



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

DEPARTMENT ORDER

AHJRLFLG LLC
Penobscot County
Old Town, Maine
A-1150-71-G-M

Departmental
Findings of Fact and Order
Air Emission License
Amendment #6

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

AHJRLFLG LLC (Archaea) was issued Air Emission License A-1150-71-A-N on February 24, 2020, for the operation of emission sources associated with a renewable natural gas (RNG) processing facility. The license was subsequently amended as follows:

Amendment #	Date Issued	Brief Description
A-1150-71-B-M	8/24/2021	Extend the deadline to commence construction
A-1150-71-C-A	10/21/2022	Address several changes to the proposed project emission units and to allow the facility to begin operation prior to the natural gas pipeline being extended
A-1150-71-D-A	9/25/2023	Add Emergency Generator #9
A-1150-71-E-M	9/30/2024	Replacement of Flare #1 with Flare #2
A-1150-71-F-A	3/12/2025	Increase SO ₂ emissions from Flare #2 and TO #1

The equipment addressed in this license amendment is located at 2828 Bennoch Road, Old Town, Maine.

Archaea has requested a minor revision to their license for a like-kind replacement of two non-emergency generators (Generators #7 and #8).

B. Emission Equipment

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

Stationary Engines

Equipment	Max. Input Capacity (MMBtu/hr)	Rated Output Capacity	Fuel Type, % sulfur	Firing Rate	Date of Manuf.
<i>Generator #7*</i>	<i>5.07</i>	<i>580 kW 744 bhp</i>	<i>distillate fuel, 0.0015%</i>	<i>37 gal/hr</i>	<i>2022</i>
<i>Generator #8*</i>	<i>5.07</i>	<i>580 kW 744 bhp</i>	<i>distillate fuel, 0.0015%</i>	<i>37 gal/hr</i>	<i>2022</i>
Generator #7	5.07	580 kW 744 bhp	distillate fuel, 0.0015%	37 gal/hr	2024
Generator #8	5.07	580 kW 744 bhp	distillate fuel, 0.0015%	37 gal/hr	2024

* Generators #7 and #8 are being replaced by two identical units of the same size, make, and model.

C. Definitions

Distillate Fuel means the following:

- Fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials (ASTM) in ASTM D396;
- Diesel fuel oil numbers 1 or 2, as defined in ASTM D975;
- Kerosene, as defined in ASTM D3699;
- Biodiesel, as defined in ASTM D6751; or
- Biodiesel blends, as defined in ASTM D7467.

Records or Logs mean either hardcopy or electronic records.

D. Application Classification

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

This amendment will not increase licensed emissions of any pollutant. A like-kind replacement of equipment is not considered a modification because, although there is a physical change, it does not result in any increase in emissions. Therefore, this amendment is determined to be a minor revision and has been processed as such.

E. Facility Classification

With the limits on annual throughput for Flare #2 and limits on SO₂ emissions from TO #1 and Flare #2, the facility is licensed as follows:

- As a synthetic minor source of air emissions for criteria pollutants, because Archaea is subject to license restrictions that keep facility emissions below major source thresholds for SO₂ and CO; 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. Generators #7 and #8

Power to the facility is provided by eight trailer-mounted generator sets. Each generator set consists of a 500 ekW electrical generator powered by a 744 bhp (580 kW) distillate-fired engine. Each trailer houses two generators, and each generator engine exhausts through its own stack.

The pair of generators in trailer #4 (Generators #7 and #8) experienced a failure requiring a complete replacement of the trailer unit. Archaea has proposed a like-kind replacement where these two generators will be replaced by units of the same name and utilizing engines of the same size, make, and model (Caterpillar C18).

1. BACT

As new, non-emergency, distillate-fired, stationary engines, Generators #7 and #8 are subject to Tier 4 emission standards for PM, NO_x, CO, and VOC pursuant to *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*, 40 C.F.R. Part 60, Subpart IIII. The proposed engines are certified to these standards and are equipped with an oxidation catalyst, diesel particulate filter, ammonia slip catalyst, and selective catalytic reduction. The performance test results associated with

that certification demonstrates that the standards are met across all load cases. Therefore, emission limits for these pollutants have been proposed which are based on the emission standards contained in 40 C.F.R. Part 60, Subpart IIII. This represents the highest level of control.

Archaea has proposed to fire only ultra-low sulfur distillate fuel (15 ppm) in Generators #7 and #8. The use of this fuel results in minimal emissions of SO₂, and additional add-on pollution controls are not economically feasible due to the cost of control equipment compared to the relatively small amount of pollutant controlled.

The Department determines that BACT for emissions from Generators #7 and #8 is the firing of distillate fuel with a sulfur content of 0.0015% by weight (15 ppm) and the emission limits listed in the table below.

