



DEPARTMENT ORDER

Abbott Diagnostics Scarborough, Inc.
Cumberland County
Scarborough, Maine
A-1147-71-B-A

Departmental
Findings of Fact and Order
Air Emission License
Amendment # 1

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

Abbott Diagnostics Scarborough, Inc. (Abbott) was issued Air Emission License A-1147-71-A-N on 9/16/19, for the operation of emission sources associated with their medical test kit manufacturing facility.

Abbott has requested an amendment to their license in order to remove Generators #1 and #2 and replace them with four new natural gas-fired emergency generators.

The equipment addressed in this license amendment is located at 10 Southgate Road, Scarborough, Maine.

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 (kW)	Fuel Type, % sulfur	Firing Rate (scf/hr)	Date of Manuf.	Date of Install.
Generator #4	6.04	500	Natural gas, neg.	5,862	2020	2020
Generator #5	6.04	500	Natural gas, neg.	5,862	2020	2020
Generator #6	6.04	500	Natural gas, neg.	5,862	2020	2020
Generator #7	6.04	500	Natural gas, neg.	5,862	2020	2020

Generators #1 and #2 will be removed from the facility and are hereby removed from this air emission license.

C. Application Classification

All rules, regulations, or statutes referenced in this air emission license amendment 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 Emission” 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	0.2	0.1	-0.1	100
PM ₁₀	0.2	0.1	-0.1	100
SO ₂	0.1	Neg.	-0.1	100
NO _x	1.4	2.8	1.4	100
CO	0.3	4.3	4.0	100
VOC	0.2	0.1	-0.1	50

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

D. Facility Classification

With the operating hours restriction on the emergency generators, the facility is licensed as follows:

- As a synthetic minor source of air emissions, because Abbott 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 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 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 #4, #5, #6, and #7

Abbott will operate four new Generac MG500 emergency generators. Each generator set consists of an engine and an electrical generator. The emergency generators which fire natural gas, have engines rated at 6.04 MMBtu/hr each. The emergency generators were manufactured in 2020.

1. BACT Findings

a. Nitrogen Oxides (NO_x)

Abbott considered several control strategies for the control of NO_x including Selective Non-Catalytic Reduction (SNCR) and using an engine certified under 40 C.F.R. Part 60, Subpart JJJJ.

SNCR is not economically feasible for use on engines of this size and emergency only usage.

BACT for NO_x emissions from Generators #4, #5, #6, and #7 is to use engines certified to meet the applicable requirements of 40 C.F.R. Part 60, Subpart JJJJ and the emission limits listed in the table below.

b. Carbon Monoxide (CO), Volatile Organic Compounds (VOC), and Particulate Matter (PM and PM₁₀)

Abbott has proposed to burn only low-ash content fuels (natural gas) in Generators #4, #5, #6, and #7, the use of an engine certified under 40 C.F.R. Part 60, Subpart JJJJ, and proper operation and maintenance of the engine.

BACT for CO, VOC, and PM emissions from Generators #4, #5, #6, and #7 is through the exclusive use of natural gas as a fuel, proper operation and maintenance, and the use of engines certified to meet the applicable requirements of 40 C.F.R. Part 60, Subpart JJJJ.

- c. The BACT emission limits for Generators #4, #5, #6, and #7 are based on the following:

PM/PM₁₀ - 06-096 C.M.R. ch. 115, BACT
 SO₂ - 5.88E-4 lb/MMBtu from AP-42 dated 7/00
 NO_x - 2.27 lb/MMBtu from AP-42 dated 7/00
 CO - 3.51 lb/MMBtu from AP-42 dated 7/00
 VOC - 0.0296 lb/MMBtu from AP-42 dated 7/00
 Visible Emissions - 06-096 C.M.R. ch. 115, BACT

- d. The BACT emission limits for Generators #4, #5, #6, and #7 are the following:

Unit	Pollutant	lb/MMBtu
Generator #4	PM	0.05
Generator #5	PM	0.05
Generator #6	PM	0.05
Generator #7	PM	0.05

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #4	0.30	0.30	-	13.71	21.19	0.18
Generator #5	0.30	0.30	-	13.71	21.19	0.18
Generator #6	0.30	0.30	-	13.71	21.19	0.18
Generator #7	0.30	0.30	-	13.71	21.19	0.18

Visible emissions from each of the emergency generators shall not exceed 10% opacity on a six-minute block average basis.

