



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



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GOVERNOR

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

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

**FINDINGS OF FACT**

After review of the air emissions license application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes Annotated (M.R.S.A.), §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 their Air Emission License permitting 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.

B. Emission Equipment

The following equipment is addressed in this air emission license:

**Boilers**

<b>Equipment</b>	<b>Maximum Capacity (MMBtu/hr)</b>	<b>Maximum Firing Rate (scf/hr)</b>	<b>Fuel Type, % sulfur</b>	<b>Install. Date</b>	<b>Stack #</b>
Boiler #1	1.67	1,641	natural gas, negligible	2000	50
Boiler #4	2.95	2,896	natural gas, negligible	1994	52

The maximum capacities of the boilers are slightly different than previously licensed. These numbers are based on actual boiler name plate information.

AUGUSTA  
17 STATE HOUSE STATION  
AUGUSTA, MAINE 04333-0017  
(207) 287-7688 FAX: (207) 287-7826  
RAY BLDG., HOSPITAL ST.

BANGOR  
106 HOGAN ROAD, SUITE 6  
BANGOR, MAINE 04401  
(207) 941-4570 FAX: (207) 941-4584

PORTLAND  
312 CANCO ROAD  
PORTLAND, MAINE 04103  
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE  
1235 CENTRAL DRIVE, SKYWAY PARK  
PRESQUE ISLE, MAINE 04769  
(207) 764-0477 FAX: (207) 760-3143

**Generators**

<u>Equipment</u>	<u>Output kW</u>	<u>Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>	<u>Manf. Date</u>
Bldg 1-2 Gen	100	7.9	diesel, 0.0015%	2006
Bldg 3 Gen	200	16.8	diesel, 0.0015%	2005

**Process Equipment**

<u>Equipment</u>	<u>Number of Units</u>	<u>Control Device</u>
Impregnation Vessels	5 pair	Condenser/Coalescent Filters
Atmospheric Carbonizers	3	Incinerator #3
R&D Carbonizer	1	Incinerator #3
Silicon Carbide Carbonizer (AC 2)	1	N/A
Douglas Impregnator/Carbonizers	2	Condensers, Filters, & Incinerator #3
Hot Isostatic Press (HIP) Vessels	5	Wet Scrubber
Graphitizers #22 & #23	2	Incinerator #4
A/B Graphitizers	7	Incinerator #2
D/F Graphitizers	6	Incinerator #1
GII Retort Oven	1	Incinerator #7
D1 Retort Oven	1	Incinerator #8
Gehrich Retort Ovens	2	Incinerator #6
S1 & B1 Retort Ovens	2	Incinerator #5
Drying Ovens	4	N/A
Bldg 3 Machine Shop	Misc.	Dust Collectors
Bldg 5 Machine Shop	Misc.	Dust Collectors
Placed Fiber/Pre-preg Production	Misc.	Spray Booth Fabric Filter
Parts Washers	2	N/A

FMI also operates several small heating units and electric drying ovens that are considered insignificant activities for licensing purposes. These units are either categorically exempt or fall below the size and emission thresholds as listed in *Major and Minor Air Emission License Regulations, 06-096 CMR 115, Appendix B (as amended)*.

C. Application Classification

The application for FMI does not include the licensing of increased emissions or the installation of new or modified equipment. Therefore, the license is considered to be a renewal of currently licensed emission units only and has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 Code of Maine Rules (CMR) 115 (as amended). With the facility-wide HAP emission limits, the facility is licensed below the major source thresholds for hazardous air pollutants (HAP) and is considered an area source of 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 CMR 100 (as amended). Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

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. Boilers #1 & #4

FMI operates Boilers #1 and #4 for facility heating. The boilers are rated at 1.67 MMBtu/hr and 2.95 MMBtu/hr respectively and fire natural gas. Boiler #1 was installed in 2000 and Boiler #4 was installed in 1994. Each boiler exhausts through their own separate stack.

Due to the size of each boiler neither is subject to the New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, for units greater than 10 MMBtu/hr manufactured after June 9, 1989.

1. BPT Findings

The BPT emission limits for the boilers were based on the following:

- PM/PM<sub>10</sub> – 0.05 lb/MMBtu based on 06-096 CMR 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
- Opacity – 06-096 CMR 101

The BPT emission limits for the boilers are the following:

Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1	0.08	0.08	neg	0.16	0.14	0.01
Boiler #4	0.15	0.15	neg	0.29	0.24	0.02

Visible emissions from each boiler shall not exceed 10% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a 3 hour period.

2. 40 CFR Part 63 Subpart JJJJJ

Natural gas-fired boilers are exempt from *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* (40 CFR Part 63 Subpart JJJJJ).

C. Emergency Generators

FMI operates two emergency generators (Bldg 1-2 Gen and Bldg 3 Gen). The emergency generators are rated at 1.1 MMBtu/hr and 2.3 MMBtu/hr and fire diesel fuel with a maximum sulfur content of 0.0015% (15 ppm). Both generators were ordered 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> - 0.12 lb/MMBtu from 06-096 CMR 103
- SO<sub>2</sub> - combustion of diesel fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur)
- NO<sub>x</sub> - 4.41 lb/MMBtu from AP-42 dated 10/96
- CO - 0.95 lb/MMBtu from AP-42 dated 10/96
- VOC - 0.35 lb/MMBtu from AP-42 dated 10/96
- Opacity - 06-096 CMR 101

The BPT emission limits for the generators are the following:

Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Bldg 1-2 Gen	0.13	0.13	neg	4.76	1.03	0.38
Bldg 3 Gen	0.28	0.28	neg	10.14	2.19	0.81

Visible emissions from each of the diesel emergency generators shall not exceed 20% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a 3-hour period.

