GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

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NARRATIVE

TO: James Eason

FROM: Jada Levers

DATE: December 29, 2021

Facility Name:	**Morning Hornet, LLC**
AIRS No.:	217-00072
Location:	Social Circle, GA (Newton County)
Application #:	28220
Date of Application:	December 3, 2021

Background Information

Morning Hornet, LLC was issued Permit No. 7374-217-0072-S-01-0 on December 14, 2017. They will be a greenfield facility located south of Highway 278 NE and Shire Parkway, and north of Cooper Road in Social Circle, Georgia 30025 (Newton County). The company will be constructing and operating a planned data center with diesel-fired emergency generators to supply power during readiness testing, system maintenance and emergencies.

On August 22, 2018, Permit Amendment 7374-217-0072-S-01-1 was issued to allow the facility to add two [2] additional diesel-fired emergency generators under a new "Group 2". On October 17, 2019, Permit Amendment 7374-217-0072-S-01-2 was issued to allow the facility to remove twenty-two [22] Group 1 Generators and change the manufacturer, make, and model for fourteen [14] of the Group 1 Generators, which will now be referred to as "Group 3" generators. On March 3, 2020, Permit Amendment 7374-217-0072-S-01-3 was issued for the revision of model specifications and emission rate for fourteen [14] previously permitted emergency generators and revision of emission rates for thirty-six [36] other previously permitted emergency generators. On December 4, 2020, an NPR was issued to add one Group 3 generator and to relocate three permitted Group 3 generators.

In summary, the facility is currently permitted to have a total of fifty-three [53] engines, thirty-six [36] with a design capacity of 28.4 MMBtu/hr referred to Group 1, two [2] engines with a design capacity of 10 MMBtu/hr referred to as Group 2, and fifteen [15] engines with a design capacity of 28.4 MMBtu/hr referred to as Group 3.

The facility is listed in Newton County (the new addition will extend into Morgan and Walton Counties) which is attainment/unclassifiable for all criteria pollutants and is listed in Rule 391-3-1-.03(8)(c)14 "Additional Provisions for Ozone Non-Attainment Areas" which defines a "major source" as any stationary source that emits or has the potential to emit, at least 100 tons per year of VOC or NOx.

Purpose of Application

Application No. 28220 was dated December 3,2021 and received on December 10, 2021 for the installation of thirty-six [36] additional emergency generators and one [1] diesel fire pump. The emergency generators will be the same make and model as the currently permitted Group 3 generators, however, the proposed generators will each be equipped with a Selective Catalytic Reduction (SCR) control device for control of NOx emissions thus the facility will identify these new generators as "Group 4" generators. The SCR system will be equipped with system faults and system alarms. A fault condition causes the system to shut down, whereas an alarm condition does not. A list of alarms and faults has been provided in Appendix 3 of the application.

The application was accepted into our Expedited Permitting Program on December 21, 2021. Public advisory expired on January 21, 2022.

Updated Equipment List

Facility emission units include emergency generators and fuel storage belly tanks. The facility is currently permitted to have thirty-six [36] engines permitted under Group 1 and two [2] engines under Group 2 and fifteen [15] engines under Group 3.

With the proposed changes, thirty-six [36] additional emergency generators (Group 4) and one [1] diesel fire pump will be added to the facility. The diesel belly tanks are exempt from state air permitting requirements pursuant to Georgia Rules for Air Quality Control 391-3-1-.03(6)(c)3.

Emission Unit ID	Input Heat Capacity (MMBtu/hr)	Description	Installation Date	Construction Date
NCG1EG-1 through NCG1EG-3, NCG1EG-5 through NCG1EG-10, NCG1EG-12 through NCG1EG-14, NCG1EG-N1 through NCG1EG-N4, NCG1EG-1R, NCG1EG-2R, **NCG2EG-1 through NCG2EG-3, NCG2EG-5 through NCG2EG-10, NCG2EG-12 through NCG2EG-14, NCG2EG-N1 through NCG2EG-N4, NCG2EG-1R, NCG2EG-2R**	28.4 (each)	Diesel- Fired Emergency Generators	2018	2019
NCG0EG-A1 and NCG0EG-A2	10.0 (each)	Diesel- Fired Emergency Generators	2018 (0EG-A1) 2020 (0EG-A2)	2019 (0EG-A1) 2021 (0EG-A2)
NCG3EG-RA through NCG3EG-RC, NCG3EG-N1 through NCG3EG-N4, NCG5EG-N1 through NCG5EG-N4, NCG6EG-N1 through NCG6EG-N4	28.4 (each)	Diesel- Fired Emergency Generators	2020	2020

