

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: **Scheduled Inspection**

N707752086

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|--|-------------------------------|----------------------------|
| FACILITY: Emergent BioSolutions | | SRN / ID: N7077 |
| LOCATION: 3500 N Martin Luther King Jr Blvd, LANSING | | DISTRICT: Lansing |
| CITY: LANSING | | COUNTY: INGHAM |
| CONTACT: Heather Monaghan , EHS Manager | | ACTIVITY DATE: 12/19/2019 |
| STAFF: Michelle Luplow | COMPLIANCE STATUS: Compliance | SOURCE CLASS: <i>MINOR</i> |
| SUBJECT: Scheduled, unannounced inspection to determine compliance with PTI No's 76-711 and 36-06. | | |
| RESOLVED COMPLAINTS: | | |

Inspected by: Michelle Luplow

Personnel Present: Ron Poore, EHS Administrator

Keith Gallagher, Powerhouse Craftworker (gallagherk@ebsi.com)

Personnel offsite: Heather Monaghan, EHS Manager (monaghanh@ebsi.com)

Purpose

Conduct an unannounced, scheduled compliance inspection of Emergent BioSolutions (Emergent) by determining compliance with Permit to Install (PTI) No's 76-711 (biowaste incinerator) and 36-06 (emergency generators). The facility was last inspected in May 2005.

Facility Background/Regulatory Overview

Emergent, formerly BioPort Corporation (they changed their name in 2006), is a biopharmaceuticals company, specializing in vaccines.

In addition to the biowaste incinerator, Emergent also has 7 emergency generators and 3 boilers. Tables 1 and 2 list equipment located onsite, including specifics on the generators and boilers with respect to federal regulation applicable.

The EGLE AQD no longer issues General Permits to Install for Diesel Fuel-Fired Engine Generators with a Maximum Capacity of Five Megawatts as of July 6, 2010 due to the new federal National Ambient Air Quality Standard (NAAQS) for NO₂, but those that were issued still remain in effect. Emergent's General PTI for diesel fuel-fired engines was issued in February 2006.

RICE MACT ZZZZ Emergency Engines at Area Source of HAP

Emergent has 7 emergency generators (see Table 2), 5 of which appear to be existing compression ignition emergency engines, according to the 40 CFR Part 63 definition of "existing."

The EGLE Air Quality Division currently does not have the delegated authority to enforce the RICE MACT ZZZZ for area sources. I will inform Emergent staff that these engines may be subject to the RICE MACT ZZZZ, that they must evaluate whether these engines are truly subject and must ensure compliance with this regulation. I will inform them that compliance checks for this regulation are conducted by the EPA.

NSPS for Compression Ignition Internal Combustion Engines, Subpart IIII

There are two engines that are subject to NSPS Subpart IIII for compression ignition emergency engines. I am providing Emergent staff with a link to the EPA's NSPS Subpart IIII and JJJJ decision tree tool and I am requesting that they determine which categories within the NSPS Subpart IIII these two engines fall under and the regulations that pertain to operating these two engines.

Boiler MACT NESHAP Subpart JJJJJ for area sources of HAPs

All 3 boilers are exempt from the Boiler MACT NESHAP Subpart JJJJJ because they are classified as "gas-fired boilers" as defined in 40 CFR 63.11237. To be considered a gas-fired boiler, the boiler must burn gaseous fuels not combined with any solid fuels and burn liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel. The periodic testing of liquid fuel should not exceed a combined total of 48 hours during any calendar year.

Ron Poore and Keith Gallagher both mentioned that Emergent was possibly considering replacing the boilers and engines with Heat Recovery Steam Generating (HRSG) cogeneration units, or replace all engines with two

large generators. I informed them that if one of these projects is pursued, they will need to evaluate whether the units need a permit to install prior to installation of the HRSG units, and obtain a permit if necessary.