2. 40 CFR Part 63, Subpart ZZZZ

The federal regulation 40 CFR Part 63, Subpart ZZZZ, *National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines* is applicable to the emergency generators 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.

a. Emergency Definition:

Emergency stationary RICE means any stationary reciprocating internal combustion engine that meets all of the following criteria:

- (1) The stationary RICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc. There is no time limit on the use of emergency stationary RICE in emergency situations.
- (2) Paragraph (1) above notwithstanding, the emergency stationary RICE may be operated for any combination of the purposes specified below for a maximum of 100 hours per calendar year:

- (i) 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 beyond 100 hours per calendar year.
  - (ii) Emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §63.14), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.
  - (iii) Periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.
- (3) Paragraphs (1) and (2) above notwithstanding, emergency stationary RICE may be operated for up to 50 hours per calendar year in non-emergency situations. These 50 hours are counted as part of the 100 hours per calendar year for maintenance checks and readiness testing, emergency demand response, and periods of voltage deviation or low frequency, as provided in paragraph (2) above.

The 50 hours per calendar year for non-emergency situations cannot be used for peak shaving, non-emergency 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, except provided in the following paragraphs:

- (i) Prior to May 3, 2014, the 50 hours per year for non-emergency situations can be used for peak shaving or non-emergency demand response to generate income for a facility, or to otherwise supply power as part of a financial arrangement with another entity if the engine is operated as part of a peak shaving (load management program) with the local distribution system operator and the power is provided only to the facility itself or to support the local distribution center.
- (ii) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:

- (a) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.
- (b) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.
- (c) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.
- (d) The power is provided only to the facility itself or to support the local transmission and distribution system.
- (e) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

Bldg 1-2 Gen and Bldg 3 Gen shall be limited to the usage outlined in §63.6640(f) and therefore may be classified as an existing emergency stationary RICE as defined in 40 CFR Part 63, Subpart ZZZZ. Failure to comply with all of the requirements listed in §63.6640(f) may cause these engines to not be considered emergency engines and therefore subject to all the requirements for non-emergency engines.

b. 40 CFR Part 63, Subpart ZZZZ Requirements:

(1) Operation and Maintenance Requirements

	<b>Operating Limitations (40 CFR §63.6603(a) and Table 2(d))</b>
Bldg 1-2 Gen & Bldg 3 Gen	<ul style="list-style-type: none"><li>- Change oil and filter every 500 hours of operation or annually, whichever comes first;</li><li>- Inspect the air cleaner every 1000 hours of operation or annually, whichever comes first, and replace as necessary; and</li><li>- Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.</li></ul>

The generators shall be operated and maintained according to the manufacturer's emission-related written instructions or facility shall

develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR §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 the engine. The analysis program must be part of the maintenance plan for the engine. [40 CFR §63.6625(i)]

(3) Non-Resettable Hour Meter Requirement

A non-resettable hour meter shall be installed and operated on each generator. [40 CFR §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, after which time the non-startup emission limitations apply. [40 CFR §63.6625(h) & 40 CFR Part 63, Subpart ZZZZ Table 2d]

(5) Annual Time Limit for Maintenance and Testing

The generators shall each be limited to 100 hours/year for maintenance checks and readiness testing, emergency demand response, and periods of voltage or frequency deviation from standards. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, non-emergency 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 unless the conditions in §63.6640(f)(4)(ii) are met). [40 CFR §63.6640(f)]

(6) Recordkeeping

FMI shall keep records that include maintenance conducted on the generators and the hours of operation of each engine recorded through the non-resettable hour meter. Documentation shall include the hours spent for emergency operation, including what classified the operation as emergency and how many hours spent for non-emergency. If the generators are operated during a period of demand response or deviation from standard voltage or frequency, or to supply power during a non-emergency situation as part of a financial arrangement



with another entity as specified in §63.6640(f)(4)(ii), FMI shall keep records of the notification of the emergency situation, and the date, start time, and end time of generator operation for these purposes. [40 CFR §63.6655(e) and (f)]

(7) Requirements for Demand Response Availability Over 15 Hours Per Year (and greater than 100 brake hp)

If FMI operates or is contractually obligated to be available for more than 15 hours per calendar year in a demand response program, during a period of deviation from standard voltage or frequency, or supplying power during a non-emergency situation as part of a financial arrangement with another entity as specified in §63.6640(f)(4)(ii), the facility shall submit an annual report containing the information in §63.6650(h)(1)(i) through (ix). The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year. The annual report must be submitted electronically using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) ([www.epa.gov/cdx](http://www.epa.gov/cdx)). However, if the reporting form is not available in CEDRI at the time that the report is due, the written report must be submitted to the following address:

Director, Office of Ecosystem Protection  
U.S. Environmental Protection Agency  
5 Post Office Square, Suite 100  
Boston, MA 02109-3912

[40 CFR §63.6650(h)]

D. Impregnation Vessels

There are five pairs of impregnation vessels at FMI, with emissions controlled by a set of condensers followed by a set of coalescent filters. One vessel is filled with pitch and is heated to approximately 300°C to melt the pitch and reduce its viscosity to approximately the consistency of water. The other vessel in the pair, which contains the part, or "billet," to be impregnated is also heated to approximately 300°C. The air is evacuated from the vessel containing the billet, and the pitch is pumped from the melting vessel into the evacuated vessel.

