

Emailed

3/8/2021



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

DIVISION OF AIR QUALITY
STATE STREET COMMONS
100 W. WATER STREET, SUITE 6A
DOVER, DELAWARE 19904

ENGINEERING &
COMPLIANCE

PHONE
(302) 739-9402

March 8, 2021

FMC Stine Research Center
1090 Elkton Road
Newark, Delaware 19714

ATTENTION: Patricia Adcock
Site Manager

**SUBJECT: "Draft/Proposed" Federally Enforceable Construction Permit
Permit: APC-2021/0073-CONSTRUCTION (NSPS)(GACT)(FE)**

Dear Ms. Adcock:

Attached you will find a copy of "Draft/Proposed" Permit: **APC-2021/0073-CONSTRUCTION (NSPS)(GACT)(FE)** for one (1) 1,000 kW (1,490 HP) Cummins Model 100DQFAD emergency generator. This permit is being made federally enforceable so its terms and conditions can be transferred to your facility's Title V Operating Permit (**AQM-003/00279 (Renewal 4)**) via the administrative permit amendment process. Please reference 7 DE Admin. Code 1102 Sections 11.2.10, 12.4 and 12.5 for the requirements of this process.

In order to make the terms and conditions of this Permit: **APC-2021/0073-CONSTRUCTION(NSPS)(GACT)(FE)** federally enforceable, notice has been sent to EPA and affected states, and a Public Notice was advertised in the Sunday News Journal and Delaware State News on Sunday, March 7, 2021 to commence a thirty (30) day comment period. The public comment period will be no less than thirty (30) days in accordance with 7 DE Admin Code 1130. The public comment period ends April 6, 2021. Any comments should be brought to the Department's attention on or before April 6, 2021 and mailed to the following address:

State of Delaware - DNREC
Division of Air Quality
State Street Commons
100 W. Water Street, Suite 6A
Dover, DE 19904
ATTN: David Fees, Division Director

The Department requests that you mail the original and one (1) copy if you submit comments.

The "Draft/Proposed" permit is being submitted to EPA for concurrent processing. Please note that the EPA can comment during the 30 day public notice period and can approve or deny the permit during the entire 45 day EPA review period.

DRAFT/PROPOSED Permit: APC-2021/0073-CONSTRUCTION (NSPS)(GACT)(FE)

FMC Stine Research Center

1,000 kW (1490 HP) Emergency Generator

March 8, 2021

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If the Department receives significant comments on the "Draft/Proposed" permit, comments will be evaluated, responses will be prepared, and the permit will be revised as necessary. The permit will then be submitted to you and the EPA as "Proposed" as a standard consecutive forty-five (45) day review period.

Any questions concerning the attached "Draft/Proposed" permit may be directed to Kevin Njoroge at 302-739-9401.

Sincerely,



Joanna L. French, P.E.
Managing Engineer
Engineering & Compliance Branch

ADM:JLF:KMN

F:\EngAndCompliance\KMN\FMC Stine Research Center\kmn21015 FMC Stine EGEN Letter to Co.doc

pc: Dover Title V File
 Angela D. Marconi, P.E.
 Kevin Njoroge



STATE OF DELAWARE
**DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL**

DIVISION OF AIR QUALITY
STATE STREET COMMONS
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DOVER, DELAWARE 19904

**ENGINEERING &
COMPLIANCE**

PHONE
(302) 739-9402

March 7, 2021

DRAFT/PROPOSED Permit: APC-2021/0073-CONSTRUCTION (NSPS)(GACT)(FE)

FMC Stine Research Center
One (1) 1,000 kW (1490 HP) Cummins Emergency Generator for Emergency Use

FMC Stine Research Center
1090 Elkton Road
Newark, DE 19711

ATTENTION: Patricia Adcock
Site Manager

Dear Ms. Adcock:

Pursuant to 7 **DE Admin. Code** 1102 Section 2 and Section 11, approval by the Department of Natural Resources and Environmental Control (the Department) is hereby granted for the construction of one (1) 1,000 kW (1,490 HP) Cummins Model 100DQFAD emergency generator and the associated fuel oil storage tank for emergency use located at the FMC Stine Research Center facility in Newark, Delaware, in accordance with the application submitted on Form Nos. AQM-1, AQM-2, AQM-3.3, AQM-5, and letter dated January 20, 2021 signed by Patricia Adcock, Site Manager.

This permit is issued subject to the following conditions all of which are federally enforceable except Condition 6.1 and 2.3:

1. General Provisions

- 1.1. This permit expires on April 21, 2024. If the equipment covered by this permit will not be constructed by April 21, 2024 an application for renewal of this construction permit must be submitted by March 7, 2024.
- 1.2. The project shall be constructed in accordance with the application described above. If any changes are necessary, revised plans must be submitted and supplemental approval issued prior to actual construction.
- 1.3. Representatives of the Department may, at any reasonable time, inspect this facility.

- 1.4. This permit may not be transferred to another location or to another piece of equipment or process.
- 1.5. The emergency generator shall not be transferred off-site without first notifying the Department. Whoever becomes the new owner or operator of this generator within the State of Delaware shall apply for a construction permit.
- 1.6. This permit may not be transferred to another person, owner, or operator unless the transfer has been approved in advance by the Department. Approval (or disapproval) of the permit transfer will be provided by the Department in writing. A request for a permit transfer shall be received by the Department at least 30 days before the date of the requested permit transfer. This request shall include:
 - 1.6.1. Signed letters from each person stating the permit transfer is agreeable to each person; and
 - 1.6.2. An Applicant Background Information Questionnaire pursuant to 7 Del C, Chapter 79 if the person receiving the permit has not been issued any permits by the Department in the previous five years.
- 1.7. The applicant shall, upon completion of the construction, installation, or alteration, request that the Department grant approval to operate.
 - 1.7.1. A separate application to operate pursuant to 7 **DE Admin. Code** 1102 does not need to be submitted to the Department for the equipment or process covered by this construction permit. Upon a satisfactory demonstration by an on-site inspection that the equipment or process complies with all of the terms and conditions of this permit, the Department shall issue a 7 **DE Admin. Code** 1102 Operating Permit for this equipment or process.
 - 1.7.2. The applicant shall notify the Department sufficiently in advance of the demonstration and shall obtain the Department's prior concurrence of the operating factors, time period, and other pertinent details relating to the demonstration.
 - 1.7.3. The provisions of 7 **DE Admin. Code** 1102 Sections 2.1 and 11.3 shall not apply to the operation of equipment or processes for the purposes of initially demonstrating satisfactory performance to the Department following construction, installation, modification, or alteration of the equipment or processes.
- 1.8. The owner or operator shall not construct, install, or alter any equipment or facility or air contaminant control device which will emit or prevent the emission of an air contaminant prior to submitting an application to the Department pursuant to 7 **DE Admin. Code** 1102, and, when applicable 7 **DE Admin. Code** 1125, and receiving approval of such application from the Department; except as exempted in 7 **DE Admin. Code** 1102 Section 2.2.