Table 1. Equipment located onsite

| Emission Unit | Descriptions | Federal Reg Applicability | Installation Date | PTI/ Exemption |
|---------------------------|---|--|---|--------------------|
| Consumat C-32 incinerator | Used to incinerate animal carcasses. Rated at 85 lb/hr | NA | 1970's | PTI 76-711 |
| FGENGINES | 1 or more diesel fuel-fired RICE with a maximum nameplate capacity of 5 MW for power generation including emergency back-up and/or peak power shaving | See Table 2. | See Table 2 for list of all engines, including those covered under this PTI | General PTI 36-06 |
| 3 Keystone Boilers | All natural gas-fired (no fuel backup) used to heat Emergent's buildings Rated at 34 mmbtu/hr each | Not subject to the NESHAP Subpart 6J (area source MACT) because the units are natural gas-fired. Not subject to the NSPS Subpart Dc because construction occurred before June 9, 1989 | 1972 | Rule 282(2) (b)(i) |

Table 2. Emergency Engines/Generators located onsite

| Engine | Description | Installation Date | Manufacture Date | PTI/Exemption Federal Regulation |
|--|--|-------------------|------------------|--|
| Cummins diesel-fired 1250 kW (1.3 MW) emergency engine | Model# QSKTA50-GE Serial #:75702-79 2220 HP 5.65 MMBtu/hr | 2007 | 3/23/07 | General PTI 36-06 NSPS Subpart IIII |
| Cummins diesel-fired 600 kW emergency engine | Model 100REOZJ Serial # 608341 820 HP | TBD | March 1993 | Rule 285(2)(g) NESHAP Subpart ZZZZ TBD |

| | | | | |
|---|---|------|---------------|---|
| | 2.1 MMBtu/hr | | | |
| Cummins diesel-fired 600 kW emergency engine | Model DTA-28-G5 Serial # 57648 820 HP 2.1 MMBtu/hr | 1998 | December 1998 | Rule 285(2)(g) NESHAP Subpart ZZZZ TBD |
| Detroit Diesel diesel-fired 405 kW emergency engine | Family 4DDXL14 Serial # HI801MXT 665 HP 1.7 MMBtu/hr | 2005 | June 2005 | Rule 285(2)(g) NESHAP Subpart ZZZZ TBD |
| Cummins diesel-fired 600 kW emergency engine | Model DTA 28G2 Series 70142 900 HP 2.3 MMBtu/hr | 1994 | March 1993 | Rule 285(2)(g) NESHAP Subpart ZZZZ TBD |
| Cummins diesel-fired 230 kW emergency engine | Model LTA10-G1 Serial # 10279 380 HP 1 MMBtu/hr | 2010 | June 2005 | General PTI 36-06 NESHAP Subpart ZZZZ TBD |
| VolvoPenta diesel-fired 500 kW emergency engine | Model TAD1641GE Serial # D16-042031 -C3-A 650 HP 1.6 MMBtu/hr | 2010 | 2010 | General PTI 36-06 NSPS Subpart IIII |

Inspection

This was an unannounced scheduled compliance inspection. At approximately 11:15 a.m. on December 19, 2019 I arrived at Emergent. Visitors are required to use the parking lot across the street, to the north of the facility entrance, and use the crosswalk south of the parking lot. Upon entry into the facility, visitors are required to check in at the guard station and provide a driver's license for personal identification. The AQD inspector badge is not sufficient to meet Emergent's requirements. At approximately 11:45 a.m. I met with Ron Poore, EHS Administrator, and explained to him that I was there to conduct an inspection of the incinerator as well as all emergency generators and boilers onsite, and to receive a tour of the facility. I provided him with a June 2019 Permit to Install Exemptions Handbook. We then met up with Keith Gallagher, Powerhouse craftworker, to continue with the inspection of the diesel engines and the boilers.

PTI No. 76-711 – Consumat C-32 incinerator

The Consumat C-32 incinerator was used for incineration of animal carcasses, as a backup to Emergent's tissue digester, which is the primary means of carcass disposal. R. Poore said that it used to be operated on a monthly basis for maintenance and readiness purposes, but that the unit continued to fail. The Centers for Disease Control (CDC) does not allow disposal of animal carcasses in units that fail (incomplete incineration)

and therefore the tissue digester is now Emergent's sole means for disposing of animal carcasses. R. Poore said that if the tissue digester goes down, they have a hazardous waste hauler stage the animal carcasses until the unit can get repaired, then the carcasses are returned to Emergent for disposal. The incinerator was last used in 2018 and is present onsite, but all electrical and gas hookups have been removed from the equipment, rendering the equipment permanently inoperable.

I will request that PTI 76-711 be voided because the equipment has been rendered permanently inoperable.