The heat for the impregnation vessels is electric. The vessels are also occasionally used to vacuum dry parts after porosity testing.

*Control Equipment*

The exhaust from the vacuum pump contains hydrocarbons. 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 three foot tall chamber with baffle plates, trapping hydrocarbons which are driven off the pitch. The coalescent filter captures oil fumes generated in the vacuum pump. Both the condenser and filter are drained periodically.

*BPT*

BPT for the impregnator units is the use of the condenser/coalescent filter system. FMI shall maintain a log documenting any repairs or maintenance to the controls and the routine draining of condensate.

E. Atmospheric Carbonization

After the impregnation stage, the parts move to the carbonization stage. FMI operates three production atmospheric carbonizers and one R&D carbonizer. During carbonization, billets that have been impregnated with the pitch are heated to approximately 800°C in a nitrogen environment at atmospheric pressure. This process converts the pitch to a dense carbon coke. The carbonization process releases hydrogen, methane, and hydrocarbon vapors.

*Control Equipment*

The carbonizers are controlled by Incinerator #3 which has a 99.9% control efficiency. The incinerator is operated at a temperature of 1600°F throughout the carbonization cycle, with a minimum retention time of 1.0 second. The incinerator has two chambers and the burner is rated at 1.6 MMBtu/hr firing natural gas.

Based on testing conducted on similar process units at Intermat it was shown that the emissions from the carbonization process drop to negligible levels shortly after the cooling stage begins. Based on this testing, it has been determined that use of the incinerator may be discontinued when the atmospheric carbonization furnace has experienced a temperature drop of at least 110°C and a minimum of eight hours have elapsed from the time the power to the furnace was shut off.

*BPT*

BPT for the atmospheric carbonizers is use of Incinerator #3 to control emissions. FMI shall record the incinerator temperature, minimum of 1600°F, on an hourly basis using a chart recorder. Upon power termination to the carbonizer furnace, the use of the incinerator may be discontinued when the carbonizer furnace has a temperature drop of at least 110°C and a minimum of eight hours has elapsed from the time the furnace power was shut off.

A summary of the BPT analysis for Incinerator #3 is the following:

PM/PM <sub>10</sub>	–	0.05 lb/MMBtu based on 06-096 CMR 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
Opacity	–	06-096 CMR 115, BPT

	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Incinerator #3	0.08	0.08	neg	0.32	0.13	0.01

Visible emissions from Incinerator #3 shall not exceed 10% opacity on a six (6) minute block average.

F. Douglas Impregnator/Carbonizers

FMI operates two Douglas Impregnator/Carbonizers. Each one is a piece of equipment which perform the same operations as described above in the Impregnation and Atmospheric Carbonization sections only in a single unit. This improves production efficiency and reduces handling of the pitch vessels. These units are a closed system.

*Control Equipment*

During the impregnation stage, off-gassed effluent vapors are drawn from the process by a vacuum pump which is exhausted through high efficiency coalescing filters with an efficiency rating of 99.9%. A cold trap is used between the vessel and the vacuum pump system to condense out any liquid.

During the carbonization stage, the units are controlled by Incinerator #3 with a 99.9% control efficiency. The incinerator is operated at a temperature of 1600°F throughout the carbonization cycle, with a minimum retention time of 1.0 second. The incinerator has two chambers and the burner is rated at 1.6 MMBtu/hr firing natural gas.

Based on the testing described above for the Atmospheric Carbonizers, it has been determined that use of the incinerator may be discontinued when the Douglas Impregnator/Carbonizer has experienced a temperature drop of at least 110°C and a minimum of eight hours have elapsed from the time the power to the furnace was shut off

*BPT*

BPT for the Douglas Impregnator/Carbonizers is the use of the condenser/coalescent filter system during the impregnation stage and use of Incinerator #3 to control emissions during the carbonization stage.

FMI shall record the incinerator temperature, minimum of 1600°F, on an hourly basis using a chart recorder. Upon power termination to the carbonizer furnace, the use of the incinerator may be discontinued when the carbonizer furnace has a temperature drop of at least 110°C and a minimum of eight hours has elapsed from the time the furnace power was shut off.

FMI shall maintain a log documenting any repairs or maintenance to the controls and the routine draining of condensate.

A summary of the BPT analysis for Incinerator #3 is addressed in the Atmospheric Carbonization section above.

G. Silicon Carbide Carbonizer

The Accutherm 2 Carbonizer (AC2) was converted to the dedicated processing of silicon carbide as described and licensed in air emission license A-262-71-V-M. When this vessel was converted and dedicated to processing of silicon carbide, one of the changes was to disconnect the vessel exhaust from the incinerator and exhaust directly to the atmosphere through an exhaust stack in the roof (Stack #33). The off gases from this process are comprised of 99.9% hydrogen, 0.08% silane, and 0.02% cyclohexane. The volatility of the hydrogen gas made it too dangerous to vent into the incinerator.

*BPT*

BPT for the Silicon Carbide Carbonizer is to exhaust the unit through Stack #33.

Visible emissions from Stack #33 shall not exceed 10% opacity on a six (6) minute block average.

H. Hot Isostatic Press (HIP) Vessels

The Hot Isostatic Press (HIP) vessels are sometimes referred to as Pressure/Impregnation/Carbonization (PIC) vessels. FMI operates five HIP vessels.