2. Emission Limitations

- 2.1. The emergency generator shall meet the applicable emissions standards set by the *US EPA* for non-road engines (Title 40 CFR Part 89, Section 89.112(a), dated July 1, 2007.)
- 2.2. No person shall cause or allow the emission of visible air contaminants and/or smoke from a stationary or mobile source, the shade or appearance of which is greater than 20% percent opacity for an aggregate of more than three minutes in any one hour or more than 15 minutes in any 24 hour period.
- 2.3. Odors from this source shall not be detectable beyond the plant property line in sufficient quantities such as to cause a condition of air pollution.

3. Operational Limitations

- 3.1. The emergency generator may only operate for an unlimited number of hours during an emergency as described in Condition 3.5.
- 3.2. The emergency generator shall operate for a maximum of 100 hours for maintenance checks and readiness testing.
- 3.3. The emergency generator may operate for an unlimited number of hours during testing or for maintenance purposes, pursuant to the definition of emergency generator as defined in 7 **DE Admin. Code** 1144, except as restricted by Condition 3.6.
- 3.4. Diesel fuel or biodiesel blend for use in the emergency generator shall have the per gallon diesel fuel standards of:
 - 3.4.1. A sulfur content equal to or less than 0.0015% by weight.
 - 3.4.2. A Cetane index or aromatic content, as follows:
 - 3.4.2.1. A minimum Cetane index of 40; or
 - 3.4.2.2. A maximum aromatic content of 35 volume percent.
- 3.5. The emergency generator may operate only during an emergency as defined below:
 - 3.5.1. An electrical power outage due to: a failure of the electrical grid; on-site disaster; local equipment failure; or public service emergencies such as flood, fire, natural disaster, or severe weather conditions (e.g. hurricane, tornado, blizzard, etc.); or
 - 3.5.2. When there is a deviation of voltage or frequency from the electrical provider to the premises of 3% or greater above, or 5% or greater below, standard voltage or frequency.
- 3.6. The emergency generator shall not be operated for testing or maintenance purposes before 5 p.m. on any day which has a Ground Level Ozone Pollution

Forecast or Particulate Forecast of "Code Purple," "Code Red," or "Code Orange" as announced by the Department

The owner or operator may receive "Code Purple," "Code Red," or "Code Orange" announcements a day in advance by subscribing to the DNREC Ozone Alert List: <https://dnrec.alpha.delaware.gov/dnrec-e-mail-lists/>

- 3.7. Despite Condition 3.6, the emergency generator may be tested on any day that such testing is required to meet National Fire Protection Association (NFPA) or The Joint Commission Standards.
- 3.8. The emergency generator shall not be operated in conjunction with a voluntary demand-reduction program or any other interruptible power supply arrangement with a utility, other market participant, or system operator (e.g. Delmarva Power, Delaware Electric Cooperative, PJM, etc.).
- 3.9. The emergency generator shall be equipped with a properly functioning non-resettable hour metering device.
- 3.10. The emergency generator shall be serviced annually by a manufacturer's representative or by personnel trained to perform maintenance according to the manufacturer's recommendations.
- 3.11. The owner or operator shall operate the emergency generator in conformance with the generator manufacturer's instructions, such as following maintenance and operating requirements to help minimize emissions.
- 3.12. No owner or operator shall build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere.
- 3.13. At all times, including periods of startup, shutdown, and malfunction, the owner or operator shall, to the extent practicable, maintain and operate the facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating procedures are being used will be based on information available to the Department which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.
- 3.14. All structural and mechanical components of the equipment or process covered by this Permit shall be maintained in proper operating condition, as per manufacturer's maintenance schedule.

4. Testing and Monitoring Requirements

- 4.1. The Department reserves the right to require that the owner or operator perform emission tests using methods approved in advance by the Department.

- 4.2. If the emergency generator is not certified by the manufacturer to meet the applicable emissions standards set by the US EPA for non-road engines (Title 40 CFR Part 89, Section 89.112(a), dated July 1, 2007), the owner or operator shall demonstrate compliance with 7 **DE Admin. Code** 1144 through testing using the applicable EPA Reference Methods, California Air Resources Board methods, or equivalent test methods approved in advance by the Department.
- 4.3. The owner or operator shall perform the following visible emission testing:
 - 4.3.1. Once a quarter the emergency generator shall be observed for the presence or absence of visible emissions for at least five minutes while the equipment is operating. The five minute observation window must start as soon as generator power is stabilized. Compliance with this condition shall be demonstrated by the maintenance of a bound log of visible emissions. If visible emissions are observed during the five minute observation period, the owner or operator shall take actions per the manufacturer's recommendations to correct the problem as soon as possible. After corrective actions are taken, the owner or operator shall observe visible emissions while the equipment is next operated or tested. If visible emissions still persist, these steps (observe, correct, document) shall be repeated until visible emissions are not observed.
 - 4.3.2. The procedure outlined in Condition 4.3.1 does not require that the opacity of the emissions be determined. Since the procedure requires only the determination of whether visible emissions occur and does not require the determination of opacity levels, observer certification according to the procedures of EPA Reference Method 9 (40 CFR 60, Appendix A) is not required. However, it is necessary that the observer is educated on the general procedures for determining the presence of visible emissions. At a minimum, the observer must be trained and knowledgeable regarding the effects on visibility of emissions caused by background contrast, ambient lighting, observer position relative to lighting, wind, and the presence of uncombined water (condensing water vapor).
- 4.4. Proof of the sulfur content of each shipment of diesel fuel or biodiesel blend shall be maintained. Records as described in Condition 5.3 shall show that the sulfur content of each shipment of diesel fuel or biodiesel blend was determined using one of the following sampling and testing methods as described in 40 CFR Section 80.580 (July 1, 2012):
 - 4.4.1. Manual Sampling: American Society for Testing and Materials (ASTM) method D4057-95 or D5842-95 if there is no contamination present that could affect the sulfur testing requirements;
 - 4.4.2. Automatic Sampling: ASTM method D4177-95;
 - 4.4.3. Sulfur Testing Method: ASTM method D2622-03;

4.4.4. Alternative Sulfur Testing Method: ASTM methods D4294-03, D5453-03a, or D6920-03, provided that the refiner or importer test result is correlated with the appropriate method specified in Condition 4.4.3; or

4.4.5. Alternative Sulfur Testing Method: Sulfur content may be determined using any test method approved under 40 CFR Part 80, Subpart I, Section 80.585.

