 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 logs) of all engine operating hours. [40 C.F.R. § 63.6640(f) and 06-096 C.M.R. ch. 115]
- b. FMI 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. §§ 63.6655(e) and (f)]

**5. Operation and Maintenance**

The engines shall be operated and maintained according to the manufacturer's emission-related written instructions, or FMI shall develop a maintenance plan which provides to the extent practicable for the maintenance and operation of each engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 C.F.R. § 63.6625(e)]

FMI shall have available for review by the Department a copy of the manufacturer's emission-related written instructions for engine operation and maintenance. [06-096 C.M.R. ch. 115, BPT]

**6. Startup Idle and Startup Time Minimization**

During periods of startup, the facility must minimize each engine's time spent at idle and minimize each engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes. [40 C.F.R. § 63.6625(h) & 40 C.F.R. Part 63, Subpart ZZZZ Table 2d]

**(19) Bldg 1-2-6 Generator**

- A. FMI shall keep records of all maintenance conducted on the engine associated with Bldg 1-2-6 Generator. [06-096 C.M.R. ch. 115, BPT]

B. Emissions shall not exceed the following:

Unit	Pollutant	lb/MMBtu	Origin and Authority
Bldg 1-2-6 Generator	PM	0.12	06-096 C.M.R. ch. 103, § (2)(B)(1)(a)

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

Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	PM <sub>2.5</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Bldg 1-2-6 Generator	0.45	0.45	0.45	0.01	16.49	3.55	1.31

D. Visible emissions from the Bldg 1-2-6 Generator shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

E. Bldg 1-2-6 Generator shall meet the applicable requirements of 40 C.F.R. Part 60, Subpart IIII, including the following:

[incorporated under 06-096 C.M.R. ch. 115, BPT]

1. Manufacturer Certification

The engine 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 engine shall not exceed 15 ppm sulfur (0.0015% sulfur). Compliance with the fuel sulfur content limit shall be demonstrated by fuel delivery receipts from the supplier, fuel supplier certification, certificate of analysis, or testing of the fuel in the tank on-site. [40 C.F.R. § 60.4207(b) and 06-096 C.M.R. ch. 115, BPT]

3. Non-Resettable Hour Meter

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

4. Annual Time Limit for Maintenance and Testing

a. As an emergency engine, the unit shall 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). 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, BPT]

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

**5. Operation and Maintenance**

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

FMI shall have available for review by the Department a copy of the manufacturer's emission-related written instructions for engine operation and maintenance. [06-096 C.M.R. ch. 115, BPT]

**(20) Facility-Wide Emission Limits**

- A. FMI shall not exceed an emission limit of 19.5 tons per year of VOC on a calendar year total basis. This is a facility-wide limit. As such, emissions from all equipment and processes at the facility and addressed in the air emission license shall be included in calculations used to determine compliance with this limit. [06-096 C.M.R. ch. 115, BPT]
- B. FMI shall not exceed an emission limit of 9.9 tons per year for all HAPs combined on a calendar year total basis. This is a facility-wide limit. As such, emissions from all equipment and processes at the facility and addressed in the air emission license shall be included in calculations used to determine compliance with this limit, including HAP emissions from fuel burning equipment and all other HAP emission sources. HAPs are as identified in 06-096 C.M.R. ch. 115, Appendix B and in Section 112(b) of the CAA. [06-096 C.M.R. ch. 115, BPT]
- C. Compliance with the VOC and HAP emission limits shall be demonstrated by recordkeeping including the following, as applicable: fuel usage, hours of operation, material usage, and site-specific test data. Emissions from the Silicon Carbide Carbonizer and the Douglas Impregnator/Carbonizer shall be conservatively calculated based on site-specific emission rates developed for other similar equipment (i.e., the impregnation vessels and the atmospheric carbonizers). Calculations of annual VOC and HAP emissions shall be performed at least once annually. Additional calculation of emissions to demonstrate compliance with these limits shall be performed upon request by the Department. [06-096 C.M.R. ch. 115, BPT]

**(21) Impregnation Vessels**

(includes ten pair of impregnation vessels and the impregnation stage when using the Douglas Impregnator/Carbonizer.)

