

December 2025

PRECONSTRUCTION AND PREVENTION OF SIGNIFICANT DETERIORATION AIR PERMIT APPLICATION

*Evergy, Inc
Mullin Creek Generating Station
Barnard, Nodaway County, Missouri*

Submitted To:
*Missouri Department of Natural Resources
Division of Environmental Quality
P.O. Box 176
Jefferson City, MO 65102-0176
United States*

PROJECT NUMBER:
0246593



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1.0 INTRODUCTION / APPLICATION OVERVIEW

Evergy, Inc (Evergy) is proposing to build a new simple cycle power plant near Barnard, Missouri, in Nodaway County. The proposed new power plant will preliminarily be referred to as the Mullin Creek Generating Station (MCGS). This application is being submitted to the Missouri Department of Natural Resources (MDNR).

Nodaway county is currently classified as in attainment/unclassifiable with all National Ambient Air Quality Standards (NAAQS). As shown in the Area Map and Plot Plan in Section 2.2 and 2.3, respectively, the MCGS will be constructed in a remote area in Nodaway County. Under the federal New Source Review (NSR) program, as described in Section 4.1, the MCGS project will be a major source that requires Prevention of Significant Deterioration (PSD) permitting for the NSR-regulated pollutants nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC), particulate matter (PM₁₀ and PM_{2.5}), sulfur dioxide (SO₂), sulfuric acid mist (SAM or H₂SO₄), and greenhouse gases (GHG – expressed as CO₂e).

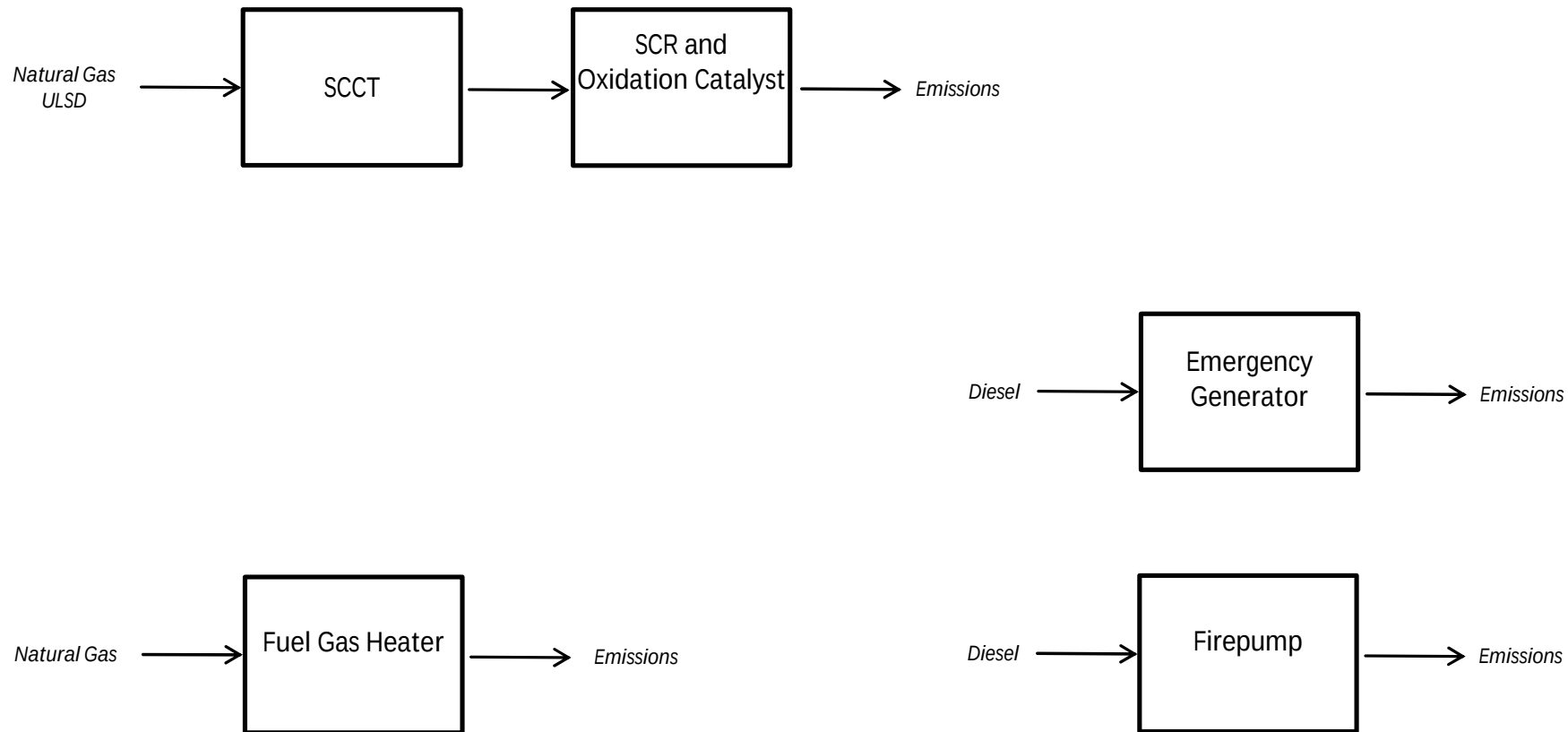
The power generation equipment includes two Mitsubishi Model M501JAC simple cycle combustion turbines (SCCTs), that can combust either natural gas or ultra-low sulfur diesel (ULSD). Proposed emission controls for the SCCTs includes an aqueous ammonia-based Selective Catalytic Reduction (SCR) system to reduce NO_x emissions, and a catalytic oxidation unit (OxCat) to reduce CO and VOC emissions. The emission control equipment and system design components proposed for the SCCTs meet PSD Best Available Control Technology (BACT) requirements as described in Section 7.0.