The billets are placed inside a large electric furnace, which is then placed in an autoclave. The HIP furnace heats the parts to as high as 750°C (1382°F) while argon is used to pressurize the vessel up to 15,000 psig (pounds per square inch gauge).

In the standard carbon-carbon HIP cycle, hydrocarbon gases are exhausted from the autoclave during brief pulses.

When manufacturing molded-phenolic products, the products are made from 'pre-preg' and molded in the HIP vessels. 'Pre-preg' is carbon-fiber cloth or tape that has been previously impregnated with phenolic resin and heated to remove most of the volatiles in the resin. The 'pre-preg' cloth is molded into the desired form using a combination of moderate temperatures and pressures in the HIP vessels.

*Control Equipment*

In the standard carbon-carbon HIP cycle, the exhaust goes through a tremendous pressure drop and the cooling that occurs allows some of the heavy hydrocarbons to condense out.

The gases then go through a wet scrubber. Each HIP vessel has its own wet scrubber. The scrubber water is sprayed into the exhaust stream then collected and re-circulated through the sprayers. The HIP scrubbers are rated at 99.9% efficiency for the collection and removal of pitch volatiles.

When manufacturing molded-phenolic products, thermal decomposition of the resin is not expected at the temperatures used. However any potential emissions are vented through the vacuum pump and controlled by a condenser and coalescent filter rated at 99.9% efficiency.

*BPT*

BPT for the standard carbon-carbon HIP cycle is the operation of the wet scrubbers in accordance with the manufacture's specifications throughout each HIP cycle.

BPT for the molded-phenolic products, is use of the condenser/coalescent filter system.

Visible emissions from HIP vessels shall each not exceed 10% opacity on a six (6) minute block average.

FMI shall maintain a log documenting any repairs or maintenance to the controls and the routine draining of condensate.

I. Graphitizers

The graphitizer furnaces are used to convert carbon and phenolic materials to graphite. The billets are heated in nitrogen at atmospheric pressure to temperatures of up to 2750°C. The graphitizer temperature is monitored using a thermocouple for temperatures up to 950°C and using a two-color infrared system

for temperatures greater than 950°C. The furnaces are continuously purged with nitrogen to prevent oxidation of the carbon and/or graphite.

FMI operates 15 graphitizers. Graphitizers #22 and #23 are large units located in Building #1 which are used primarily to graphitize billets from the FiberForm insulation process. There are 13 other graphitizers located in Building #3 used primarily to process Fiber-Form products.

#### *Control Equipment*

Emissions from the graphitizer furnaces are vented through the top of the furnaces and are drawn into a duct leading to the “graph” incinerators. Graphitizers #22 and #23 are controlled by Incinerator #4. The seven A/B Graphitizers are controlled by Incinerator #2 and the six D/F Graphitizers are controlled by Incinerator #1. Each of the graph incinerators is rated at 99.9% control efficiency.

Each incinerator is operated at a minimum temperature of 1600°F with a minimum retention time of 1.0 second throughout the graphitization cycle. The incinerators each have two chambers and the burners are each rated at 1.6 MMBtu/hr firing natural gas.

Based on testing conducted on similar process units at Intermat it was shown that the emissions from the graphitization process drop to negligible levels shortly after the cooling stage begins. Based on this testing, it has been determined that use of the incinerator may be discontinued when the graphitizer has experienced a temperature drop of at least 700°C and a minimum of 3.5 hours have elapsed from the time the power to the furnace was shut off.

#### *BPT*

BPT for the graphitizers is use of the associated incinerators to control emissions. FMI shall record each incinerator temperature, minimum of 1600°F, on an hourly basis using a chart recorder. Upon power termination to the graphitizer furnace, the use of the incinerator may be discontinued when the graphitizer has a temperature drop of at least 700°C and a minimum of 3.5 hours has elapsed from the time the furnace power was shut off.

A summary of the BPT analysis for Incinerators #1, #2, and #4 is the following:

PM/PM <sub>10</sub>	–	0.05 lb/MMBtu based on 06-096 CMR 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
Opacity	–	06-096 CMR 115, BPT

	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Incinerator #1	0.08	0.08	neg	0.32	0.13	0.01
Incinerator #2	0.08	0.08	neg	0.32	0.13	0.01
Incinerator #4	0.08	0.08	neg	0.32	0.13	0.01

Visible emissions from Incinerators #1, #2, and #4 shall each not exceed 10% opacity on a six (6) minute block average.

J. Drying Ovens

FMI operates four drying ovens. These units are used in the production of FiberForm. FiberForm is made from a slurry composed of chopped carbon fibers mixed with phenol-formaldehyde resin and water. This slurry is molded into blocks or other shapes, by pouring it into the molds and then drawing out the water using a vacuum pump. The molds are then put into drying ovens and heated to temperatures in the range of 225°F to 235°F.

*Control Equipment*

Evaporative emissions from the drying ovens are not controlled. Based on the relatively insignificant amount of phenol/formaldehyde that could potentially be emitted, it has been determined that any add on pollution control device would not be practical.

*BPT*

BPT for the drying ovens is determined to be maintaining records demonstrating compliance with the facility-wide VOC and HAP emission limits.

Visible emissions from each of the drying ovens shall not exceed 10% opacity on a six (6) minute block average.

K. Retort Ovens

FMI operates six retort ovens (GII, D1, S1, B1, Gehrlich #1, and Gehrlich #2). The retort ovens are used to carbonize FiberForm, adhesives, and assorted rayon materials such as rayon felt, fiber, tow, and staple. All retort ovens, with the exception of the Gehrlich's are electric ovens. Gehrlich #1 and #2 each have a natural gas-fired burner rated at 1.5 MMBtu/hr.

