



DEPARTMENT ORDER

**Cianbro Fabrication and Coating
Corporation
Somerset County
Pittsfield, Maine
A-794-71-K-A**

**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

Cianbro Fabrication and Coating Corporation (Cianbro) was issued Air Emission License A-794-71-H-R on January 11, 2019, for the operation of emission sources associated with their metal fabrication and coatings facility. The license was subsequently amended as follows:

Amendment #	Date Issued	Brief Description
A-794-71-I-A	February 23, 2021	Install plate processing machine
A-794-71-J-M	February 8, 2022	Replace the Blast Booth with a new unit

The equipment addressed in this license amendment is located at 335 Hunnewell Ave., Pittsfield, Maine.

Cianbro has requested an amendment to their license in order to replace the existing Plate Processor with a new unit. The visible emissions standards for general process emissions and for fugitive emissions will also be updated to the latest standards as found in 06-096 C.M.R. ch. 101.

B. Emission Equipment

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

Process Equipment

Equipment	Pollution Control Equipment
Plate Processor #2	Baghouse
<i>Plate Processor*</i>	<i>Baghouse</i>

* This equipment has been removed.

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.

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, as follows:

Pollutant	Current License (tpy)	Future License (tpy)	Net Change (tpy)	Significant Emission Levels
PM	2.5	2.5	0.0	100
PM ₁₀	2.5	2.5	0.0	100
PM _{2.5}	2.5	2.5	0.0	100
SO ₂	0.2	0.2	0.0	100
NO _x	9.2	11.3	2.1	100
CO	4.0	4.0	0.0	100
VOC	49.9	49.9	0.0	100

This modification is determined to be a minor modification and has been processed as such.

D. Facility Classification

With the annual VOC and HAP limits associated with coating operations, the facility is licensed as follows:

- As a synthetic minor source of air emissions for criteria pollutants, because Cianbro 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.

B. Plate Processor #2

Cianbro is replacing the existing plate processing unit at their facility in Pittsfield with a new unit designated Plate Processor #2. Plate Processor #2 is a Kinetec K5000xmc which utilizes a plasma torch, an oxy-fuel cutting torch, and various drilling implements to prepare mild steel sheets for further production. It can accommodate pieces having a thickness of up to 80 mm (3.15 inches).

Plasma cutting uses electrically ionized gas (plasma) to cut through materials such as steel, aluminum, brass, and copper. Fumes and gases generated by plasma cutting depend on the method of cutting (dry or wet), cutting speed, thickness of the metal being cut, alloy contents of the metal being cut, and ventilation conditions. (AP-42 Chapter 12, *Related Emission Factors: Emission of Fume, Nitrogen Oxides and Noise in Plasma Cutting of Stainless and Mild Steel*).

Oxy-fuel cutting is a thermal cutting process that uses pure oxygen and fuel gas to cut through materials, such as plate steel. Heat from an oxy-fuel cutting torch is used to raise the surface or edge of the steel to approximately 1,800 degrees Fahrenheit. Oxygen is then directed to the heated area using a fine, high-pressure stream. The steel begins to oxidize and is blown away to form a cavity. The heat and stream of oxygen move at a consistent speed to cut into the metal.

Air pollutants generated by Plate Processor #2 are particulate matter (PM, PM₁₀, PM_{2.5}) and nitrogen oxides (NO_x) and are only produced when the plasma torch or oxy-fuel torch is being used to cut material. The other mechanical operations performed by the plate processor do not generate any criteria air pollutants.

1. BACT Discussion

Cianbro provided a BACT Analysis for control of emissions from the plate processing unit which is summarized below.

a. Particulate Matter (PM, PM₁₀, and PM_{2.5})

The BACT analysis that Cianbro performed determined that a baghouse should be used to control PM, PM₁₀, and PM_{2.5} generated when dry cutting steel plate on Plate Processor #2. The baghouse shall be put into operation whenever the plasma torch or oxy-fuel cutting is being used to cut material. Fumes generated in the cutting zone during the cutting operations will be captured and vented to the baghouse where a minimum of 99.9% of the PM, PM₁₀, and PM_{2.5} contained in the fumes will be removed from the exhaust stream. The cleaned exhaust stream will then exit the baghouse and be vented to atmosphere. Additionally, Cianbro proposed to limit the time that cutting operations will be performed on Plate Processor #2 to a total of 2,600 hours per year on a calendar year basis.

The Department finds that BACT for the control of PM, PM₁₀, and PM_{2.5} from Plate Processor #2's cutting operations shall be the proper setup, operation, and maintenance of the cutting operations, the use of a baghouse having a minimum overall control efficiency of 99.9% whenever cutting operations are taking place, and a calendar year limit on cutting operations of 2,600 hours.

b. Nitrogen Oxides (NO_x)

With the annual operating hour limit on the cutting operations and the physical limitations of Plate Processor #2, the amount of NO_x emissions possible from cutting operations is minimal. Therefore, add-on controls are not economically feasible. BACT for control of NO_x from the plasma torch shall be the proper setup and operation of the plasma cutter or oxy-fuel torch optimized for the specific piece being cut according to the manufacturer's operating instructions.

2. BACT Emission Limits

The BACT emission limits for Plate Processor #2 for the dry cutting of steel plate are based on AP-42, Chapter 12, *Emission of Fume, Nitrogen Oxides and Noise in Plasma Cutting of Stainless and Mild Steel*, by Broman B. et al; and 06-096 C.M.R. ch. 115, BACT. As there are no accurate estimates of PM, PM₁₀, PM_{2.5}, or NO_x emissions from the operation of oxy-fuel cutting, the following emission limits are based on all cutting operations being plasma cutting.