- A. FMI is licensed to operate up to a total of ten pair of impregnation vessels and the Douglas Impregnator/Carbonizer. This includes the in-kind replacement of three impregnation vessels and the installation of the larger Impregnation Vessel 10. [06-096 C.M.R. ch. 115, BPT]
- B. FMI shall vent all emissions from the impregnation vessels through the associated condenser and coalescent filter. [06-096 C.M.R. ch. 115, BPT]
- C. FMI shall maintain a log of the date and details of any repairs or maintenance (planned or unplanned) performed on the condenser and coalescent filter including dates of routine draining of the condensate. [06-096 C.M.R. ch. 115, BPT]
- D. Visible emissions from each impregnation vessel vent shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]

**(22) Atmospheric Carbonizations**

(includes six atmospheric carbonizers and the carbonization stage when using the Douglas Impregnator/Carbonizer.)

- A. FMI is licensed to operate up to a total of six atmospheric carbonizers and the Douglas Impregnator/Carbonizer. [06-096 C.M.R. ch. 115, BPT]
- B. FMI shall continuously control VOC and HAP emissions from Atmospheric Carbonizers 1-3 and Douglas Impregnator/Carbonizers #1 and #2 by the use of Incinerator #3. Upon power termination to all five carbonizer furnaces, the use of Incinerator #3 may be discontinued when the temperature of all five carbonizers drops below 110 °C (230 °F) and a minimum of eight hours has elapsed from the time the last carbonizer power was shut off. [06-096 C.M.R. ch. 115, BPT]
- C. FMI shall continuously control VOC and HAP emissions from Atmospheric Carbonizers 4-6 by the use of Incinerator #9. Upon power termination to all three carbonizer furnaces, the use of Incinerator #9 may be discontinued when the temperature of all three carbonizers drops below 110 °C (230 °F) and a minimum of eight hours has elapsed from the time the last carbonizer power was shut off. [06-096 C.M.R. ch. 115, BPT]
- D. FMI shall maintain a log of the date and details of any repairs or maintenance (planned or unplanned) performed on Incinerators #3 and #9. [06-096 C.M.R. ch. 115, BPT]

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

Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	PM <sub>2.5</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Incinerator #3	0.09	0.09	0.09	—	0.33	0.14	0.01
Incinerator #9	0.10	0.10	0.10	—	0.39	0.16	0.01

- F. Atmospheric Carbonizers 1-3 and Douglas Impregnator/Carbonizers #1 and #2 shall not be operated until Incinerator #3 reaches a temperature of 1,600 °F, and Incinerator #3 shall maintain a minimum temperature of 1,600 °F at all times during a carbonation process. [06-096 C.M.R. ch. 115, BPT]
- G. Atmospheric Carbonizers 4-6 shall not be operated until Incinerator #9 reaches a temperature of 1,450 °F, and Incinerator #9 shall maintain a minimum temperature of 1,450 °F at all times during a carbonation process. [06-096 C.M.R. ch. 115, BPT]
- H. A pyrometer or thermocouple shall be installed and maintained at the location of the incinerator or refractory-lined stack which provides sufficient volume to insure a flue gas retention time of not less than 1.0 second. [06-096 C.M.R. ch. 115, BPT]
- I. The temperature of each incinerator shall be monitored continuously and recorded at least once hourly whenever any associated carbonizer is in operation.  
[06-096 C.M.R. ch. 115, BPT]
- J. FMI shall keep a log for each carbonizer detailing dates and times of operation.  
[06-096 C.M.R. ch. 115, BPT/BACT]
- K. Visible emissions from Incinerators #3 and #9 shall each not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]

(23) **Silicon Carbide Carbonizer**

- A. The Silicon Carbide Carbonizer shall exhaust to Stack #33. [06-096 CMR 115, BPT]
- B. Visible emissions from Stack #33 shall not exceed 10% opacity on a six-minute block average basis. [06-096 CMR 115, BPT]