*Control Equipment*

Emissions from the retort ovens are controlled by incinerators. Retort Ovens S1 and B1 are both controlled by Incinerator #5. Gehrlich #1 and #2 are both controlled by Incinerator #6. Retort Ovens GII and D1 are controlled by

Incinerators #7 and #8 respectively. Each of the retort oven incinerators is rated at 99.9% control efficiency.

Each incinerator is operated at a minimum temperature of 1600°F with a minimum retention time of 1.0 second throughout the carbonization cycle. The incinerators each have two chambers and the burners are each rated at 1.5 MMBtu/hr for Incinerators #5 & #6 and 0.7 MMBtu/hr for Incinerators #7 & #8. Each of the retort oven incinerators fires natural gas.

Based on previous testing of the retort ovens, it was shown that the emissions from the retort ovens drop to negligible levels shortly after the cooling stage begins. Based on this testing, it has been determined that use of the incinerator may be discontinued when a minimum of 6.5 hours has elapsed from the time the power or gas to the oven was shut off or when the oven temperature has dropped to below 200°F.

*BPT*

BPT for the retort ovens is use of the associated incinerators to control emissions. FMI shall record each incinerator temperature, minimum of 1600°F, on an hourly basis using a chart recorder. Upon power termination or gas shut off to the retort oven, the use of the incinerator may be discontinued when a minimum of 6.5 hours has elapsed or when the oven temperature has dropped to below 200°F.

A summary of the BPT analysis for fuel burning in Gehrlich #1 and #2 is the following:

- PM/PM<sub>10</sub> – 0.05 lb/MMBtu based on 06-096 CMR 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

	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Gehrlich #1	0.08	0.08	neg	0.16	0.13	0.01
Gehrlich #2	0.08	0.08	neg	0.16	0.13	0.01

A summary of the BPT analysis for Incinerators #5, #6, #7 and #8 is the following:

- PM/PM<sub>10</sub> – 0.05 lb/MMBtu based on 06-096 CMR 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
- Opacity – 06-096 CMR 115, BPT

	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Incinerator #5	0.08	0.08	neg	0.30	0.13	0.01
Incinerator #6	0.08	0.08	neg	0.30	0.13	0.01
Incinerator #7	0.04	0.04	neg	0.14	0.06	0.01
Incinerator #8	0.04	0.04	neg	0.14	0.06	0.01

Visible emissions from Incinerators #5, #6, #7 and #8 shall each not exceed 10% opacity on a six (6) minute block average.

L. Placed Fiber / Pre-preg Production

FMI has two existing low-volume intermittent sources of VOC and HAP.

One of the processes is a Fiber Placement Process. A small quantity of phenolic resin is mixed with isopropyl alcohol in a sealed five gallon mixing tank. The mixture is pumped into a hand held chopper unit where it is combined with chopped quartz fibers and hydraulically sprayed onto a table mount mold. The spraying takes approximately five minutes. The molded chopped fiberboard is then placed in a small drying oven to cure for an average of three hours at 220°F. The oven is vented through the roof.

The other process is known as “Prepregging.” Woven cloth of various construction is dipped into the same phenolic resin. The impregnated cloth is then passed between two rollers to remove excess resin and then is placed into a curing rack. The curing rack is rolled into a curing oven for one to two hours at 220°F. The oven is vented through the roof.

*Control Equipment*

Evaporative emissions from these processes are not controlled. Based on the relatively small amount of VOC and HAP that could potentially be emitted, it has been determined that any add on pollution control device would not be practical.

*BPT*

BPT for these processes is determined to be maintaining records demonstrating compliance with the facility-wide VOC and HAP emission limits.

Visible emissions from each of the drying ovens shall not exceed 10% opacity on a six (6) minute block average.

M. Machine Shop

FMI operates two machine shops, one in Building #3 and another in Building #5. Each machine shop consists of grinders, lathes, and saws which create graphite dust.

*Control Equipment*

A number of cartridge dust collectors and baghouses rated at 99.6% control efficiency are used to control the particulate emissions from the machine shops and may be configured to discharge either indoors or outdoors depending on the facility's seasonal heating or cooling requirements.

*BPT*

BPT for PM emissions from the machine shops is use of the dust collectors and baghouses.

Visible emissions from each machine shop baghouse shall not exceed 10% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a 1-hour period.

FMI shall maintain a log documenting any repairs or maintenance to the controls.

N. Parts Washers

FMI maintains two small solvent cleaning units which are used primarily to remove pitch condensate from process equipment. The parts washers are subject to *Solvent Cleaners*, 06-096 CMR 130 (as amended) and records shall be kept documenting compliance.

O. Annual Emissions

1. Total Annual Emissions

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

- Use of the boilers for 8,760 hr/year
- Use of the generators for 100 hr/year
- Use of the burners in the Gehrlich retort ovens for 8,760 hr/year
- Use of the incinerators for 8,760 hr/year
- Emissions of SO<sub>2</sub> from the burning of natural gas are assumed to be negligible.

