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-AC-M**	**Departmental** **Findings of Fact and Order** **Air Emission License** **Amendment #3**

FINDINGS OF FACT

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

I. REGISTRATION

A. Introduction

Fiber Materials Inc. (FMI) was issued Air Emission License A-262-71-Z-R on March 20, 2014, for the operation of emission sources associated with their carbon composite manufacturing facility. The license was subsequently amended on September 25, 2017 (A-262-71-AA-M) and May 29, 2019 (A-262-71-AB-M).

FMI has requested a minor revision to their license in order to replace a graphitizer with new, like-kind equipment.

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

B. Emission Equipment

The following equipment is addressed in this air emission license amendment:

Process Equipment

Equipment	Number of Units	Pollution Control Equipment
A/B Graphitizers	8*	Incinerator #2

*Only one unit is being replaced/added with this revision.

C. 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.

This amendment will not increase licensed emissions of any pollutant. Therefore, this amendment is determined to be a minor revision and has been processed as such.

D. Facility Classification

With the facility-wide VOC and HAP limits the facility is licensed as follows:

- As a synthetic minor source of air emissions, because FMI is subject to license restrictions that keep facility emissions below major source thresholds for criteria pollutants; 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.

B. 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 currently 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 (seven A/B Graphitizers and six D/F Graphitizers) used primarily to process Fiber-Form products. FMI has previously shut down and removed from their license one A/B Graphitizer. FMI has

requested the replacement of this graphitizer with a like-kind unit, bringing the total A/B Graphitizers to eight and the total for the facility to 16.

BACT

Emissions from the graphitizer furnaces are vented through the top of the furnaces and are drawn into a duct leading to the "graph" incinerators. Emissions of VOC and HAP from the A/B Graphitizers are controlled by Incinerator #2 which is rated at 99.9% control efficiency.

Incinerator #2 is operated at a minimum temperature of 1600°F with a minimum retention time of 1.0 second throughout the graphitization cycle. It has two chambers and the burners are rated at 1.6 MMBtu/hr firing natural gas.

Although Incinerator #2 controls multiple graphitizers, FMI is physically limited to operating only one of the A/B Graphitizers at a time as there is only enough power available to supply one graphitizer in each group at a time. Therefore, adding an 8th graphitizer to the group does not increase the short-term emissions or annual licensed emissions from Incinerator #2.

Based on testing conducted on similar process units at another facility, 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 temperature drops to below 700°C and a minimum of 3.5 hours have elapsed from the time the power to the furnace was shut off.

BACT for the new graphitizer is determined to be continued use of the incinerator associated with the A/B Graphitizers (Incinerator #2) 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 graphitizer furnace, the use of the incinerator may be discontinued when the graphitizer temperature drops to below 700°C and a minimum of 3.5 hours has elapsed from the time the furnace power was shut off.

A summary of the BACT analysis for Incinerator #2 is the following:

PM/PM_{10}	–	0.05 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT
SO_2	–	0.6 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
NO_x	–	200 lb/MMscf based on twice AP-42 Table 1.4-1 dated 7/98 due to the high amount of thermal NO_x 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 C.M.R. ch. 115, BACT

	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Incinerator #2	0.08	0.08	neg	0.32	0.13	0.01

Visible emissions from Incinerator #2 shall not exceed 10% opacity on a six (6) minute block average basis.

Recordkeeping requirements for the A/B Graphitizers and the associated Incinerator #2 are already addressed in air emission license A-262-71-Z-R. No additional recordkeeping requirements are required as a result of this revision.

C. Annual Emissions

This amendment will not result in any changes to licensed emissions.

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_{10}	25
SO_2	50
NO_x	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 amendment.

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 Amendment A-262-71-AC-M subject to the conditions found in Air Emission License A-262-71-Z-R, in amendments A-262-71-AA-M and A-262-71-AB-M, and the following conditions.

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

SPECIFIC CONDITIONS

The following shall replace Condition (23)(A) of Air Emission License A-262-71-Z-R:

(23) **Graphitizers**
(Includes the Graphitizers #22 & #23, the A/B Graphitizers, and the D/F Graphitizers.)

A. FMI shall operate Incinerator #4 to control emissions from Graphitizers #22 and #23, Incinerator #2 to control emissions from the A/B Graphitizers, and Incinerator #1 to control emissions from the D/F Graphitizers. Upon power termination to the graphitizer furnace, the use of the incinerator may be discontinued when the graphitizer temperature drops to below 700°C and a minimum of 3.5 hours has elapsed from the time the furnace power was shut off. [06-096 C.M.R. ch. 115, BPT/BACT]

The following are New Conditions:

(31) FMI is licensed to install and operate one new A/B Graphitizer (total of eight) subject to the same requirements and conditions as the existing A/B Graphitizers. [06-096 C.M.R. ch. 115, BACT]

DONE AND DATED IN AUGUSTA, MAINE THIS 13th DAY OF September , 2019.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: for
GERALD D. REID, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-262-71-Z-R.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 7/30/19
Date of application acceptance: 7/30/19

Date filed with the Board of Environmental Protection:

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

Filed
SEP 13 2019
State of Maine
Board of Environmental Protection