4.5. As an alternative to 4.4, the owner or operator may have the fuel in the emergency generator's associated storage tank certified by a third party laboratory after each shipment of fuel. This certification shall identify the percentage of sulfur (by weight dry basis) and the method used to determine the sulfur content.

4.6. The owner or operator shall monitor the following information:

4.6.1. The date, time, duration, and reason for each emergency generator startup; and

4.6.2. The monthly fuel usage.

5. Record Keeping Requirements

5.1. The owner or operator shall maintain all records necessary for determining compliance with this permit in a readily accessible location for five years and shall make these records available to the Department upon written or verbal request.

5.2. The following information shall be recorded, initialed and maintained in a log as follows:

5.2.1. The date, time, duration, and reason for each start-up of the emergency generator. The log shall include the dates and descriptions of inspections, testing, operator training, and maintenance performed;

5.2.2. The total hours of operation for each month and the cumulative 12 month rolling period shall be calculated and recorded within 15 days of the end of each calendar month;

5.2.3. The total hours during which testing or maintenance occurred shall be calculated for each month and the cumulative 12 month rolling period and recorded within 15 days of the end of each calendar month. A brief description of each testing or maintenance performed shall be included;

5.2.4. The total fuel usage for each month and the cumulative 12 month rolling period shall be calculated and recorded within 15 days of the end of each calendar month;

5.2.5. Visible emission records in accordance with Condition 4.3.

- 5.3. The owner or operator shall maintain a copy of the fuel oil certification. The sulfur content of the diesel fuel or biodiesel must be included in the shipping receipt and fuel certification for each diesel fuel or biodiesel blend shipment. The fuel certification must identify the type of fuel delivered and the percentage of sulfur (by dry weight basis) and method used to determine the sulfur content.
- 5.4. The owner or operator shall submit and maintain a record of proper initial notification as required by 7 **DE Admin. Code** 1144.
- 5.5. The owner or operator shall maintain a copy of the emergency generator's manufacturer's maintenance and operating recommendations at the facility.
- 5.6. The owner or operator shall maintain a copy of the emergency generator's manufacturer's certification that the engine has been certified to meet the currently applicable US EPA non-road emissions standards (Title 40 CFR Part 89, Section 89.112(a), dated July 1, 2007). If such certification is not available, the owner or operator shall maintain records of any testing conducted pursuant to Condition 4.2.
- 5.7. The owner or operator shall maintain a copy of the emergency generator's annual maintenance service at the facility.

6. Reporting Requirements

- 6.1. Emissions in excess of any permit condition or emissions which create a condition of air pollution shall be reported to the Department immediately upon discovery by calling the Environmental Emergency Notification and Complaint number, (800) 662-8802.
- 6.2. In addition to complying with Condition 6.1 of this permit, any reporting required by 7 **DE Admin. Code** 1203 "**Reporting of a Discharge of a Pollutant or an Air Contaminant**", and any other reporting requirements mandated by the State of Delaware, the owner or operator shall, for each occurrence of excess emissions, within 30 calendar days of becoming aware of such occurrence, supply the Department in writing with the following information:
 - 6.2.1. The name and location of the facility;
 - 6.2.2. The subject source(s) that caused the excess emissions;
 - 6.2.3. The time and date of the first observation of the excess emissions;
 - 6.2.4. The cause and expected duration of the excess emissions;
 - 6.2.5. For sources subject to numerical emission limitations, the estimated rate of emissions (expressed in the units of the applicable emission limitation) and the operating data and calculations used in determining the magnitude of the excess emissions; and
 - 6.2.6. The proposed corrective actions and schedule to correct the conditions causing the excess emissions.

6.3. If the emergency generator is to be reclassified from an emergency generator to a distributed generator, the owner or operator shall submit to the Department a letter stating that the generator is to be reclassified. Reclassification shall not occur without written permission from the Department.

6.4. One original and one copy of all required reports shall be sent to the address below:

Division of Air Quality
State Street Commons
100 W. Water Street, Suite 6 A
Dover, DE 19904

7. Administrative Conditions

7.1. This permit shall be made available on the premises.

7.2. Failure to comply with the provisions of this permit may be grounds for suspension or revocation.

Sincerely,

Angela D. Marconi, P.E.
Program Manager
Engineering & Compliance Branch

ADM:JLF:KMN

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pc: Dover Title V File
Joanna L. French, P.E.
Kevin Njoroge

MEMORANDUM

TO: Angela D. Marconi, P.E. *JLF* for ADM
THROUGH: Joanna L. French, P.E. *JLF*
FROM: Kevin Njoroge *KN*
**SUBJECT: FMC Stine Research Center
DRAFT/PROPOSED Permit: APC-2021/0073-CONSTRUCTION (NSPS)(GACT)(FE)
1,000 kW (1490 HP) Diesel Fired Emergency Generator for building S320**

DATE: February 22, 2021

BACKGROUND

FMC Stine Research Center (FMC), located at 1090 Elkton Road, Newark, submitted an application dated January 20, 2021 for the construction of one (1) 1,000 kW Cummins emergency generator. The emergency generator will be diesel fired and located at S320 building. The equipment will be used by Corteva, a tenant at FMC. Corteva is expanding their operations and will own the generator, however FMC will be the operator. FMC will be in charge of the testing and maintenance of this new emergency generator which will be designated as EG-12.

FMC Stine Research Center operates a Research and Development facility under **Permit: AQM-003/00279 (Renewal 4)**, dated May 1, 2020. It is located in New Castle County. New Castle County is classified as a severe non-attainment area for ozone. FMC Stine Research Center is a major source due to its potential to emit greater than 25 tons per year of NO_x, a pre-cursor to the formation of ozone and greater than 100,000 tons per year of CO₂. The Standard Industrial Classification for the facility is 8731 Research & Development and the North American Industry Classification System code is 541712 (revised due to code changes in 2007 from 541710 to 541712) Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology). Below is a list of the emissions units permitted at the facility.