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

	PM	PM <sub>10</sub>	NO <sub>x</sub>	CO	VOC
Boiler #1	0.4	0.4	0.7	0.6	0.1
Boiler #4	0.7	0.7	1.3	1.1	0.1
Bldg 1-2 Gen	0.1	0.1	0.2	0.1	0.1
Bldg 3 Gen	0.1	0.1	0.5	0.1	0.1
Incinerator #1	0.4	0.4	1.4	0.6	0.1
Incinerator #2	0.4	0.4	1.4	0.6	0.1
Incinerator #3	0.4	0.4	1.4	0.6	0.1
Incinerator #4	0.4	0.4	1.4	0.6	0.1
Incinerator #5	0.3	0.3	1.3	0.5	0.1
Incinerator #6	0.3	0.3	1.3	0.5	0.1
Incinerator #7	0.2	0.2	0.6	0.3	0.1
Incinerator #8	0.2	0.2	0.6	0.3	0.1
Gehrich #1 Burner	0.3	0.3	0.6	0.5	0.1
Gehrich #2 Burner	0.3	0.3	0.6	0.5	0.1
Drying Ovens & Other Processes	–	–	–	–	13.6
<b>Total TPY</b>	<b>4.5</b>	<b>4.5</b>	<b>13.3</b>	<b>6.9</b>	<b>15.0</b>

Pollutant	Tons/Year
Individual HAP	9.9
Total HAP	24.9

2. Greenhouse Gases

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

Based on the facility’s fuel use limit(s), the worst case emission factors from AP-42, IPCC (Intergovernmental Panel on Climate Change), and *Mandatory Greenhouse Gas Reporting*, 40 CFR Part 98, and the global warming potentials contained in 40 CFR Part 98, FMI is below the major source

threshold of 100,000 tons of CO<sub>2</sub>e per year. Therefore, no additional licensing requirements are needed to address GHG emissions at this time.

### III. AMBIENT AIR QUALITY ANALYSIS

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

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

The total facility licensed emissions 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.

### 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-Z-R subject to the following conditions.

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License 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.A. §347-C).
- (2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115. [06-096 CMR 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 CMR 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 CMR 115]
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S.A. §353-A. [06-096 CMR 115]
- (6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 CMR 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 CMR 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 CMR 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 CMR 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 CMR 115]
- (11) In accordance with the Department's air emission compliance test protocol and 40 CFR 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 CFR 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 CMR 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 such test results, 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 CFR 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 CMR 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 Part 70 license requirement. [06-096 CMR 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 CMR 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 CMR 115]

### SPECIFIC CONDITIONS

(16) **Boilers #1 & #4**

A. Boilers #1 & #4 shall fire only natural gas. [06-096 CMR 115, BPT]

B. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boiler #4	PM	0.05	06-096 CMR 115, BPT

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

Emission Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1	0.08	0.08	neg	0.16	0.14	0.01
Boiler #4	0.15	0.15	neg	0.29	0.24	0.02

- D. Visible emissions from Boilers #1 and #4 shall each not exceed 10% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a continuous 3-hour period. [06-096 CMR 101]

(17) **Emergency Generators**

- A. Each of the emergency generators (Bldg 1-2 Gen and Bldg 3 Gen) shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [06-096 CMR 115, BPT]
- B. The diesel fuel sulfur content for Bldg 1-2 Gen and Bldg 3 Gen shall be limited to 0.0015% sulfur. Compliance shall be demonstrated by fuel records from the supplier documenting the type of fuel delivered and the sulfur content of the fuel. [06-096 CMR 115, BPT]
- C. Emissions shall not exceed the following [06-096 CMR 115, BPT]:

<u>Unit</u>	<u>PM (lb/hr)</u>	<u>PM<sub>10</sub> (lb/hr)</u>	<u>SO<sub>2</sub> (lb/hr)</u>	<u>NO<sub>x</sub> (lb/hr)</u>	<u>CO (lb/hr)</u>	<u>VOC (lb/hr)</u>
Bldg 1-2 Gen	0.13	0.13	neg	4.76	1.03	0.38
Bldg 3 Gen	0.28	0.28	neg	10.14	2.19	0.81

- D. Visible emissions from each of the diesel generators shall not exceed 20% opacity on a 6 minute block average, except for no more than two (2) six (6) minute block averages in a 3 hour period. [06-096 CMR 101]
- E. Bldg 1-2 Gen and Bldg 3 Gen shall each meet the applicable requirements of 40 CFR Part 63, Subpart ZZZZ, including the following:
1. FMI shall meet the following operational limitations for each of the compression ignition emergency generators:
    - a. Change the oil and filter annually,
    - b. Inspect the air cleaner annually and replace as necessary, and
    - c. Inspect the hoses and belts annually and replace as necessary.

A log shall be maintained documenting compliance with the operational limitations.

[40 CFR §63.6603(a) and Table 2(d); and 06-096 CMR 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 the engine. The analysis program must be part of the maintenance plan for the engine. [40 CFR §63.6625(i)]

3. Non-Resettable Hour Meter

A non-resettable hour meter shall be installed and operated on each generator. [40 CFR §63.6625(f)]

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

a. The generators shall each be limited to 100 hours/year for maintenance checks and readiness testing, emergency demand response, and periods of voltage or frequency deviation from standards. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, non-emergency 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 unless the conditions in §63.6640(f)(4)(ii) are met). These limits are based on a calendar year. Compliance shall be demonstrated by a written log of all generator operating hours. [40 CFR §63.6640(f) and 06-096 CMR 115]

b. FMI shall keep records that include maintenance conducted on the generators and the hours of operation of each engine recorded through the non-resettable hour meter. Documentation shall include the hours spent for emergency operation, including what classified the operation as emergency and how many hours spent for non-emergency. If the generators are operated during a period of demand response or deviation from standard voltage or frequency, or to supply power during a non-emergency situation as part of a financial arrangement with another entity as specified in §63.6640(f)(4)(ii), the FMI shall keep records of the notification of the emergency situation, and the date, start time, and end time of generator operation for these purposes. [40 CFR §63.6655(e) and (f)]

5. Operation and Maintenance

The generators 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 engine in a manner consistent with good air pollution control practice for minimizing emissions.