The proposed MCGS facility will have other ancillary sources of air pollution. This includes three natural gas-fired fuel gas heaters (only two in operation at a time) to heat the natural gas fuel fed to each SCCT, large ULSD storage tanks for the SCCTs, two diesel-fired internal combustion (IC) engines in support of emergency standby power generation, one emergency fire pump, and the small ULSD storage tanks for these engines. The emission control and/or design components of the ancillary emission sources at the MCGS meet PSD BACT requirements as described in Section 7.0.

- » The supporting air emission calculations for this PSD application are provided in Appendix A.
- » All required Missouri Department of Natural Resources (MDNR) permit application forms are provided in Appendix B.
- » Appendix C contains information from the United States Environmental Protection Agency's (USEPA's) RACT/BACT/LAER Clearinghouse (RBLC).
- » Appendix D contains the PSD Air Dispersion Modeling Protocol approved by MDNR. Appendix E contains the PSD Air Quality Impacts Analysis Report.

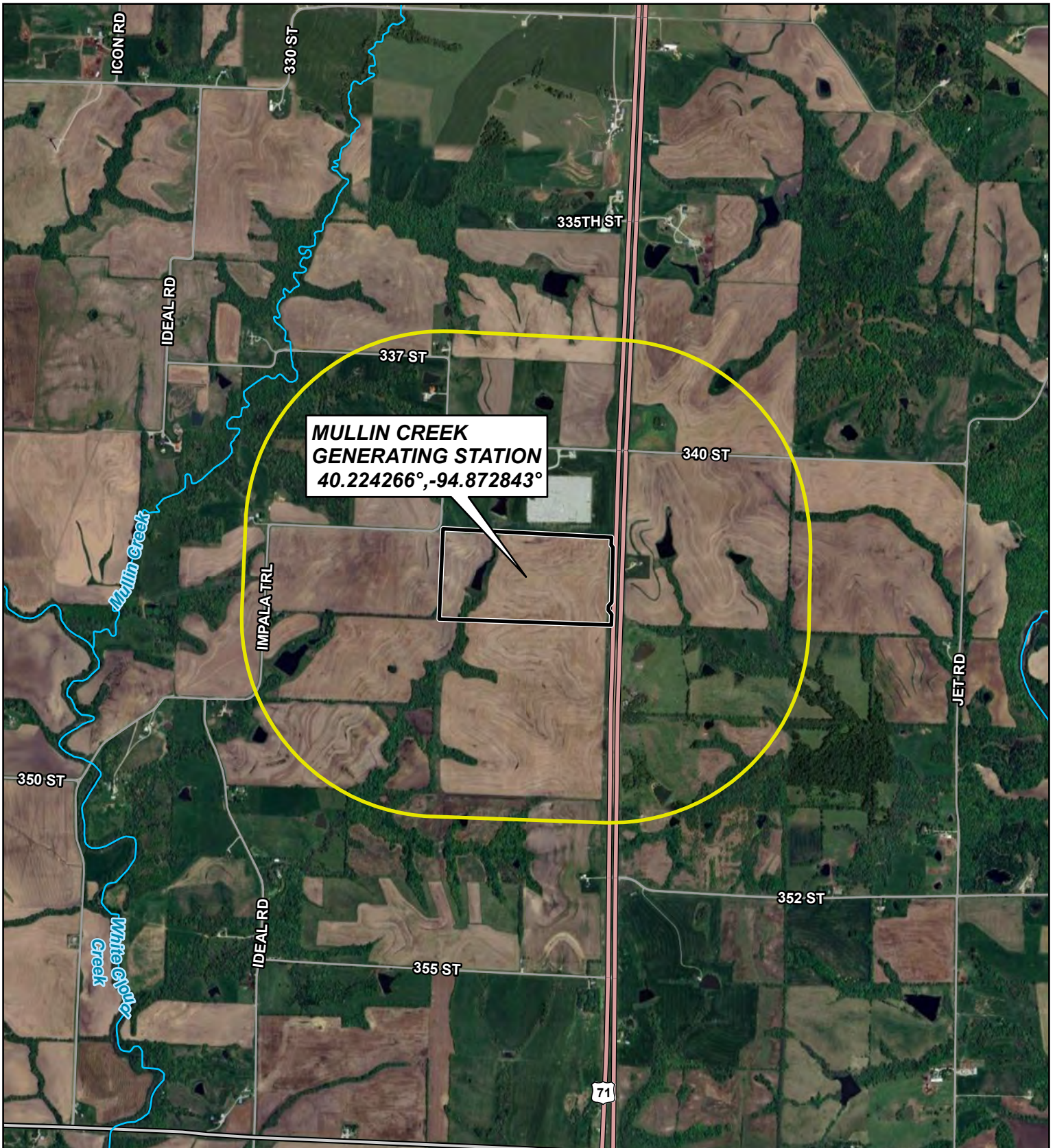
2.0 APPLICATION FIGURES

2.1 Process Flow Diagram



Evergy, Inc Mullin Creek Generating Station		FIGURE 2.1 PROCESS FLOW DIAGRAM		
		Project No.: 0246592	Date: 10/31/2024	Sheet: 1 of 1

2.2 Area Map



Legend

-  Facility Boundary
-  3000' Radius
-  NHD Stream