Emission Unit ID	Emission Point ID	Emission Unit Description
S-5	S-5	Boiler No. 5 having a maximum rated heat input of 47.6 mmBTU/hr, firing Natural gas.
S-6	S-6	Boiler No. 6 having a maximum rated heat input of 49.7 mmBTU/hr, firing Natural gas.
S-7	S-7	Boiler No. 7 having a maximum rated heat input of 96.6 mmBTU/hr, firing Natural gas as a primary and #2 Fuel oil in case of natural gas curtailment.
EG-5	EG-5	Emergency Generator No. 5 (in building S-155) with an output of 600 kW, firing diesel fuel.
EG- 6 & 7	EG- 6 & 7	Emergency Generators No. 6 and 7 (in building S-320) with an output of 1000 kW, firing diesel fuel.

MEMORANDUM**DRAFT/PROPOSED Permit: APC-2021/0073-CONSTRUCTION (NSPS)(GACT)(FE)****FMC Stine Research Center****1,000 kW (1490 HP) Emergency Generator**

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Emission Unit ID	Emission Point ID	Emission Unit Description
EG-8	EG-8	Emergency Generator No. 8 (in building S-315) with an output of 600 kW, firing diesel fuel.
R & D	R & D	R & D Activities
14	Two Spray Chambers	Two (2) Spray Chamber units located in Building S-200
Facility Wide	Facility Wide	Facility Wide Applicable Requirements

The following equipment have been identified as insignificant activities under 7 **DE Admin. Code** 1130:

Emission Unit ID	Emission Point ID	Description	Basis
EG-9	EG-9	Emergency Generator No. 9 (in building S-108) with an output of 135 kW, firing diesel fuel.	7 DE Admin. Code 1102 App. A Section 32
EG-10	EG-10	Emergency Generator No. 10 (in building S-200) with an output of 50 kW, firing diesel fuel.	7 DE Admin. Code 1102 App. A Section 32
EG-11	EG-11	Emergency Generator No. 10 (in building S-102) with an output of 175 kW, firing diesel fuel.	7 DE Admin. Code 1102 App. A Section 32
12	Fire Pump 1	Caterpillar Fire pump (in building S-148) with an output of 251 HP, firing diesel fuel.	7 DE Admin. Code 1102 App. A Section 32
13	Fire Pump 2	Caterpillar Fire pump (in building S-148) with an output of 251 HP, firing diesel fuel.	7 DE Admin. Code 1102 App. A Section 32
Storage Tank	No. 2 Fuel oil Storage Tank	One (1) 30,000 gallon aboveground storage tank for No. 2 fuel oil	7 DE Admin. Code 1102 App. A Section 32

The Company has not requested confidentiality.

The Company is not located within the Coastal Zone.

The Company is current with their annual fees and has paid appropriate construction application fees.

The property is zoned I for Industrial.

MEMORANDUM**DRAFT/PROPOSED Permit: APC-2021/0073-CONSTRUCTION (NSPS)(GACT)(FE)****FMC Stine Research Center****1,000 kW (1490 HP) Emergency Generator**

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TECHNICAL INFORMATION

The emergency generator is a stationary emergency generator Cummins Model 1000DQFAD that has a standby power rating of 1,000 kW and a maximum power rating of engine of 1,490 horsepower. The emergency generator will be designated as EG-12 that will be installed to serve the building that is occupied by Corteva. The emergency generator will be used in case of an emergency and will be tested 1 to 2 hours every quarter. It will operate on diesel fuel oil with 0.0015% sulfur content. The unit is certified by the EPA to comply with Tier 2 emission limit of the U.S. EPA New Source Performance Standards for stationary emergency engines under the provisions of 40 CFR 60 Subpart IIII.

Potential To Emit

The applicable emission standards as set by the EPA were obtained from the 2020 EPA Tier 2 Exhaust Emission Compliance Statement provided by the manufacturer for CO, NO_x + NMHC and PM, that was submitted with the application. The emission factors for NO_x and HC were derived from the emission factor provided for NO_x + NMHC using a ratio of 87.62% NO_x and 12.38% HC based on the relationship of emission standards provided in 40 CFR Part 89.112 Table 1 for NO_x and HC. AP-42 emission factors from Table 3.4-1 were used to calculate the PTE for SO_x. The sulfur content used for diesel fuel is 0.0015% (15 ppm). Based on guidelines from the EPA Memorandum, *Calculating Potential to Emit (PTE) for Emergency Generators*, the maximum operating hours for the emergency generator was taken to be 500 hours per year.

SO_x Hourly emission rate= 8.09 E-03 lb/HP-hr x 0.0015 x 1490 HP = 0.02 lb/hr

Table 2: Emission Factors and Rates for New Cummins 1,000 kW (1490 HP) Diesel Emergency Generator

Pollutant	EPA Tier 2 (g/HP-hr)	Manufacturer Full Standby g/HP-hr	AP-42 Emission Factor (lb/hp-hr)	Emissions (lb/hr)	PTE (TPY)
NO _x + NMHC	4.8	4.4	-	14.53	3.63
CO	2.6	0.5	-	1.64	0.41
PM	0.15	0.10	-	0.33	0.08
HC		0.54	-	1.77	0.44
NO _x		3.86	-	12.68	3.17
SO ₂		-	*8.09 E-03S ₁	0.02	0.005
CO ₂			1.16	1728.4	432.1

*Assumes that all sulfur in the fuel is converted to SO₂. S₁ = 0.0015% sulfur in fuel oil;

The Potential To Emit values do not exceed the applicability limit of 5 TPY for 7 **DE Admin. Code** 1125, Minor New Source Review.

Table 4: Change in Facility wide PTE

	NO _x (TPY)	CO (TPY)	SO _x (TPY)	PM ₁₀ (TPY)	VOC (TPY)	CO ₂ (TPY)
Facility Total PTE	90.88	79.46	1.62	10.03	5.92	101,629.22

MEMORANDUM**DRAFT/PROPOSED Permit: APC-2021/0073-CONSTRUCTION (NSPS)(GACT)(FE)****FMC Stine Research Center****1,000 kW (1490 HP) Emergency Generator**

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	NO _x (TPY)	CO (TPY)	SO _x (TPY)	PM ₁₀ (TPY)	VOC (TPY)	CO ₂ (TPY)
EG-12 (Added)	+3.17	+0.41	+0.005	+0.08	+0.44	+432.1
New Total PTE	94.05	79.87	1.625	10.11	6.36	102,061.32

AERSCREEN Modeling

The effects of air contaminant emissions on the public health, safety, and welfare were assessed using Department criteria. The criteria assume no adverse effect when the Maximum Downwind Concentration (MDC) at the property boundary line and beyond is less than the significant impact level (SIL) for each air contaminant emitted and over each applicable averaging period. The MDC of each air contaminant was computed using AERSCREEN air dispersion modeling.