Emission Unit ID	Input Heat Capacity (MMBtu/hr)	Description	Installation Date	Construction Date
MWG1EG-1 through MWG1EG-3, MWG1EG-5 through MWG1EG-10, MWG1EG-12 through MWG1EG-14, MWG1EG-N1 through MWG1EG-N4, MWG1EG-1R, MWG1EG-2R, MWG2EG-1 through MWG2EG-3, MWG2EG-5 through MWG2EG-10, MWG2EG-12 through MWG2EG-14, MWG2EG-N1 through MWG2EG-N4, MWG2EG-1R, MWG2EG-2R	**28.4 (each)**	**Diesel- Fired Emergency Generators**	**2022**	**2022**
DFP-1	**1.2**	**Diesel Fire Pump**	**2022**	**2022**

Emissions Summary

NOx is the major pollutant of concern from this data center. The company has requested to keep the federally enforceable site-wide NOx emission limit of 99.9 tons per year to be included in the Permit to limit the NOx potential-to-emit for all generators. The 99.9 tons per year NOx limit will ensure all other criteria pollutants and HAPS remain below major source thresholds. Hours of operation and operating output load will be monitored to determine run hours and maximum engine load in kilowatts during each run. The maximum engine load during each run will be rounded up to the next highest engine load with available emissions data provided by the manufacturer. The monthly NOx emissions for each generator will then be calculated as the sum of the monthly NOx emissions at each rounded load.

Engine-specific not-to-exceed emission factors provided by the manufacturer for NOx, VOCs (hydrocarbons), CO, and filterable PM were used to estimate the emissions of those pollutants at each generator load and assuming that all particulate matter present in engine exhaust is $PM_{2.5}$. For Group 4 emergency generators, load-specific NOx emission reduction percentages provided by the SCR manufacturer were applied to the NOx emission rates to account for SCR controls. The SCR manufacturer specification sheet is included in Appendix 3 of the application.

Diesel fuel emission factors presented in AP-42, Section 3.4, Large Stationary Diesel and All Stationary Dual-fuel Engines (October 1996) were used for emissions of condensable PM, SO_2, and HAPs.

Facility-wide potential emissions for all pollutants other than NOx are calculated using the lower of the following:

- Total potential annual pollutant emissions from all generators; or
- The permitted 99.9 tpy for NOx and the ratio of the specific pollutant based on the NOx limit.

Facility-Wide Emissions
(in tons per year)

Pollutant	Potential Emissions	
	Before Mod.	After Mod.
PM/PM_{10}/$PM_{2.5}$	10.59/10.71/10.71	17.32/17.50/17.50
NOx	99.9*	99.9*
SO_2	0.08	0.15
CO	62.38	69.73
VOC	25.82	29.54
Max. Individual HAP	0.04	0.04
Total HAP	0.09	0.09
Total GHG (if applicable)	9,066	9,099

*99.9 tpy NOx permit limit

Regulatory Applicability

Georgia State Rules:

391-3-1-.02(2)(b) – The allowable visible emission from the generators is 40% in accordance with Georgia Rule 391-3-1-.02(2)(b)1.

391-3-1-.02(2)(g) – The allowable fuel sulfur content is 2.5 weight percent in accordance with Georgia Rule 391-3-1-.02(2)(g)2. This requirement is subsumed by NSPS IIII requirement, which requires maximum fuel oil sulfur requirement of 15 ppm (0.0015% by weight).

391-3-1-.02(2)(n) – The percent opacity from any fugitive dust source shall not equal or exceed 20 percent. The facility should take precautions to limit fugitive dust from becoming airborne.

