

**ENGINEERING ANALYSIS
DOTIER, LLC
MONTGOMERY DATA CENTER
MONTGOMERY, MONTGOMERY COUNTY, ALABAMA
FACILITY NO. 209-0108
SYNTHETIC MINOR OPERATING PERMIT NOS. X005 – X006**

On July 14, 2025, the Air Division received complete applications from Dotier, LLC (Dotier) for the proposed construction and operation of two groups of emergency compression ignition internal combustion engines (CI ICE) to be located at the data center located in Montgomery, Montgomery County. This facility is currently a synthetic minor source under Title V and PSD regulations. Based on the information provided in the application for this project, the facility would remain a synthetic minor source under both Title V and PSD regulations. Synthetic Minor Operating Permit Nos. X005 - X006 would be issued for the proposed project.

Project Description

Dotier is in the process of building a new data center for the purpose of housing computer systems and associated components such as telecommunication and computer data storage systems. The Montgomery Data Center currently includes three groups of diesel-fired emergency compression ignition internal combustion engines (CI ICE) with associated diesel fuel storage tanks (Synthetic Minor Operating Permit Nos. X001 - X003), and one group of diesel-fired emergency fire pump CI ICE (Synthetic Minor Operating Permit No. X004). The two new groups of generators would be used to provide power to the servers in case of power loss.

Existing Equipment

- SMOP X001 – >2,237 kW (3,000 hp) Emergency Stationary Compression Ignition Internal Combustion Engine Equipped with Diesel Fuel Storage Tank (Group 1) [NSPS, Subpart IIII]
- SMOP X002 – ≤2,237 kW (3,000 hp) Emergency Stationary Compression Ignition Internal Combustion Engine Equipped with Diesel Fuel Storage Tank (Group 2) [NSPS, Subpart IIII]
- SMOP X003 – ≤2,237 kW (3,000 hp) Emergency Stationary Compression Ignition Internal Combustion Engine Equipped with Diesel Fuel Storage Tank (Group 3) [NSPS, Subpart IIII]
- SMOP X004 – <30 Liters/Cylinder Diesel-Fired Emergency Compression Ignition Internal Combustion Engine (Fire Pump Engine) [NSPS, Subpart IIII]

Proposed Equipment

- SMOP X005 – >2,237 kW (3,000 hp) Emergency Stationary Compression Ignition Internal Combustion Engine Equipped with Diesel Fuel Storage Tank (Group 5) [NSPS, Subpart IIII]
- SMOP X006 – <2,237 kW (3,000 hp) Emergency Stationary Compression Ignition Internal Combustion Engine Equipped with Diesel Fuel Storage Tank (Group 6) [NSPS, Subpart IIII]

Emissions

The pollutants of concern that would be emitted from the proposed emergency CI ICE and associated fuel tanks would be nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic

compounds (VOC), particulates represented as particulate matter (PM), particulate matter ≤ 10 microns (PM₁₀), particulate matter ≤ 2.5 microns (PM_{2.5}), and particulate matter condensables (PM_{CON}), and formaldehyde (CH₂O). Other criteria and hazardous air pollutants (HAP) were reviewed but determined to be insignificant. Facility-wide emission calculations and unit specific calculations for the proposed engines are included as Appendix A.

Applicability: State Regulations

ADEM Admin. Code r. 335-3-4-.01, "Control of Particulate Emissions: Visible Emissions"

The two proposed emergency CI ICE groups and associated fuel tanks would be subject the State visible emission standards of ADEM Admin. Code r. 335-3-4-.01(1), which states that no air emission source may emit particulate of an opacity greater than 20% (as measured by a six-minute average) more than once during any 60 minute period and at no time shall emit particulate of an opacity greater than 40% (as measured by a six-minute average).

ADEM Admin. Code r. 335-3-4-.03, "Control of Particulate Emissions: Fuel Burning Equipment"

Per Appendix A in ADEM Admin. Code Div. 335-3, Montgomery County is designated as a Class I County for PM emissions. Although the two proposed emergency CI ICE groups would be fuel combustion sources, they would not be subject to any particulate matter (as TSP) emission limitation of ADEM Admin. Code r. 335-3-4-.03 because they would not meet the definition of fuel burning equipment nor would this facility be considered one of the process industries, general or specific.