General PTI 36-06 – Diesel-fired engine generators

The General PTI covers 2 of Emergent's 7 diesel-fired engines: the Cummins diesel-fired emergency engine (serial # 75702-79) and the Volvopenta diesel-fired emergency engine (serial # D16-042031-C3-A) because they were both installed after the issuance date of the permit (February 8, 2006). The remaining 5 engines are presumably exempt from a permit to install per Rule 285(2)(g) (pending a Rule 278a analysis). See Table 1 for all engine specifications.

Emission Limits & Testing

The 2 engines are limited to 515 lb NOx/1000 gallons of diesel, and verification that the engines are meeting this limit is required to be done via stack testing at EGLE AQD's request. At this time it is my professional judgment that NOx emissions from these units do not need to be verified because the engines have been satisfactorily maintained (see discussion of maintenance under the *Recordkeeping* section of this report).

Material Usage Limits, Monitoring & Recordkeeping

Only diesel fuel is allowed to be combusted in these units and combined, the units are only allowed to use up to 136,000 gallons per 12-month rolling period. Fuel use is required to be recorded on a monthly and 12-month rolling basis.

K. Gallagher informed me that these engines only burn diesel fuel. Heather Monagahn, EHS Manager, provided me with diesel purchase record summaries on a monthly basis for calendar years 2018 and 2019 (attached). Although required, Emergent did not create 12-month rolling summaries. Because the gallons of diesel purchased is a worst-case usage rate and total quantities used over 2018 and 2019 is much less than the 136,000-limit for a 12-month rolling period, I will not send a violation notice at this time, but I will ensure that they know purchase records at a minimum and usage records at a maximum are required to be totaled and recorded on a monthly and 12-month rolling basis in order to be in compliance with the permit. The 12-month rolling diesel purchased from December 2018 – November 2019 was 3062.2 gallons based on my calculations.

The sulfur content of the diesel is required to be determined if the electricity from the generators is sold to a utility power distribution system. R. Poore said that these engines are only used for power loss at the facility and therefore sulfur content determinations are not required at this time.

Process/Operational Limits

The total capacity for the 2 engines shall not exceed 5 MW. The Cummins engine is 1.3 MW and the Volvopenta engine is 0.5 MW, both meeting the wattage limit.

Recordkeeping

Emergent is required to keep records of the date, duration, and description of any malfunction on the engines and any maintenance performed. I was told by K. Gallagher that there have been no malfunctions for any of the engines. I requested maintenance records for the past year (2019). K. Gallagher provided me with maintenance records for all engines; I have attached maintenance records for the two permitted engines only. K. Gallagher said that he spoke to Emergent's engine service contractor who said that manufacturers recommend service every 250 hours of use or every 365 days for oil changes, and batteries and coolant should be replaced every 4-5 years. He said that Emergent staff perform weekly checks on all generators that consist of verifying the oil and coolant levels, checking for leaks, and acid level inside batteries, and includes maintenance/readiness testing ½ hour per week.

The annual maintenance is conducted by Total Energy Systems and includes checking the coolant, lubrication, air intake, exhaust, and fuel systems, as well as 2-hour load bank tests. The Cummins engine's last annual inspection was on 2/26/2019 and the Volvopenta engine's last annual inspection was 2/28/19.

Stack/Vent Restrictions

The exhaust gases from these two engines are required to be discharged unobstructed vertically upwards. Both stacks are oriented vertically upward and unobstructed. R. Poore said that the Cummins engine's stack was modified in order to ensure that the exhaust from the engine was not near the air-intake for the facility: the stack was installed horizontally and then directed vertically to meet this objective. There are no rain caps on the engine exhaust.

Compliance Statement

It appears that Emergent is in compliance with PTI's 36-06 and 76-711 at this time. I will request that Emergent provide a Rule 278a demonstration for the 7 engines as well as the 3 boilers. The permitted engines may be eligible for exemption under Rule 285(2)(g) if Emergent can demonstrate that it meets Rule 278a. Future discussions will be ongoing as to whether emergent would like to pursue 36-06 permit avoidance or continue to operate the engines by the permit.

Additionally, I will work with Emergent staff in the federal regulation applicability determinations for their NSPS-subject and MACT NESHAP-subject engines.

NAME



DATE

4/13/2020

SUPERVISOR