(24) **HIP Vessels**

- A. FMI is licensed to operate up to a total of six HIP vessels (HIP Vessels 2-4 and 6-8).  
[06-096 C.M.R. ch. 115, BPT]

- B. For HIP Vessels 2-4, FMI shall control emissions from each vessel by venting emissions through the associated wet scrubber throughout each HIP cycle. [06-096 C.M.R. ch. 115, BPT]
- C. For HIP Vessels 6-8, FMI shall control emissions from each vessel by venting emissions through a catch-can and then the associated wet scrubber throughout each HIP cycle. [06-096 C.M.R. ch. 115, BPT]
- D. FMI shall operate each wet scrubber in accordance with the manufacturer's recommendations and shall maintain a minimum scrubber fluid flow rate of 3 gal/min. Compliance shall be demonstrated by records of continuous monitoring of each scrubber fluid flow rate. [06-096 C.M.R. ch. 115, BPT]
- E. FMI shall maintain a log of the date and details of any repairs or maintenance (planned or unplanned) performed on the catch-cans and wet scrubbers including dates of routine draining of the condensate. [06-096 C.M.R. ch. 115, BPT]
- F. Visible emissions from each HIP vessel shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]

**(25) Graphitizers**

(includes seven A/B Graphitizers, six G/F Graphitizers, and three H Graphitizers.)

- A. FMI is licensed to operate up to a total of 16 graphitizers. [06-096 C.M.R. ch. 115, BPT]
- B. FMI shall continuously control VOC and HAP emissions from A/B Graphitizers whenever operated by the use of Incinerator #2. Upon power termination to all A/B Graphitizers, the use of the incinerator may be discontinued when the temperature of the graphitizers drops below 1,292 °F and a minimum of 3.5 hours has elapsed from the time the graphitizer power was shut off. [06-096 C.M.R. ch. 115, BPT]
- C. FMI shall continuously control VOC and HAP emissions from G/F Graphitizers and H Graphitizers whenever operated by the use of Incinerator #1. Upon power termination to all G/F Graphitizers and H Graphitizers, the use of the incinerator may be discontinued when the temperature of the graphitizers drops below 1,292 °F and a minimum of 3.5 hours has elapsed from the time the graphitizer power was shut off. [06-096 C.M.R. ch. 115, BPT]
- D. FMI shall maintain a log of the date and details of any repairs or maintenance (planned or unplanned) performed on Incinerators #1 and #2. [06-096 C.M.R. ch. 115, BPT]

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

Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	PM <sub>2.5</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Incinerator #1	0.09	0.09	0.09	—	0.33	0.14	0.01
Incinerator #2	0.09	0.09	0.09	—	0.33	0.14	0.01

- F. A/B Graphitizers shall not be operated until Incinerator #2 reaches a temperature of 1,600 °F, and Incinerator #2 shall maintain a minimum temperature of 1,600 °F at all times during the graphitizing process. [06-096 C.M.R. ch. 115, BPT]
- G. G/F Graphitizers and H Graphitizers shall not be operated until Incinerator #1 reaches a temperature of 1,600 °F, and Incinerator #1 shall maintain a minimum temperature of 1,600 °F at all times during the graphitizing process. [06-096 C.M.R. ch. 115, BPT]
- H. A pyrometer or thermocouple shall be installed and maintained at the location of the incinerator or refractory-lined stack which provides sufficient volume to ensure a flue gas retention time of not less than 1.0 second. [06-096 C.M.R. ch. 115, BPT]
- I. The temperature of each incinerator shall be monitored continuously and recorded at least once hourly whenever any associated graphitizer is in operation.  
[06-096 C.M.R. ch. 115, BPT]
- J. FMI shall keep a log for each graphitizer detailing dates and times of operation.  
[06-096 C.M.R. ch. 115, BPT]
- K. Visible emissions from Incinerators #1 and #2 shall each not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]