ADEM Admin. Code r. 335-3-5-.01, "Control of Sulfur Compound Emissions: Fuel Combustion"

Per Appendix B in ADEM Admin. Code Div. 335-3, Montgomery County is designated as a Category II County for SO₂ emissions. Although the two proposed emergency CI ICE groups would be considered fuel combustion sources, they would not be subject to any sulfur dioxide (SO₂) emission limitation of ADEM Admin. Code r. 335-3-5-.01 because they would not meet the definition of fuel burning equipment.

ADEM Admin. Code r. 335-3-6-.03, "Loading and Storage of VOC"

The proposed diesel fuel storage tanks associated with the proposed emergency CI ICE would not be subject to ADEM Admin. Code r. 335-3-6-.03 because the vapor pressure of the liquid stored would not exceed 1.5 psi.

Applicability: Federal Regulations

Title V

After installation of the two proposed emergency CI ICE groups and associated fuel tanks, the facility-wide potential emissions of NO_x would exceed the 100 TPY major source threshold under Title V regulations. Dotier has requested to limit the hours of operation for these emergency CI ICE in order to synthetically reduce emissions below the Title V major source threshold. The two emergency CI ICE groups would be limited to 500 hours of operation during any consecutive 12-month period. Based on the limit to the hours of operation on the two proposed groups of emergency CI ICE, the facility-wide potential emissions for NO_x would be 77.82 TPY. The facility would be a minor source of HAP because individual HAP emissions would be less than 10 TPY and total HAP emissions would be less than 25 TPY.

PSD

The facility operations would not be one of the 28 listed major source categories, and the facility would be located in an attainment area for all criteria pollutants. Therefore, the major source threshold of concern is 250 TPY for criteria pollutants. Dotier has requested to limit the hours of operation for these two emergency CI ICE groups in order to synthetically reduce emissions below the PSD major source threshold. The two emergency CI ICE groups would each be limited to 500 hours of operation during any consecutive 12-month period. Based on the limit to the hours of operation on the two proposed groups of emergency CI ICE, the facility-wide potential emissions for NO_x would be 77.82 TPY.

NESHAP/MACT

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

40 CFR Part 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (Subpart ZZZZ) applies to new and existing engines at area sources of HAP. The proposed two emergency CI ICE groups would each be considered a new affected source since they would be constructed after June 12, 2006. According to 40 CFR §63.6590(c), any new stationary RICE located at an area source of HAP emissions must meet the requirements of the Subpart ZZZZ by meeting the requirements of 40 CFR Part 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (Subpart IIII). No further requirements would apply to the two proposed groups of emergency CI ICE under Subpart ZZZZ.

New Source Performance Standards (NSPS)

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

Subpart IIII applies to owners/operators of stationary CI ICE that commence construction after July 11, 2005, and are manufactured after April 1, 2006, per 40 CFR §60.4200(a)(2)(i). Since the two proposed emergency CI ICE groups would be constructed/manufactured in 2024, they would be subject to this Subpart. According to 40 CFR §60.4205(b), owners and operators of emergency engines with a displacement of less than 30 liters per cylinder must comply with the emission standards for new nonroad CI engines in 40 CFR §60.4202 for all pollutants. 40 CFR §60.4207(b) requires Dotier to use fuel that has a sulfur content (≤ 15 ppm) and a Cetane index (≥ 40) or aromatic content ($\leq 35\%$ by volume), on a per gallon basis. Dotier would be allowed to use both ultra-low sulfur fuel (ULSD) and renewable diesel conforming to EN15940 and ASTM D975 specifications for petroleum, including hydrotreated vegetable oil (HVO), in all emergency generator engines and the fire pump engine(s) as long as each fuel meets the specifications in 40 CFR §1090.305. The emergency CI ICE must be equipped with a non-resettable hour meter as required by 40 CFR §60.4209(a). The applications indicated that each of the proposed emergency CI ICE groups would be equipped with a non-resettable hour meter. The Subpart also limits the operation of each of the emergency CI ICE to emergency situations and 100 hours per year for maintenance checks, readiness testing, and demand response as specified in 40 CFR §60.4211(f).