The Department has determined that the proposed BACT visible emission limit is more stringent than the applicable limit in 06-096 C.M.R. ch. 101. Therefore, the visible emission limit for each generator has been streamlined to the more stringent BACT limit, and only this more stringent limit shall be included in the air emission license.

2. 40 C.F.R. Part 60, Subpart JJJJ

Standards of Performance for Spark Ignition Internal Combustion Engines, 40 C.F.R. Part 60, Subpart JJJJ is applicable to the emergency engines listed above since the units were ordered after June 12, 2006 and manufactured after January 1, 2009. [40 C.F.R. § 60.4230]

By meeting the requirements of 40 C.F.R. Part 60, Subpart JJJJ, 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)]

A summary of the currently applicable federal 40 C.F.R. Part 60, Subpart JJJJ requirements is listed below.

a. Emergency Engine Designation and Operating Criteria

Under 40 C.F.R. Part 60, Subpart JJJJ, a stationary reciprocating internal combustion engine (ICE) is considered an emergency stationary ICE (emergency engine) as long as the engine is operated in accordance with the following criteria. Operation of an engine outside of the criteria specified below may cause the engine to no longer be considered an emergency engine under 40 C.F.R. Part 60, Subpart JJJJ, resulting in the engine being subject to requirements applicable to non-emergency engines.

(1) Emergency Situation Operation (On-Site)

There is no operating time limit on the use of an emergency engine to provide electrical power or mechanical work during an emergency situation. Examples of use of an emergency engine during emergency situations include the following:

- Use of an engine to produce power for critical networks or equipment (including power supplied to portions of a facility) because of failure or interruption of electric power from the local utility (or the normal power source, if the facility runs on its own power production);
- Use of an engine to mitigate an on-site disaster or equipment failure;
- Use of an engine to pump water in the case of fire, flood, natural disaster, or severe weather conditions; and
- Similar instances.

(2) Non-Emergency Situation Operation

An emergency engine may be operated up to a maximum of 100 hours per calendar year for maintenance checks, readiness testing, and other non-emergency situations as described below.

- (i) An emergency engine may be operated for a maximum of 100 hours per calendar year for 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 ICE more than 100 hours per calendar year.

- (ii) An emergency engine may be operated for up to 50 hours per calendar year for other non-emergency situations. **However, these operating hours are counted as part of the 100 hours per calendar year operating limit described in paragraph (2) and (2) (i) above.**

The 50 hours per calendar year operating limit for other non-emergency situations cannot be used for peak shaving, 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.

[40 C.F.R. §§ 60.4243(d) and 60.4248]

b. 40 C.F.R. Part 60, Subpart JJJJ Requirements

(1) Manufacturer Certification Requirement

The engines shall be certified by the manufacturer as meeting the emission standards for new nonroad spark ignition engines found in 40 C.F.R. Part 60, Subpart JJJJ, Table 1. [40 C.F.R. § 60.4233]

(2) Non-Resettable Hour Meter Requirement

A non-resettable hour meter shall be installed and operated on each engine. [40 C.F.R. § 60.4237]

(3) Operation and Maintenance Requirement

The engines shall be operated and maintained according to the manufacturer's written instructions or procedures developed by Abbott that are approved by the engine manufacturer. Abbott may only change those settings that are permitted by the manufacturer. [40 C.F.R. § 60.4243]

(4) Annual Time Limit for Maintenance and Testing

As emergency engines, the units shall each be limited to 100 hours/year for maintenance and testing. The emergency engines may operate up to 50 hours per year in non-emergency situations, but those 50 hours are included in the 100 hours total allowed for maintenance and testing. The 50 hours for non-emergency use cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [40 C.F.R. § 60.4243(d)]