391-3-1-.02(2)(mmm) – The generators will meet the definition of Rule (mmm)4(i) for "Emergency standby stationary engines." Each generator will operate less than 200 hr/year, be used only for maintenance checks, readiness testing and as needed for emergency backup power in the event of utility power interruptions. The fire pump does not generate electricity; therefore, it is not subject to Rule (mmm).

391-3-1-.02(2)(yy) – Emissions of Nitrogen Oxides from Major Sources applies to sources located in Newton County that have potential emissions of NOx exceeding 100 tons per year. Rule (yy) does not apply to the facility.

Federal Rules:

40 CFR 60 Subpart IIII – The emergency generators were constructed after July 11, 2005 and manufactured after April 1, 2006. They are subject to the requirements of NSPS Subpart IIII and meet the definition of emergency stationary ICE in 60.4219. The company must comply with the emission standards and opacity

requirement under NSPS Subpart IIII by purchasing certified engines. The generators shall only use diesel fuel that has a maximum sulfur content of 15 parts per million (ppm) (0.0015% by weight) and either a minimum cetane index of 40 or maximum aromatic content of 35 volume percent. The accumulated non-emergency service (maintenance check and readiness testing) time for the generator shall not exceed 100 hours per year. Non-resettable hour meters and records of the time and reason of operation are required. The fire pump is defined as an emergency engine by NSPS IIII but has less stringent emission standards than emergency engines used to generate electricity. The emission standards are met by purchasing a certified fire pump engine.

40 CFR 63 Subpart ZZZZ (RICE MACT) - The emergency generators and fire pump are constructed after June 12, 2006. Therefore, they are considered new emergency stationary reciprocating internal combustion engines (RICE) and they are subject to 40 CFR 63 Subpart ZZZZ. 40 CFR 63 Subpart ZZZZ [40 CFR 63.6590(c)] states that new emergency stationary RICE located at an area source, must meet the requirements of 40 CFR 63 Subpart ZZZZ by meeting the requirements of 40 CFR 60 Subpart IIII.

Permit Conditions

Modified Conditions 2.3, 2.4, 2.5, 2.7, 4.1 and 5.2 were modified to include the fire pump.

New Condition 4.2 was added to require maintenance on all air pollution control equipment and keep records of maintenance.

New Condition 5.3 was added requiring the installation, operation, and maintenance of the SCR to control NOx on Group 4 engines.

Modified Conditions 7.1, 7.2, 7.3, 7.4 and 7.5 were modified to include the fire pump.

Modified Condition 7.6 has been modified to include Group 4 generators and the fire pump in the equation for calculating monthly NOx emissions for all the emergency generators.

New Condition 7.8 was added requiring record, cause and corrective action of any fault or alarm on the Group 4 engines.

Toxic Impact Assessment

The GEPD's Guideline for Ambient Impact Assessment of Toxic Air Pollutant Emissions (Guideline) provides requirements for assessing the impacts of toxic air pollutant (TAP) emissions from the facility. If a facility's emissions of a specific TAP are less than the minimum emission rate (MER), no further analysis is required for that pollutant. Otherwise, an air dispersion modeling analysis is required to demonstrate that the facility's emissions of the TAP will not exceed the pollutant's acceptable ambient concentration (AAC). The site wide PTE for Benzene exceeds the MER established in Georgia Air Toxic guidelines. The facility submitted the detailed modeling report with Application No. 28220 using SCREEN3 modeling software which demonstrates compliance with Acceptable Ambient concentration for Benzene. The 15-minute modeled ground level concentration of Benzene was reported to be 56.26 $\mu g/m^3$ and the annual modeled ground level concentration of Benzene was reported to be 0.08 $\mu g/m^3$, which are below the 15-minute AAC of 1,600 $\mu g/m^3$ and the annual AAC of 0.13 $\mu g/m^3$.

Pollutant	15-Minute Modeled Impact (µg/m³)	15-Minute AAC (µg/m³)	Exceeds AAC?	Annual Modeled Impact (µg/m³)	Annual AAC (µg/m³)	Exceeds AAC?
Benzene	56.26	1,600	No	0.08	0.13	No

Summary & Recommendations

Therefore, I recommend issuing proposed Air Quality Permit Amendment No. 7374-217-0072-S-01-4 for the operation of emergency generators at Morning Hornet, LLC.