[40 CFR §63.6625(e)]

6. Startup Idle and Startup Time Minimization  
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, after which time the non-startup emission limitations apply.  
[40 CFR §63.6625(h) & 40 CFR Part 63, Subpart ZZZZ Table 2d]
7. Requirements For Demand Response Availability Over 15 Hours Per Year (and greater than 100 brake hp)

If FMI operates or is contractually obligated to be available for more than 15 hours per calendar year in a demand response program, during a period of deviation from standard voltage or frequency, or supplying power during a non-emergency situation as part of a financial arrangement with another entity as specified in §63.6640(f)(4)(ii), the facility shall submit an annual report containing the information in §63.6650(h)(1)(i) through (ix). The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year. The annual report must be submitted electronically using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) ([www.epa.gov/cdx](http://www.epa.gov/cdx)). However, if the reporting form is not available in CEDRI at the time that the report is due, the written report must be submitted to the following address:

Director, Office of Ecosystem Protection  
U.S. Environmental Protection Agency  
5 Post Office Square, Suite 100  
Boston, MA 02109-3912

[40 CFR §63.6650(h)]

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

FMI shall not exceed a facility-wide total annual emissions of 15.0 tons per year of VOCs, 9.9 tons per year of any single HAP, or 24.9 tons per year of any combination of HAPs based on a calendar year basis. Compliance with the VOC and HAP limits shall be demonstrated by record keeping including the following as necessary: usage, hours of operation, Safety Data Sheets (SDS), and/or manufacturer information. [06-096 CMR 115, BPT]

(19) **Impregnation Vessels**

(Includes the 5 pair of impregnation vessels and the impregnation stage when using the Douglas Impregnator/Carbonizers.)

- A. FMI shall vent all emissions from the impregnation vessels through the associated condenser and coalescent filter. [06-096 CMR 115, BPT]
- B. FMI shall maintain a log documenting any repairs or maintenance to the controls and the routine draining of condensate. [06-096 CMR 115, BPT]

(20) **Atmospheric Carbonization**

(Includes the 3 production atmospheric carbonizers, the R&D Carbonizer, and the carbonization stage when using the Douglas Impregnator/Carbonizers.)

- A. FMI shall operate Incinerator #3 to control emissions from the carbonization process. Upon power termination to the carbonizer furnace, the use of the incinerator may be discontinued when the carbonizer furnace has a temperature drop of at least 110°C and a minimum of eight hours has elapsed from the time the furnace power was shut off. [06-096 CMR 115, BPT]
- B. FMI shall maintain a log documenting any repairs or maintenance to the incinerator. [06-096 CMR 115, BPT]
- C. Emissions from Incinerator #3 shall not exceed the following [06-096 CMR 115, BPT]:

	<b>PM (lb/hr)</b>	<b>PM<sub>10</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 #3	0.08	0.08	neg	0.32	0.13	0.01

- D. 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 CMR 115, BPT]
- E. FMI shall maintain a minimum temperature of 1600°F in the incinerator at all times during a carbonization process which is required to be vented to the incinerator. [06-096 CMR 115, BPT]
- F. The temperature of the incinerator shall be recorded on a chart recorder, or at a minimum of once per hour manually, when any carbonizer is in operation. [06-096 CMR 115, BPT]

- G. Visible emissions from Incinerator #3 shall not exceed 10% opacity on a six (6) minute block average. [06-096 CMR 115, BPT]
  - H. FMI shall keep a log for each carbonizer detailing dates and times of operation. [06-096 CMR 115, BPT]
- (21) **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 (6) minute block average. [06-096 CMR 115, BPT]
- (22) **HIP Vessels**
- A. For the standard carbon-carbon HIP cycle, FMI shall control emissions from each HIP vessel by venting emissions through the associated wet scrubber throughout each HIP cycle. [06-096 CMR 115, BPT]
  - B. For the molded-phenolic products, FMI shall control emissions by venting the HIP vessel through the associated condenser and coalescent filter. [06-096 CMR 115, BPT]
  - C. Visible emissions from HIP vessels shall each not exceed 10% opacity on a six (6) minute block average. [06-096 CMR 115, BPT]
  - D. FMI shall maintain a log documenting any repairs or maintenance to the controls and the routine draining of condensate. [06-096 CMR 115, BPT]
- (23) **Graphitizers**  
(Includes the Graphitizers #22 & #23, the seven A/B Graphitizers, and the six D/F Graphitizers.)
- A. FMI shall operate Incinerator #4 to control emissions from Graphitizers #22 and #23, Incinerator #2 to control emissions from the seven A/B Graphitizers, and Incinerator #1 to control emissions from the six D/F Graphitizers. Upon power termination to the graphitizer furnace, the use of the incinerator may be discontinued when the graphitizer has a temperature drop of at least 700°C and a minimum of 3.5 hours has elapsed from the time the furnace power was shut off. [06-096 CMR 115, BPT]
  - B. FMI shall maintain a log documenting any repairs or maintenance to the incinerators. [06-096 CMR 115, BPT]