(5) Recordkeeping

Abbott shall keep records that include maintenance conducted on the engines and the hours of operation of each engine recorded through the non-resettable hour meter. Documentation shall include the number of hours each unit operated for emergency purposes, the number of hours each unit operated for non-emergency purposes, and the reason each engine was in operation during each time. [40 C.F.R. § 60.4245(b)]

C. 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. Only licensed equipment is included, i.e., emissions from insignificant activities are excluded. Similarly, unquantifiable fugitive particulate matter emissions are not included. Maximum potential emissions were calculated based on operating Generators #4, #5, #6, and #7 for 100 hrs/yr each.

Please note, this information provides the basis for fee calculation only and should not be construed to 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	SO ₂	NO _x	CO	VOC
Generators #4, #5, #6, and #7	0.1	0.1	Neg.	2.8	4.3	0.1
Total TPY	0.1	0.1	Neg.	2.8	4.3	0.1

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
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-1147-71-B-A subject to the conditions found in Air Emission License A-1147-71-A-N 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 Conditions (16) of Air Emission License A-1147-71-A-N.

(16) Generators #4, #5, #6, and #7

A. Emissions shall not exceed the following:

Unit	Pollutant	lb/MMBtu	Origin and Authority
Generator #4	PM	0.05	06-096 C.M.R. ch. 115, BACT
Generator #5	PM	0.05	06-096 C.M.R. ch. 115, BACT
Generator #6	PM	0.05	06-096 C.M.R. ch. 115, BACT
Generator #7	PM	0.05	06-096 C.M.R. ch. 115, BACT

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

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #4	0.30	0.30	-	13.71	21.19	0.18
Generator #5	0.30	0.30	-	13.71	21.19	0.18
Generator #6	0.30	0.30	-	13.71	21.19	0.18
Generator #7	0.30	0.30	-	13.71	21.19	0.18

C. Visible Emissions

Visible emissions from each of the emergency generators shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

D. The Emergency Generators shall meet the applicable requirements of 40 C.F.R. Part 60, Subpart JJJJ, including the following:
[incorporated under 06-096 C.M.R. ch. 115, BACT]

1. Manufacturer Certification

The engines shall be certified by the manufacturer as meeting the emission standards for new nonroad spark ignition engines found in 40 C.F.R. Part 60, Subpart JJJJ, Table 1.

2. Non-Resettable Hour Meter

A non-resettable hour meter shall be installed and operated on each engine.
[40 C.F.R. § 60.4237 and 06-096 C.M.R. ch. 115, BACT]

3. Annual Time Limit for Maintenance and Testing

a. As emergency engines, the units shall each be limited to 100 hours/year for maintenance checks and readiness testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, 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). The limits are based on a calendar year. Compliance shall be demonstrated by records (electronic or written log) of all engine operating hours.

[40 C.F.R. § 60.4243(d) and 06-096 C.M.R. ch. 115, BACT]

- b. Abbott shall keep records that include maintenance conducted on the engines and the hours of operation of each engine recorded through the non-resettable hour meter. Documentation shall include the number of hours each unit operated for emergency purposes, the number of hours each unit operated for non-emergency purposes, and the reason each engine was in operation during each time. [40 C.F.R. § 60.4245(b) and 06-096 C.M.R. ch. 115, BACT]
4. Operation and Maintenance
Each engine shall be operated and maintained according to the manufacturer's written instructions or procedures developed by Abbott that are approved by the engine manufacturer. Abbott may only change those settings that are permitted by the manufacturer. [40 C.F.R. § 60.4243 and 06-096 C.M.R. ch. 115, BACT]

Condition (17) of Air Emission License A-1147-71-A-N is hereby removed.

DONE AND DATED IN AUGUSTA, MAINE THIS 18th DAY OF AUGUST, 2020.

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-1147-71-A-N.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 7/24/20

Date of application acceptance: 7/27/20

Date filed with the Board of Environmental Protection:

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