2. Emission Limits

The BACT emission limits for Generators #7 and #8 were based on the following:

PM/PM ₁₀ /PM _{2.5}	– 0.03 g/kW-hr based on 40 C.F.R. Part 60, Subpart IIII, equivalent to 0.01 lb/MMBtu
SO ₂	– combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)
NO _x	– 0.67 g/kW-hr based on 40 C.F.R. Part 60, Subpart IIII
CO	– 0.50 g/kW-hr based on 06-096 C.M.R. ch. 115, BACT
VOC	– 0.19 g/kW-hr based on 40 C.F.R. Part 60, Subpart IIII
Visible Emissions	– 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for Generators #7 and #8 are the following:

Unit	Pollutant	lb/MMBtu
Generator #7	PM	0.01
Generator #8	PM	0.01

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)
Generator #7	0.04	0.04	0.4	0.01	0.86	0.64	0.24
Generator #8	0.04	0.04	0.4	0.01	0.86	0.64	0.24

These emission limits are identical to those for the previously licensed Generators #7 and #8.

Visible emissions from Generators #7 and #8 each shall not exceed 20% opacity on a six-minute block average basis.

3. Chapter 169

Stationary Generators, 06-096 C.M.R. ch. 169 (Chapter 169), is applicable to Generators #7 and #8. They are non-emergency generators powered by an engine with a rated output of less than 1,000 brake horsepower (747 kW). Chapter 169 identifies emission standards for generator engines subject to this chapter and stack height requirements for certain generator engines subject to this chapter.

a. Chapter 169 Emission Standards Requirements

For Generators #7 and #8, Archaea shall comply with the emission standards for non-emergency generators by complying with the applicable standards contained in 40 C.F.R. Part 60, Subpart IIII. [06-096 C.M.R. ch. 169, § 4(A)]

b. Chapter 169 Stack Height Requirements

Chapter 169 identifies stack height requirements for any stack used to exhaust a generator engine or combination of generator engines with a combined rated output equal to or greater than 1,000 brake horsepower (747 kW). Individual generator engines with a maximum power capacity of less than 300 kW are not included in the assessment of the combined generator power capacity exhausted through a common stack. [06-096 C.M.R. ch. 169, § 6]

Generators #7 and #8 each have engines less than 1,000 bhp and each engine exhausts through its own dedicated stack. Therefore, the stack height requirements in 06-096 C.M.R. ch. 169 do not apply to this equipment.

4. New Source Performance Standards

Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 C.F.R. Part 60, Subpart IIII is applicable to Generators #7 and #8 since these units were ordered after July 11, 2005, and manufactured after April 1, 2006. [40 C.F.R. § 60.4200] By meeting the requirements of 40 C.F.R. Part 60, Subpart IIII, the units also meet the requirements found in the *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 C.F.R. Part 63, Subpart ZZZZ. [40 C.F.R. § 63.6590(c)]

Below is a summary of the currently applicable federal 40 C.F.R. Part 60, Subpart IIII requirements.

- a. The engines shall be certified by the manufacturer as meeting the emission standards for new nonroad compression ignition engines found in 40 C.F.R. § 60.4201(a). [40 C.F.R. §§ 60.4204(b) and 4211(c)]
- b. The fuel fired in the engines shall not exceed 15 ppm sulfur (0.0015% sulfur). [40 C.F.R. § 60.4207(b)]

- c. The engines shall be operated and maintained according to the manufacturer's emission-related written instructions. Archaea may only change those emission-related settings that are permitted by the manufacturer. [40 C.F.R. §§ 60.4211(a) and (c)]
- d. Each engine's diesel particulate filter shall be installed with a backpressure monitor that notifies Archaea when the high backpressure limit of the engine is approached. [40 C.F.R. § 60.4209(b)]
- e. Archaea shall keep records of any corrective action taken after the backpressure monitor has indicated that the high backpressure limit of the engine is approached. [40 C.F.R. § 60.4213(c)]

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-1150-71-G-M subject to the conditions found in Air Emission License A-1150-71-A-N, and in amendments A-1150-71-B-M, A-1150-71-C-A, A-1150-71-D-A, A-1150-71-E-M, and A-1150-71-F-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.

The following are new Conditions:

(28) Replacement of Generators #7 and #8

1. Archaea is authorized to replace Generators #7 and #8 with like-kind equipment of the same name, size, make, and model. This equipment shall be subject to all previously

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licensed Conditions for Generators #7 and #8 included in Air Emission License A-1150-71-C-A (10/21/2022).

2. Archaea shall notify the Department in writing of the date of startup of Generators #7 and #8 within 10 working days of such occurrence.

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

DONE AND DATED IN AUGUSTA, MAINE THIS 6th DAY OF JUNE, 2025.

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-1150-71-A-N (issued 2/24/2020).

[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: 6/5/2025

Date of application acceptance: 6/5/2025

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