



DEPARTMENT ORDER

**Douglas Dynamics L.L.C.
d/b/a Fisher Engineering
Knox County
Rockland, Maine
A-727-71-R-A**

**Departmental
Findings of Fact and Order
Air Emission License
Amendment #5
After-the-Fact**

FINDINGS OF FACT

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

I. REGISTRATION

A. Introduction

Douglas Dynamics L.L.C. d/b/a Fisher Engineering (Fisher) was issued Air Emission License A-727-71-M-R/M on June 25, 2015, for the operation of emission sources associated with their steel fabrication and coating facility. The license was subsequently amended as follows:

Amendment #	Date Issued	Brief Description
A-727-71-N-M	September 4, 2015	Adding an additional laser unit (Laser #3) for cutting plate steel.
A-727-71-O-A	April 26, 2018	Removing unit Plasma #3 and adding three new laser units (Lasers #4-#6).
A-727-71-P-A	August 4, 2020	Removing units Plasma #2 and Mazak #1 and adding a new laser unit (Laser #7).
A-727-71-Q-A	May 20, 2021	Removing unit Whitney #1 and adding a new laser unit (Laser #8). Also updated visible emission standards for all affected equipment to better align with 06-096 C.M.R. ch. 101.

The equipment addressed in this license amendment is located at 50 Gordon Drive, Rockland, Maine.

Fisher has requested an after-the-fact amendment to their license in order to notate the replacement of Washer #1 with a new, larger unit.

B. Emission Equipment

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

Water Heaters

Equipment	Max. Capacity (MMBtu/hr)	Maximum Firing Rate	Fuel Type	Date of Manuf.	Date of Install.	Stack #
Washer #1	4.0	43.6	propane	2023	2023	Boiler Vent
<i>Washer #1 (old) *</i>	2.3	23.5	<i>propane</i>	<i>2000</i>	<i>2000</i>	<i>Boiler Vent</i>

* This unit has been replaced and is no longer in service at this facility.

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 facility's annual fuel use for all propane-fired equipment is currently limited to 1,000,000 gal/yr of propane (see Specific Condition (17) of Air Emission License A-727-71-M-R/M, issued June 25, 2015). Because the new unit will operate under the same fuel use cap as the unit being replaced, there will be no increase in licensed emissions from this replacement. Because this amendment will not increase licensed emissions of any pollutant, it is determined to be a minor revision and has been processed as such.

D. Facility Classification

With the annual facility wide VOC limit the facility is licensed as follows:

- As a synthetic minor source of air emissions for VOC, because Fisher 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. Washer #1

Fisher has replaced an existing hot water washing unit used to clean material prior to powder coating. The replacement Washer #1 is rated at 4.0 MMBtu/hr and fires propane. The fuel fired in Washer #1 is included in the facility wide limit of 1,000,000 gallons of propane per year on a calendar year basis. Washer #1 was installed in 2023 and exhausts through its own stack, designated Boiler Vent. The stack consists of a pair of 8-inch diameter flues which release 33 feet above ground level and are separated by 20 inches.

1. BACT Findings

Following is a BACT analysis for control of emissions from Washer #1.

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

Fisher has proposed to burn only low-ash content fuel (propane) in Washer #1 and to ensure proper combustion by following maintenance practices recommended by the manufacturer. Additional add-on pollution controls are not economically feasible.

BACT for PM/PM₁₀/PM_{2.5} emissions from Washer #1 is the use of propane, proper operation and maintenance, and the emission limits listed in the tables below.

b. Sulfur Dioxide (SO₂)

Fisher has proposed to fire only propane. The use of this fuel results in minimal emissions of SO₂, and additional add-on pollution controls are not economically feasible.

BACT for SO₂ emissions from Washer #1 is the use of propane and the emission limits listed in the tables below.

c. Nitrogen Oxides (NO_x)

Fisher considered several control strategies for the control of NO_x including Selective Catalytic Reduction (SCR), Selective Non-Catalytic Reduction (SNCR), water/steam injection, flue gas recirculation (FGR), and proper operation and maintenance of the unit.

Both SCR and SNCR are technically feasible control technologies for minimizing NO_x. However, they have a negative environmental impact of emissions of unreacted ammonia. In addition, due to the initial capital cost and the annual operating costs, these systems are typically only considered cost effective for units larger than Washer #1.

Water/steam injection and FGR have similar NO_x reduction efficiencies. However, water/steam injection results in reduced boiler efficiency of approximately 5%, and FGR is not available on this unit.

BACT for NO_x emissions from Washer #1 is firing propane, proper operation and maintenance of the unit, and the emission limits listed in the tables below.

d. Carbon Monoxide (CO) and Volatile Organic Compounds (VOC)

Fisher considered several control strategies for the control of CO and VOC including oxidation catalysts, thermal oxidizers, and proper operation and maintenance of the unit.

Oxidation catalysts and thermal oxidizers both have high capital, maintenance, and operational costs considering the size of the boiler in question. These controls were determined to not be economically feasible.

BACT for CO and VOC emissions from Washer #1 is firing propane, proper operation and maintenance of the unit, and the emission limits listed in the tables below.

e. Emission Limits

The BACT emission limits for Washer #1 were based on the following:

Propane

PM/PM ₁₀ /PM _{2.5}	–	0.05 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT
SO ₂	–	0.054 lb/1000 Gal based on AP-42 Table 1.5-1 dated 7/98
NO _x	–	13.0 lb/1000 Gal based on AP-42 Table 1.5-1 dated 7/98
CO	–	7.5 lb/1000 Gal based on AP-42 Table 1.5-1 dated 7/98
VOC	–	1.0 lb/1000 Gal based on AP-42 Table 1.5-1 dated 7/98
Visible Emissions	–	06-096 C.M.R. ch. 115, BACT

The BACT emission limits for Washer #1 are the following:

Unit	Pollutant	lb/MMBtu
Washer #1	PM	0.05

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	PM _{2.5} (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Washer #1	0.20	0.20	0.20	0.01	0.57	0.33	0.04

2. Visible Emissions

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

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

Due to its size, Washer #1 is not subject to *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* 40 C.F.R. Part 60, Subpart Dc for units greater than 10 MMBtu/hr manufactured after June 9, 1989. [40 C.F.R. § 60.40c]

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

Washer #1 is not subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*, 40 C.F.R. Part 63, Subpart JJJJJ because the unit is a gas-fired boiler. [40 C.F.R. § 63.11195(e)]

C. Annual Emissions

This license amendment will not change the facility's licensed annual emissions.

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-727-71-R-A subject to the conditions found in Air Emission License A-727-71-M-R/M; in amendments A-727-71-N-M, A-727-71-O-A, A-727-71-P-A, and A-727-71-Q-A; 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 Specific Condition (22) of Air Emission License A-727-71-M-R/M:

(22) **Washer #1**

A. Washer #1 is licensed to fire propane. [06-096 C.M.R. ch. 115, BACT]

B. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Washer #1	PM	0.05	06-096 C.M.R. ch. 115, BACT

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

Emission Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	PM _{2.5} (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Washer #1	0.20	0.20	0.20	0.01	0.57	0.33	0.04

D. Visible emissions from Washer #1 shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

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The following is a new condition of Air Emission License A-727-71-M-R/A.

- (27) 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, Fisher may be required to submit additional information. Upon written request from the Department, Fisher 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 28th DAY OF SEPTEMBER, 2023.

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-727-71-M-R/A (issued 06/25/2015).

[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: 8/8/23

Date of application acceptance: 8/9/23

Date filed with the Board of Environmental Protection:

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