Emissions from Plate Processor #2 shall not exceed the following:

Unit	PM (lb/hr)	PM₁₀ (lb/hr)	PM_{2.5} (lb/hr)	NO_x (lb/hr)
Plate Processor #2	0.06	0.06	0.06	3.41

3. Visible Emissions

The visible emissions from the exhaust of the baghouse shall not exceed 10% on a six-minute block average basis. [06-096 C.M.R. ch. 101, § 4(B)(3)]

4. 40 C.F.R. Part 63, Subpart XXXXXX, *National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories*

Plate Processor #2 is a new “machining affected source” under Subpart XXXXXX. Because Cianbro is already subject to this federal rule, the majority of the requirements are detailed in Cianbro’s existing air emission license. Additional requirements for the machining operations performed on Plate Processor #2 are as follows:

- a. Cianbro shall take measures necessary to minimize excess dust in the surrounding area to reduce MFHAP¹ emissions, as practicable; and
- b. Cianbro shall operate all equipment associated with machining according to the manufacturer’s instructions.

[40 C.F.R. § 63.11516(b)]

5. Additional BACT Requirements

- a. Cianbro will inspect Plate Processor #2 and its associated baghouse prior to its operation. This inspection will take place at least once per day, for any day that the equipment is operated. If a fault is found, corrective action shall take place before Plate Processor #2 is operated.
- b. Cianbro shall prepare and implement a written plan that includes operating instructions from the manufacturer and procedures specifying good operating and maintenance practices for Plate Processor #2 and for its associated baghouse. Where applicable, the plan shall identify specific practices, settings, and adjustments for minimizing the generation of pollutants.

¹ Metal fabrication and finishing HAP, as defined in 40 C.F.R. Part 63, Subpart XXXXXX at § 63.11522

C. General Process Emissions

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

D. Fugitive Emissions

Cianbro 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.

Cianbro 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.

E. 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 the Boilers and Heaters for 8,760 hours/year each;
- Operating Plate Processor #2 for 2,600 hours/year; and
- A facility-wide VOC limit of 49.9 tpy.

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 ₁₀	PM _{2.5}	SO ₂	NO _x	CO	VOC
Coating Operations	0.5	0.5	0.5	0.1	1.4	0.8	0.11
Heaters #1 and #2	1.97	1.97	1.97	0.1	5.45	3.14	0.42
Plate Processor #2	0.04	0.04	0.04	-	4.43	-	-
Coating Operations	-	-	-	-	-	-	49.4
Total TPY	2.5	2.5	2.5	0.2	11.3	4.0	49.9

Pollutant	Tons/year
Single HAP	9.9
Total HAP	24.9

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
PM _{2.5}	15
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.

This determination is based on information provided by the applicant regarding the expected construction and operation of the proposed and 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 Cianbro 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 Amendment A-794-71-K-A subject to the conditions found in Air Emission License A-794-71-H-R, in amendments A-794-71-I-A and A-794-71-J-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 (21) of Air Emission License A-794-71-H-R:

(21) Fugitive Emissions

- A. Cianbro 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. Cianbro 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)]

The following shall replace Condition (24) of Air Emission License A-794-71-I-A:

(24) Plate Processor #2

- A. Cutting operations on Plate Processor #2 shall be limited to 2,600 hours per calendar year. Compliance shall be demonstrated by records of the operating time that Plate Processor #2 is performing cutting operations. [06-096 C.M.R. ch. 115, BACT]

- B. Plate Processor #2 shall be equipped with a baghouse designed with a minimum overall control efficiency of 99.9% and shall be in operation whenever cutting operations are taking place. [06-096 C.M.R. ch. 115, BACT]
- C. Cianbro shall inspect Plate Processor #2 and its associated baghouse prior to its operation. This inspection will take place at least once per day, for any day that the equipment is operated. If a fault is found, corrective action shall take place before Plate Processor #2 is operated. [06-096 C.M.R. ch. 115, BACT]
- D. Cianbro shall prepare and implement a written plan that includes operating instructions from the manufacturer and procedures that specify good operating and maintenance practices for Plate Processor #2 and for its associated baghouse. Where applicable, the plan shall identify specific practices, settings, and adjustments for minimizing the generation of pollutants. [06-096 C.M.R. ch. 115, BACT]
- E. The visible emissions from the exhaust of the baghouse shall not exceed 10% on a six-minute block average basis. [06-096 C.M.R. ch. 101, § 4(B)(3)]
- F. Emissions from Plate Processor #2 shall not exceed the following:

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	PM _{2.5} (lb/hr)	NO _x (lb/hr)
Plate Processor #2	0.06	0.06	0.06	3.41

[06-096 C.M.R. ch. 115, BACT]

- G. National Emission Standards for Hazardous Air Pollutants (NESHAP): 40 C.F.R. Part 63, Subpart XXXXXX
 - 1. Cianbro shall take measures necessary to minimize excess dust in the surrounding area to reduce MFHAP emissions, as practicable; and
 - 2. Cianbro shall operate all equipment associated with machining according to the manufacturer's instructions.[40 C.F.R. § 63.11516(b)]

The following are new Conditions of Air Emission License A-794-71-H-R:

(25) 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)]

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- (26) 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, Cianbro may be required to submit additional information. Upon written request from the Department, Cianbro 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 9th DAY OF MAY, 2024.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:  for
MELANIE LOYZIM, COMMISSIONER

The term of this license amendment shall be ten (10) years from the issuance of Air Emission License A-794-71-H-R (issued January 11, 2019).

[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: 2/21/24

Date of application acceptance: 2/22/24

Date filed with the Board of Environmental Protection:

This Order prepared by Chris Ham, Bureau of Air Quality.

FILED
MAY 09, 2024
State of Maine
Board of Environmental Protection