In utilizing AERSCREEN, the Cummins Emergency Generator was analyzed as a point source. Point source variables in AERSCREEN are air contaminant emission rates (lb/hr), stack height (ft), stack diameter (ft), stack gas exit velocity (acfm), stack exit temperature (°F), and whether the source is located in an urban or rural location. This information is summarized below:

Stack parameters		
Stack Height Above Grade	10	ft
Stack Exit Diameter	8	in
Stack Exit Temperature	890	°F
Exhaust Gas Flow Rate	7540	ACFM
Distance to Nearest Property Line	1600	ft

For the emergency generator, which was modeled using the "rural" surface characteristic option and assuming "wet conditions" as the dominant surface profile, AERSCREEN predicted that the MDC of each air contaminant would occur approximately 25.91 meter (85 ft) from the stack. The Company estimated that the nearest property line is 1,600 feet from the exhaust stack, which means that the MDC of each pollutant falls inside the property lines.

For analysis of emissions, the emission rates were dispersed evenly for 500 hours over the entire year (i.e., (Emission Rate*500/8,760)) and reanalyzed in AERSCREEN.

Pollutant	Emission Rate (lb/hr)	Averaging Period	MDC (µg/m³)	SIL (µg/m³)	MDC < SIL?
NO ₂	0.72	1-hour	46.11	7.5	NO
		Annual	4.61	1	NO
CO	0.09	1-hour	5.76	2,000	YES
		8-hour	5.19	500	YES
PM ₁₀	0.02	24-hour	0.77	5	YES
		Annual	0.13	1	YES
SO _x	0.001	1-hour	0.06	7.8	YES
		3-hour	0.06	25	YES
		24-hour	0.04	5	YES

MEMORANDUM**DRAFT/PROPOSED Permit: APC-2021/0073-CONSTRUCTION (NSPS)(GACT)(FE)****FMC Stine Research Center****1,000 kW (1490 HP) Emergency Generator**

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Pollutant	Emission Rate (lb/hr)	Averaging Period	MDC ($\mu\text{g}/\text{m}^3$)	SIL ($\mu\text{g}/\text{m}^3$)	MDC < SIL?
		Annual	0.006	1	YES

Table 1

While not previously explained, the emission rate modeled for NO₂ was derived by taking 80% of the previously calculated NO_x emission rate. This assumes that 80% of the total NO_x emissions are converted to NO₂, and is a technique approved by the EPA. Furthermore, the facility is limited to 500 hours of operation per year for emergency purposes.

Table 1 shows that the MDC for each pollutant was less than the associated SIL for each averaging period with the exception of the 1-hr NO₂ and annual NO₂. In the cumulative impact analysis, the MDC for each pollutant during each failed averaging period is added to a background concentration for the pollutant over the same averaging period and compared to the NAAQS for that pollutant and averaging period. As long as the summed MDC and background concentration for each pollutant and each averaging period are less than the associated NAAQS, public health and safety are presumed to be protected.

Pollutant	Emissions Rate (lb/hr)	Averaging Period	MDC ($\mu\text{g}/\text{m}^3$)	Cumulative Impact ($\mu\text{g}/\text{m}^3$)	NAAQS Standards ($\mu\text{g}/\text{m}^3$)	CI < NAAQS?
NO _x	0.72	1-hour	46.11	159.9 ¹	188	YES
		Annual	4.61	23.6 ¹	100	YES

^[1] Cumulative Impact levels calculated combining MDC with Background Concentration of NO_x statewide. 1-hour Background Concentration is 124.1 $\mu\text{g}/\text{m}^3$. Annual Background Concentration is 20.02 $\mu\text{g}/\text{m}^3$.

Table 2

REGULATORY REVIEW

- 7 DE Admin. Code 1102: Permits
- 7 DE Admin. Code 1104: Particulate Emissions From Fuel Burning Equipment
- 7 DE Admin. Code 1108: Sulfur Dioxide Emissions From Fuel Burning Equipment
- 7 DE Admin. Code 1112: Control of Nitrogen Oxide Emissions
- 7 DE Admin. Code 1114: Visible Emissions
- 7 DE Admin. Code 1119: Control of Odorous Air Contaminants
- 7 DE Admin. Code 1120: New Source Performance Standards
- 7 DE Admin. Code 1124: Control of Volatile Organic Compound Emissions
- 7 DE Admin. Code 1125: Requirements for Preconstruction Review
- 7 DE Admin. Code 1130: Title V State Operating Permit Program
- 7 DE Admin. Code 1138: Emission Standards for Hazardous Air Pollutants for Source Categories
- 7 DE Admin. Code 1144: Control of Stationary Generator Emissions

40 CFR Part 60, Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

40 CFR Part 63, Subpart ZZZZ: National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

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7 DE Admin. Code 1102, *Permits*, is applicable and states, "...no person shall initiate construction, install, alter or initiate operation of any equipment or facility or air contaminant control device which will emit or prevent the emission of an air contaminant prior to receiving approval of his application from the Department..." A construction permit is required.

7 DE Admin. Code 1104, *Particulate Emissions From Fuel Burning Equipment*, applies to the generator since the heat input is greater than 1 MMBTU/hr. Particulate emissions are limited to 0.3 pound per million BTU heat input, maximum 2-hour average, from any fuel burning equipment. This emission limit has been placed in the permit.

7 DE Admin. Code 1108, *Sulfur Dioxide Emissions From Fuel Burning Equipment*, was updated July 11, 2013. Applicable sections are reviewed.

2.3 On and after July 1, 2016, no person shall offer for sale, sell, deliver, or purchase any fuel having a sulfur content greater than the limits specified in 2.3.1 through 2.3.3 of this regulation, when such fuel is intended for use in any fuel burning equipment in Delaware, and no person shall use any fuel having a sulfur content greater than the limits specified in 2.3.1 through 2.3.3 of this regulation in any fuel burning equipment in Delaware.