**(26) Retort Ovens**

- A. FMI is licensed to operate up to a total of two retort ovens (B1 and C1 Retort Ovens).  
[06-096 C.M.R. ch. 115, BPT]
- B. FMI shall continuously control VOC and HAP emissions from the B1 Retort Oven by the use of Incinerator #5. Upon power termination to B1 Retort Oven, the use of the incinerator may be discontinued when the temperature of the retort oven drops below 392 °F and a minimum of 6.5 hours has elapsed from the time the power to the B1 Retort Oven was shut off. [06-096 C.M.R. ch. 115, BPT]
- C. FMI shall continuously control VOC and HAP emissions from the C1 Retort Oven by the use of Incinerator #10. Upon power termination to C1 Retort Oven, the use of the incinerator may be discontinued when the temperature of the retort oven drops below

392 °F and a minimum of 6.5 hours has elapsed from the time the power to the C1 Retort Oven was shut off. [06-096 C.M.R. ch. 115, BPT]

D. FMI shall maintain a log of the date and details of any repairs or maintenance (planned or unplanned) performed on Incinerators #5 and #10.  
[06-096 C.M.R. ch. 115, BPT]

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

<b>Unit</b>	<b>PM (lb/hr)</b>	<b>PM<sub>10</sub> (lb/hr)</b>	<b>PM<sub>2.5</sub> (lb/hr)</b>	<b>SO<sub>2</sub> (lb/hr)</b>	<b>NO<sub>x</sub> (lb/hr)</b>	<b>CO (lb/hr)</b>	<b>VOC (lb/hr)</b>
Incinerator #5	0.15	0.15	0.15	–	0.59	0.25	0.02
Incinerator #10	0.12	0.12	0.12	–	0.47	0.20	0.01

F. B1 Retort Oven shall not be operated until Incinerator #5 reaches a temperature of 1,600 °F, and Incinerator #5 shall maintain a minimum temperature of 1,600 °F at all times the B1 Retort Oven is in operation. [06-096 C.M.R. ch. 115, BPT]

G. C1 Retort Oven shall not be operated until Incinerator #10 reaches a temperature of 1,600 °F, and Incinerator #10 shall maintain a minimum temperature of 1,600 °F at all times the C1 Retort Oven is in operation. [06-096 C.M.R. ch. 115, BPT]

H. For both Incinerators #5 and #10, a pyrometer or thermocouple shall be installed and maintained at the location of the incinerator or refractory-lined stack which provides sufficient volume to ensure a flue gas retention time of not less than 1.0 second at 1,600 °F. [06-096 C.M.R. ch. 115, BPT]

I. The temperature of each incinerator shall be monitored continuously and recorded at least once hourly whenever any associated retort oven is in operation.  
[06-096 C.M.R. ch. 115, BPT]

J. FMI shall keep a log for each retort oven detailing dates and times of operation.  
[06-096 C.M.R. ch. 115, BPT]

K. Visible emissions from Incinerators #5 and #10 shall each not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]

**(27) Drying Oven**

Visible emissions from the Drying Oven shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]



(28) **Machine Shops**

- A. Any dust collection system that vents outside of an enclosed building shall use a cartridge filter or baghouse to control emissions of particulate matter. [06-096 C.M.R. ch. 115, BPT]
- B. FMI shall maintain a log of the date and details of any repairs or maintenance (planned or unplanned) performed on the cartridge filters and baghouses including filter/bag replacements. [06-096 C.M.R. ch. 115, BPT]
- C. Visible emissions from any dust collection system that vents outside of an enclosed building shall each not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]

(29) **Spray Booth**

- A. FMI shall use only HVLP spray guns in the Spray Booth. [06-096 C.M.R. ch. 115, BACT]
- B. Visible emissions from the Spray Booth shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]
- C. FMI shall maintain a log of the dates the filters on the Spray Booth are replaced. [06-096 C.M.R. ch. 115, BACT]

(30) **Parts Washers**

Parts washers at FMI are subject to *Solvent Cleaners*, 06-096 C.M.R. ch. 130.