C. Emissions from the incinerators shall not exceed the following [06-096 CMR 115, BPT]:

	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Incinerator #1	0.08	0.08	neg	0.32	0.13	0.01
Incinerator #2	0.08	0.08	neg	0.32	0.13	0.01
Incinerator #4	0.08	0.08	neg	0.32	0.13	0.01

D. A pyrometer or thermocouple shall be installed and maintained at the location of each 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 CMR 115, BPT]

E. FMI shall maintain a minimum temperature of 1600°F in the incinerator at all times a graphitizer is in use and required to be vented to the incinerator. [06-096 CMR 115, BPT]

F. The temperature of each incinerator shall be recorded on a chart recorder, or at a minimum of once per hour manually, when any associated graphitizer is in operation. [06-096 CMR 115, BPT]

G. Visible emissions from Incinerators #1, #2, and #4 shall each not exceed 10% opacity on a six (6) minute block average. [06-096 CMR 115, BPT]

H. FMI shall keep a log for each graphitizer detailing dates and times of operation. [06-096 CMR 115, BPT]

(24) **Drying Ovens**

Visible emissions from each of the drying ovens shall not exceed 10% opacity on a six (6) minute block average. [06-096 CMR 115, BPT]

(25) **Retort Ovens**

(Includes the GII, D1, S1, B1, and Gehrich #1 & #2 retort ovens.)

A. FMI shall only fire natural gas in the Gehrich #1 and #2 burners. [06-096 CMR 115, BPT]

B. Emissions from the Gehnrich #1 and #2 burners shall not exceed the following [06-096 CMR 115, BPT]:

	<b>PM (lb/hr)</b>	<b>PM<sub>10</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>
Gehnrich #1	0.08	0.08	neg	0.16	0.13	0.01
Gehnrich #2	0.08	0.08	neg	0.16	0.13	0.01

C. FMI shall operate Incinerator #5 to control emissions from Retort Ovens S1 and B1, Incinerator #6 to control emissions from the Gehnrich #1 and #2, Incinerator #7 to control emissions from Retort Oven GII, and Incinerator #8 to control emissions from Retort Oven D1. Upon power termination or gas shut off to the retort oven, the use of the incinerator may be discontinued when a minimum of 6.5 hours has elapsed or when the oven temperature has dropped to below 200°F. [06-096 CMR 115, BPT]

D. FMI shall maintain a log documenting any repairs or maintenance to the incinerators. [06-096 CMR 115, BPT]

E. Emissions from the incinerators shall not exceed the following [06-096 CMR 115, BPT]:

	<b>PM (lb/hr)</b>	<b>PM<sub>10</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	0.08	0.08	neg	0.30	0.13	0.01
Incinerator #6	0.08	0.08	neg	0.30	0.13	0.01
Incinerator #7	0.04	0.04	neg	0.14	0.06	0.01
Incinerator #8	0.04	0.04	neg	0.14	0.06	0.01

F. A pyrometer or thermocouple shall be installed and maintained at the location of each 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 CMR 115, BPT]

G. FMI shall maintain a minimum temperature of 1600°F in the incinerator at all times a retort oven is in use and required to be vented to the incinerator. [06-096 CMR 115, BPT]

H. The temperature of each incinerator shall be recorded on a chart recorder, or at a minimum of once per hour manually, when any associated retort oven is in operation. [06-096 CMR 115, BPT]

I. Visible emissions from Incinerators #5, #6, #7 and #8 shall each not exceed 10% opacity on a six (6) minute block average. [06-096 CMR 115, BPT]

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

(26) **Fiber Placement Process and Pregregging**

Visible emissions from each of the drying ovens associated with the Fiber Placement Process and Pregregging operations shall not exceed 10% opacity on a six (6) minute block average. [06-096 CMR 115, BPT]

(27) **Machine Shops**

A. Visible emissions from each machine shop baghouse shall not exceed 10% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a 1-hour period. [06-096 CMR 101]

B. FMI shall maintain a log documenting any repairs or maintenance to the machine shop baghouses. [06-096 CMR 115, BPT]

(28) **Parts Washers**

Parts washers at FMI are subject to *Solvent Cleaners*, 06-096 CMR 130 (as amended).

A. FMI shall keep records of the amount of solvent added to each parts washer. [06-096 CMR 115, BPT]

B. The following are exempt from the requirements of 06-096 CMR 130 [06-096 CMR 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 Chapter 130.

1. FMI shall attach a permanent conspicuous label to each unit summarizing the following operational standards [06-096 CMR 130]:
  - (i) Waste solvent shall be collected and stored in closed containers.
  - (ii) 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.
  - (iii) 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.
  - (iv) The cold cleaning machine shall not be exposed to drafts greater than 40 meters per minute when the cover is open.

- (v) Sponges, fabric, wood, leather, paper products and other absorbent materials shall not be cleaned in the degreaser.
  - (vi) 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.
  - (vii) Spills during solvent transfer shall be cleaned immediately. Sorbent material used to clean spills shall then be immediately stored in covered containers.
  - (viii) Work area fans shall not blow across the opening of the degreaser unit.
  - (ix) 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.  
[06-096 CMR 130]

(29) FMI 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.A. §605).

DONE AND DATED IN AUGUSTA, MAINE THIS 20 DAY OF March, 2014.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: *Patricia W. Aho*  
PATRICIA W. AHO, COMMISSIONER

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

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

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 1/24/14

Date of application acceptance: 1/27/14

Date filed with the Board of Environmental Protection:

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