2.3.1 For a distillate fuel, except as provided for in 2.4 of this regulation, 15 ppm by weight.

4.2 Sulfur concentrations of residual fuels and distillate fuels shall be determined by the following method:

4.2.1 The standard ASTM method D2622-10 "Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray Fluorescence Spectrometry," or

4.2.2 Any alternative method specified in Title 40, CFR Part 80, Section 580 (July 2012 edition), or

4.2.3 Any alternative method approved by the Department and EPA.

5.1 Three (3) months after this revision of this regulation becomes effective, any person subject to 2.0 of this regulation, when selling or delivering any fuel oil to be used in Delaware (i.e., the transferor), shall provide to the person receiving the fuel oil (i.e., the transferee) an electronic or paper record that contains the following information:

5.1.1 The name, address and telephone number of the transferor.

5.1.2 The name, address and telephone number of the transferee, and the address where the fuel oil is delivered.

5.1.3 The volume of fuel being delivered, and the date of sale or delivery.

5.1.4 The type of fuel, and the sulfur content of the fuel as a delivered product, expressed as one of the following:

5.1.4.1 The actual sulfur content in ppm or percent (%) by weight, or

5.1.4.2 A statement that certifies the sulfur content of the shipment is equal to or below the applicable limit specified in 2.0 of this regulation.

7 DE Admin. Code 1112, *Control of Nitrogen Oxide Emissions*, is applicable to the generator. According to Section 1.1, except as provided in Section 4, the provisions of this Regulation are applicable to major stationary sources of nitrogen oxides (NOx). Section 3.1 states, "Except as set forth in 5.0 and 6.0 of this regulation, after May 31, 1995, no owner or operator of a major NOx emitting source subject to the provision of this regulation shall cause to be discharged into the atmosphere any emission of nitrogen oxides without using reasonably available control technology." Compliance with **7 DE Admin. Code 1144** is considered compliance with RACT.

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7 DE Admin. Code 1114, *Visible Emissions*, applies and requires that "No person shall cause or allow the emission of visible air contaminants and/or smoke from a stationary or mobile source, the shade or appearance of which is greater than 20 percent opacity for an aggregate of more than three (3) minutes in any one (1) hour or more than fifteen (15) minutes in any twenty-four (24) hour period." The Company will be required to observe the generator for visible emissions quarterly and take corrective actions as needed.

7 DE Admin. Code 1119, *Control of Odorous Air Contaminants*, applies and requires that "No person shall cause or allow the emission of an odorous air contaminant such as to cause a condition of air pollution." Compliance shall be demonstrated based upon an initialed log documenting daily plant compliance with this emissions requirement, by the Company having no contradictory knowledge of any citizen odor complaint, and by a satisfactory review of complaint history by the Department. This emissions requirement has been placed in the permit along with the associated monitoring and record keeping requirements.

7 DE Admin. Code 1120, *New Source Performance Standards*, is not applicable to the generator. According to Section 2.1 of this Regulation, except as provided in Sections 9 and 11, the provisions of this Section are applicable to any fuel burning equipment of more than 250 MMBTU per hour heat input. Section 9 is applicable to electric utility steam generating units, and Section 11 is applicable to fuel gas combustion devices in petroleum refineries.

7 DE Admin. Code 1124, *Control of Volatile Organic Compound Emissions*, is not applicable to the generator. The generator will not emit more than 15 pounds per day of VOCs as it is only used for maintenance and testing purposes unless for emergency situations as defined in Regulation 1144.

7 DE Admin. Code 1125, *Requirements for Preconstruction Review, Minor New Source Review*, applies to the facility. According to Section 2.1, the provisions of this Section shall apply to any person responsible for any proposed new major stationary source or any proposed major modification. For purposes of Section 2, "major stationary source" means any stationary source of air pollutants, which emits, or has the potential to emit a pollutant greater than the major source threshold for New Castle County. The proposed new project is not a major source and is, therefore, not subject to the requirements of Section 2 or Section 3 of this Regulation.

Section 4, *Minor New Source Review*, is applicable. According to Section 4.0, the requirements of Section 4.2 of this Regulation shall apply to any person responsible for any proposed new stationary source, the construction of which:

- Was applied for, pursuant to **7 DE Admin. Code 1102**, Section 11, after August 11, 2005, and
- Is subject to the construction, installation, or alteration requirements of **7 DE Admin. Code 1102**, Section 2.1.3, and
- Is not subject to the requirements of Section 2 or Section 3 of **7 DE Admin. Code 1125**, and
- Has a potential to emit of equal to or greater than 5 tons per year of VOCs, or NO_x, or SO_x, or PM_{2.5}, or combined HAPs.

The PTE is below the 5 TPY applicability thresholds for all pollutants.

7 DE Admin. Code 1130, *Title V State Operating Permit Program* applies to this facility as it is a Major source of NO_x. The construction permit will be federally enforceable and will follow procedures outlined in Section 7.5.1 The construction permit for the generator will be advertised for thirty days for federal enforceability.

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7 DE Admin. Code 1138, *Emission Standards for Hazardous Air Pollutants for Source Categories*, is not applicable to the source because the source is not a major source of HAPS.

7 DE Admin. Code 1144, *Control of Stationary Generator Emissions*, applies to the emergency generator according to Section 1.2. According to Section 3.1.1, the owner or operator of a new emergency generator shall operate the generator in conformance with the generator manufacturer's instructions, such as following maintenance and operating requirements to help minimize emissions. Based on the emission data from the manufacturer, emissions from the outlet of the generator at full standby are: 4.4 g/HP-hr NO_x + NMHC, 0.5 g/HP-hr CO, and 0.10 g/HP-hr PM. The manufacturer emissions comply with Tier 2 emissions of 40 CFR Part 89.112. The engine is certified to US EPA New Source Performance Standards for stationary emergency engines under the provisions of 40 CFR 60 Subpart IIII.

7 DE Admin. Code 1144 Section 4.0: Operating Requirements

According to Section 4.1, an emergency generator may operate for an unlimited number of hours during an emergency. Section 4.2 states that an emergency generator may operate during testing or for maintenance purposes, pursuant to the definition of an emergency generator, except as restricted by Section 4.4 of this Regulation.

According to Section 4.4, no generator shall be used during testing or for maintenance purposes before 5 PM on a day which has a Ground Level Ozone Pollution Forecast or Particle Pollution Forecast of "Code Purple," "Code Red" or "Code Orange" as announced by the Department.