Emission Limitations

In accordance with 40 CFR §60.4202(b) (2) (Group 5) and 40 CFR §60.4202(a)(2) (Group 6) to this Subpart, the two proposed emergency CI ICE groups must be certified by the manufacturer to meet the emission standards for new nonroad CI ICE found in 40 CFR §1039 Appendix I. The two proposed emergency CI ICE groups must meet a NO_x + NMHC emission standard of 6.4 g/kW-hr, a CO emission standard of 3.5 g/kW-hr, and a PM emission standard of 0.20 g/kW-hr. In addition, these proposed emergency CI ICE must meet the smoke emission standards for new nonroad CI engines found in 40 CFR 1039.105. Exhaust opacity from the CI ICE must not exceed 20% during the acceleration mode, 15% during the lugging mode, and 50% during the peaks in either the acceleration or lugging modes. Each of the proposed emergency CI ICE are certified by the manufacturer to meet all applicable standards under Subpart IIII. To maintain the certification, Dotier must operate and maintain each emergency CI ICE in a manner that meets the emission standards over the entire life of the engine, as required by 40 CFR §60.4206.

Compliance Requirements

To demonstrate compliance with the emission limitations, Dotier purchased CI ICE certified to the emission standards. Dotier must maintain records of the date, time, duration, and purpose of operation each time an emergency CI ICE is operated, as required by 40 CFR §60.4214(b). To demonstrate compliance with the fuel limitations as required by 40 CFR §60.4207(b), Dotier is required to maintain records of the sulfur content and either the Cetane index or aromatic content of the diesel fuel that is burned in each emergency CI ICE. All records must be maintained in a form suitable for inspection and retained for a period of two years from the date of generation, as required by 40 CFR §60.7(f).

Testing Requirements

There would be no testing requirements for these proposed emergency CI ICE since they would be certified by the manufacturer, as required by 40 CFR §60.4211(c).

40 CFR Part 60, Subpart Kc—Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After October 4, 2023

40 CFR Part 60, Subpart Kc – Standards of Performance for Volatile Organic Liquid Storage Vessels applies to each storage vessel with a capacity greater than or equal to 75.7 cubic meters (m^3) (approximately 20,000 gallons) that is used to store volatile organic liquids, for which construction, reconstruction, or modification is commenced after October 4, 2023. Since each storage vessel would have a capacity of less than 20,000 gallons, they would not be subject to this subpart.

Recordkeeping & Reporting

Dotier must maintain records of the date, time, duration, and purpose of operation each time an emergency CI ICE is operated, as required by 40 CFR §60.4214(b). To demonstrate compliance with the fuel limitations as required by 40 CFR §60.4207(b), Dotier is required to maintain records of the sulfur content and either the Cetane index or aromatic content of the diesel fuel that is burned in each emergency CI ICE. All records must be maintained in a form suitable for inspection and retained for a period of two years from the date of generation, as required by 40 CFR §60.7(f).

In addition, since the two emergency CI ICE groups would be limited to 500 hours of operation during any consecutive 12-month period to avoid the Title V Major Source Threshold for NO_x, Dotier would be required to maintain the hours of operation for the two emergency CI ICE groups on a monthly basis.

Air Quality Analysis

This facility would be located in Montgomery County, an attainment area for all criteria pollutants. It would be located greater than 100 km from the Sipsey Wilderness Area, the nearest Class I Area. Therefore, these units would not be expected to have a significant impact on this area.

Public Comment

In accordance with ADEM Admin. Code r. 335-3-15-.05, the Air Division will initiate a 15-day public comment period in order to solicit public input regarding the Department's preliminary determination to issue SMOP Nos. X005-X006 to Dotier.

Recommendations

I recommend that Synthetic Minor Operating Permit Nos. 209-0108-X005 - X006 be issued to Dotier for the installation of Group 5 and Group 6 emergency diesel-fired CI ICE with associated diesel fuel storage tanks pending the resolution of any public comments received during the public comment period.



Brandon Cranford

August 26, 2025
Date

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