- A. FMI shall keep records of the amount of solvent added to each parts washer. [06-096 C.M.R. ch. 115, BPT]
- B. The following are exempt from the requirements of 06-096 C.M.R. ch. 130 [06-096 C.M.R. ch. 130]:
  - 1. Solvent cleaners using less than two liters (68 oz.) of cleaning solvent with a vapor pressure of 1.00 mmHg, or less, at 20° C (68° F);
  - 2. Wipe cleaning; and,
  - 3. Cold cleaning machines using solvents containing less than or equal to 5% VOC by weight.

C. The following standards apply to cold cleaning machines that are applicable sources under 06-096 C.M.R. ch. 130.

1. FMI shall attach a permanent conspicuous label to each unit summarizing the following operational standards:
    - a. Waste solvent shall be collected and stored in closed containers.
    - b. Cleaned parts shall be drained of solvent directly back to the cold cleaning machine by tipping or rotating the part for at least 15 seconds or until dripping ceases, whichever is longer.
    - c. Flushing of parts shall be performed with a solid solvent spray that is a solid fluid stream (not a fine, atomized or shower type spray) at a pressure that does not exceed 10 psig. Flushing shall be performed only within the freeboard area of the cold cleaning machine.
    - d. The cold cleaning machine shall not be exposed to drafts greater than 40 meters per minute when the cover is open.
    - e. Sponges, fabric, wood, leather, paper products and other absorbent materials shall not be cleaned in the parts washer.
    - f. When a pump-agitated solvent bath is used, the agitator shall be operated to produce no observable splashing of the solvent against the tank walls or the parts being cleaned. Air agitated solvent baths may not be used.
    - g. Spills during solvent transfer shall be cleaned immediately. Sorbent material used to clean spills shall then be immediately stored in covered containers.
    - h. Work area fans shall not blow across the opening of the parts washer unit.
    - i. The solvent level shall not exceed the fill line.
  2. The remote reservoir cold cleaning machine shall be equipped with a perforated drain with a diameter of not more than six inches.
  3. Each parts washer shall be equipped with a cover that shall be closed at all times except during cleaning of parts or the addition or removal of solvent.
- [06-096 C.M.R. ch. 130]

**(31) General Process Sources**

Visible emissions from any general process source shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 101, § 4(B)(4)]

**(32) Fugitive Emissions**

- A. FMI shall not cause emissions of any fugitive dust during any period of construction, reconstruction, or operation without taking reasonable precautions. Such reasonable precautions shall be included in the facility's continuing program of best management practices for suppression of fugitive particulate matter. See 06-096 C.M.R. ch. 101, § 4(C) for a list of potential reasonable precautions.

B. FMI shall not cause or allow visible emissions within 20 feet of ground level, measured as any level of opacity and not including water vapor, beyond the legal boundary of the property on which such emissions occur. Compliance with this standard shall be determined pursuant to 40 C.F.R. Part 60, Appendix A, Method 22.

[06-096 C.M.R. ch. 101, § 4(C)]

- (33) If the Department determines that any parameter value pertaining to construction and operation of the emissions units, including but not limited to stack size, configuration, flow rate, emission rates, nearby structures, etc., deviates from what was submitted in the application or ambient air quality impact analysis for this air emission license, FMI may be required to submit additional information. Upon written request from the Department, FMI shall provide information necessary to demonstrate AAQS will not be exceeded, potentially including submission of an ambient air quality impact analysis or an application to amend this air emission license to resolve any deficiencies and ensure compliance with AAQS. Submission of this information is due within 60 days of the Department's written request unless otherwise stated in the Department's letter.

[06-096 C.M.R. ch. 115, § 2(O)]

DONE AND DATED IN AUGUSTA, MAINE THIS 6<sup>th</sup> DAY OF FEBRUARY, 2025.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: \_\_\_\_\_ for  
MELANIE LOYZIM, COMMISSIONER

**The term of this license shall be ten (10) years from the signature date above.**

[Note: If a renewal application, determined as complete by the Department, is submitted prior to expiration of this license, then pursuant to Title 5 M.R.S. § 10002, all terms and conditions of the license shall remain in effect until the Department takes final action on the license renewal application.]

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 1/22/2024

Date of application acceptance: 1/23/2024

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