As stated in Section 4.5, an emergency generator may be tested on any day that such testing is required to meet National Fire Protection Association (NFPA) or Joint Commission on Accreditation of Healthcare Organizations (JCAHO) standards, despite Section 4.4.

7 DE Admin. Code 1144: Fuel Requirements

In accordance with Section 5.1, each shipment of diesel fuel received for use in a generator on or after April 11, 2006, shall have a sulfur content equal to or less than 0.05% by weight. 40 CFR 60 Subpart IIII and **7 DE Admin. Code 1108** have a more stringent restriction of 15 ppm sulfur and this has been put in the permit.

7 DE Admin. Code 1144 Section 6.0, Record Keeping and Reporting

The owner or operator shall maintain the following records:

According to Section 6.1.1, the owner shall monitor the monthly and rolling twelve (12) month amount of fuels consumed by the generator. As specified in Section 6.1.2, a non-resettable hour metering device shall be used by the owner to continuously monitor the monthly and rolling twelve (12) month operating hours for the generator. As specified in Section 6.1.3, monthly and rolling twelve (12) month operating hours during which testing or maintenance occurred shall be recorded as well as a brief description of each testing or maintenance performed.

According to Section 6.1.4, for each shipment of diesel fuel oil received for use in the generator, the Company shall maintain a shipping receipt and certification from the distributor which identifies:

- The type of fuel delivered; and
- The percentage of sulfur in the fuel by weight dry basis, and the method used to determine the sulfur content.

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As an alternative to Section 6.1.4, the Company may have the fuel in the generator's fuel tank certified by a third party laboratory, after each shipment of liquid fuel. This certification shall identify:

- The type of fuel delivered; and
- The percentage of sulfur in the fuel by weight dry basis, and the method used to determine the sulfur content.

In accordance with Section 6.2, the owner shall maintain each record required by Section 6.1 for a minimum of five (5) years after the date the record is made. The owner may retain hard copies (e.g. paper) or electronic copies (e.g., compact discs, computer disks, magnetic tape, etc.) of the records. These records shall be promptly provided to the Department upon request.

7 DE Admin. Code 1144 Section 7.0, Emissions Certification, Compliance, and Enforcement

According to Section 7.3, the owner shall verify, by the compliance date specified in Section 1.3 that the generator complies with its emission requirements of Section 3.0 by submitting any or all of the following types of data to the Department for review:

- Any maintenance or operating requirements/instructions provided by the generator manufacturer;
- The type, or a description, of any emission control equipment used; or
- Emissions test data for the generator (such as a manufacturer's technical data sheet), any supporting documentation for any emission control equipment used, any supporting calculations, any quality control or assurance information, and any other information needed to demonstrate compliance with the requirements (supplied in application).

In accordance with Section 7.5.2.1, sulfur limits pursuant to Section 5.1 shall be determined using the applicable sampling and testing methodologies set forth in 40 CFR 80.580 (July 1, 2007). **7 DE Admin. Code 1108** stipulates sulfur test methods for ULSD and these will be placed in the permit.

40 CFR Part 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

According to §60.4200(a), the provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (4) of this section.

(a)(2)(i):

Owners and operators of stationary CI ICE that commence construction after July 11, 2005 where the stationary CI ICE are manufactured after April 1, 2006 and are not fire pump engines.

(a)(4):

The provisions of §60.4208 of this subpart are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.

The emergency generator's model year is 2017 and is, therefore, subject to this subpart.

According to §60.4205(b), owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in §60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE. The engine is 23.15 L and has six cylinders.

§60.4202(a):

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Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power less than or equal to 2,237 kW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emissions standards specified in paragraphs (a)(1) through (2) of this section.

(a)(1):

For engines with a maximum engine power less than 37 kW (50 HP), the certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants beginning in model year 2007 and (ii) The certification emission standards for new nonroad CI engines in 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, 40 CFR 1039.115, and table 2 to this subpart, for 2008 model year and later engines.

§ 89.112 Oxides of nitrogen, carbon monoxide, hydrocarbon, and particulate matter exhaust emission standards.

(a) Exhaust emission from nonroad engines to which this subpart is applicable shall not exceed the applicable exhaust emission standards contained in Table 1, as follows:

Table 1 Emission Standards g/kW-hr

Rated Power (kW)	Tier	Model Year ¹	NOx	HC	NMHC +NOx	CO	PM
kW>560	Tier 2	2006	--	--	6.4	3.5	0.20

1. The model years listed indicate the model years for which the specified tiers of standards take effect.

7 DE Admin. Code 1144 has the same emission standards as 40 CFR 60 Subpart IIII.

§ 89.113 Smoke emission standard.

(a) Exhaust opacity from compression-ignition non-road engines for which this subpart is applicable must not exceed:

- (1) 20 percent during the acceleration mode;
- (2) 15 percent during the lugging mode; and
- (3) 50 percent during the peaks in either the acceleration or lugging modes.

(b) Opacity levels are to be measured and calculated as set forth in 40 CFR part 86, subpart I.

7 DE Admin. Code 1114 only allows opacity up to 20%. § 89.113 will not be placed in the permit.

§60.4205(b):

Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pumps must comply with the emission standards for new nonroad CI engines in §60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE.

According to §60.4205(e), owners and operators of emergency stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests in-use must meet the NTE standards as indicated in §60.4212.

§60.4206:

Owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in §60.4205 over the entire life of the engine.

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§60.4207(b):

Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(b) for non-road diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted. The per gallon diesel fuel standards of 40 CFR 80.510(b) are:

- 1) Sulfur content, 15 ppm maximum for NR diesel.
- 2) Cetane index or aromatic content, as follows:
 - (i) A minimum Cetane index of 40; or
 - (ii) A maximum aromatic content of 35 volume percent.

§60.4209:

If you are an owner or operator, you must meet the monitoring requirements of this section. In addition, you must also meet the monitoring requirements specified in §60.4211. (a) If you are an owner or operator of an emergency stationary CI internal combustion engine that does not meet the standards applicable to non-emergency engines, you must install a non-resettable hour meter prior to startup of the engine.

§60.4211(a):

If you are an owner or operator and must comply with the emission standards specified in this subpart, you must do all of the following, except as permitted under paragraph (g) of this section:

- 1) Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions;
- 2) Change only those emission-related settings that are permitted by the manufacturer; and
- 3) Meet the requirements of 40 CFR Part 89, as they apply to you.

These provisions were placed in the permit.

§60.4211(c):

If you are an owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in §60.4205(b)... you must comply by purchasing an engine certified to the emission standards in §60.4205(b) for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in paragraph (g) of this section.

§60.4211(f):

If you own or operate an emergency stationary ICE, you must operate the emergency stationary ICE according to the requirements in paragraphs (f)(1) through (3) of this section. In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (3) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (3) of this section, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

- 1) There is no time limit on the use of the emergency stationary ICE in emergency situations.

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- 2) You may operate your emergency stationary ICE for any combination of the purposes specified in paragraphs (f)(2)(i) through (iii) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (f)(3) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2).
 - i) Emergency stationary ICE may be operated 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 beyond 100 hours per calendar year.
 - ii) Emergency stationary ICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §60.17), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.
 - iii) Emergency stationary ICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.
- 3) Emergency stationary ICE may be operated up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. Except as provided in paragraph (f)(3)(i) of this section, the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.
 - i) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:
 - A. The engine is dispatched by the local balancing authority or local transmission and distribution system operator;
 - B. The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.
 - C. The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.
 - D. The power is provided only to the facility itself or to support the local transmission and distribution system.
 - E. The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

§60.4211(g):

If you do not install, configure, operate, and maintain your engine and control device according to the manufacturer's emission-related written instructions, or you change emission-related settings in a way that is not permitted by the manufacturer, you must demonstrate compliance as follows:

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- 3) If you are an owner or operator of a stationary CI internal combustion engine greater than 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer. You must conduct subsequent performance testing every 8,760 hours of engine operation or 3 years, whichever comes first, thereafter to demonstrate compliance with the applicable emission standards.

7 DE Admin. Code 1144 is more stringent than §60.4211(f), and §60.4211(f) and (g) are not applicable.

§60.4212

Owners and operators of stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests pursuant to this subpart must do so according to paragraphs (a) through (e) of this section.

(a) The performance test must be conducted according to the in-use testing procedures in 40 CFR part 1039, subpart F, for stationary CI ICE with a displacement of less than 10 liters per cylinder...

(b) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR part 1039 must not exceed the not-to-exceed (NTE) standards for the same model year and maximum engine power as required in 40 CFR 1039.101(e) and 40 CFR 1039.102(g)(1), except as specified in 40 CFR 1039.104(d). This requirement starts when NTE requirements take effect for nonroad diesel engines under 40 CFR part 1039.

(c) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR 89.112... must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in 40 CFR 89.112... determined from the following equation:

$$\text{NTE requirement for each pollutant} = 1.25 \times \text{STD (Eq. 1)}$$

Where: STD= The standard specified for that pollutant in 40 CFR 89.112...

Performance testing is not required. The engine complies with 40 CFR 89.112 (Tier 3) standards as specified in §60.4202(a)(2).

§60.4214(b):

If the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the owner or operator is not required to submit an initial notification to the EPA. Starting with the model years in table 5 to this subpart (i.e. 2011), if the emergency engine does not meet the standards applicable to the non-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time.

7 DE Admin. Code 1144 does not permit emergency generators to be used for emergency demand response or non-emergency situations.

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According to §60.4214(d), if you own or operate an emergency stationary CI ICE with a maximum engine power more than 100 HP that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §60.4211(f)(2)(ii) and (iii) or that operates for the purposes specified in §60.4211(f)(3)(i), you must submit an annual report according to the requirements in paragraphs (d)(1) through (3) of this section.

- 1) The report must contain the following information:
 - i) Company name and address where the engine is located.
 - ii) Date of the report and beginning and ending dates of the reporting period.
 - iii) Engine site rating and model year.
 - iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.
 - v) Hours operated for the purposes specified in §60.4211(f)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in §60.4211(f)(2)(ii) and (iii).
 - vi) Number of hours the engine is contractually obligated to be available for the purposes specified in §60.4211(f)(2)(ii) and (iii).
 - vii) Hours spent for operation for the purposes specified in §60.4211(f)(3)(i), including the date, start time and end time for engine operation for the purposes specified in §60.4211(f)(3)(i). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.
- 2) The first annual report must cover the calendar year 2018 and must be submitted no later than March 31, 2019. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year.
- 3) The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in §60.4.

7 DE Admin. Code 1144 does not permit emergency generators to be used for emergency demand response or non-emergency situations.

§60.4218:

Table 8 to this subpart shows which parts of the General Provisions in §§60.1 through 60.19 apply to you. According to §60.12, no owner or operator shall build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere.

40 CFR Part 63, Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

According to §63.6585, you are subject to this subpart if you own or operate a stationary reciprocating internal combustion engine (RICE) at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand.

As stated in §63.6590(a)(2)(iii), a stationary RICE located at an area source of HAP emissions is new if you commenced construction on or after June 12, 2006.

MEMORANDUM

DRAFT/PROPOSED Permit: APC-2021/0073-CONSTRUCTION (NSPS)(GACT)(FE)

FMC Stine Research Center

1,000 kW (1490 HP) Emergency Generator

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Pursuant to §63.6590(c), a stationary RICE which is a new stationary RICE located at an area source must meet the requirements of 40 CFR Part 63, Subpart ZZZZ by meeting the requirements of 40 CFR Part 60, Subpart IIII for compression ignition engines. No further requirements apply for such engines under this part.

The 1,000kW emergency generator meets the NSPS emissions standards, therefore, no further requirements under this MACT standard are applicable.

RECOMMENDATIONS

The draft permit and application will be advertised Sunday, March 7, 2021 for a thirty (30) day review period pursuant to the requirements of 7 **DE Admin. Code** 1102 Section 12.3. The "Draft/Proposed" permit is being submitted to EPA for concurrent processing for a 45 day EPA review period. I recommend that a copy of the draft permit and memorandum be sent to EPA Region III and affected states by email and that a copy of the draft permit be sent to the Company. The comment period expires April 6, 2021. Please note that the EPA can comment during the 30 day public notice period and can approve or deny the permit during the entire 45 day EPA review period.

The proposed project and attached draft permit comply with all applicable zoning requirements and federal and state air pollution control laws and regulations. Upon satisfactory completion of public and EPA review requirements, I recommend that the attached Draft/Proposed **Permit: APC-2021/0073-CONSTRUCTION (NSPS)(GACT)(FE)** be issued.

ADM:JLF:KMN

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