0 1,000 2,000
Feet



EVERGY, INC.
MULLIN CREEK
GENERATING STATION

AREA MAP

NODAWAY COUNTY,
MISSOURI



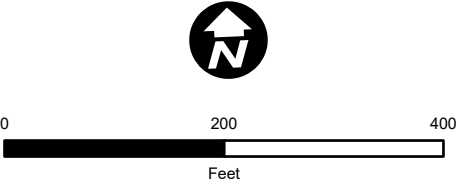
Date: 9/23/2025

2.3 Plot Plan



- Legend
- Facility Boundary
 - Point Source
 - Building
 - Tank

Datum: WGS 1984
Map Sources: Google Satellite Basemap



EVERGY, INC.
MULLIN CREEK
GENERATING STATION

PLOT PLAN

NODAWAY COUNTY,
MISSOURI



Date: 9/23/2025

3.0 PROJECT AND PROCESS DESCRIPTION

As described in Section 1.0 and shown in Figure 2.1, Evergy's proposed MCGS will be a new SCCT power plant near Barnard, Missouri, in Nodaway County. The air emission sources associated with the proposed MCGS facility are shown in Table 3.1.

TABLE 3.1 PROPOSED MCGS POWER STATION AIR EMISSION SOURCES

EMISSION UNIT ID	AIR EMISSION SOURCE DESCRIPTION
SCCT 1	NATURAL GAS / ULSD FIRED SIMPLE CYCLE COMBUSTION TURBINE
SCCT 2	NATURAL GAS / ULSD FIRED SIMPLE CYCLE COMBUSTION TURBINE
FUELGASHEAT1	FUEL GAS HEATERS 1 – 3 (REDUNDANT SYSTEM WITH ONLY 2 HEATERS IN OPERATION AT ONE TIME)
FUELGASHEAT2	
FUELGASHEAT3	
FUELTK1	SCCT ULSD TANK 1 (~1,300,000 GALS)
FUELTK2	SCCT ULSD TANK 2 (~1,300,000 GALS)
EMERGEN1	EMERGENCY DIESEL GENERATOR 1
EMERGEN2	EMERGENCY DIESEL GENERATOR 2
FIREPUMP	EMERGENCY DIESEL FIREPUMP
EMERGENTK1	EMERGENCY GENERATOR ULSD TANK 1
EMERGENTK2	EMERGENCY GENERATOR ULSD TANK 2
FIREPUMPTK	EMERGENCY FIRE PUMP ULSD TANK
SF6	INSULATED SF6 CIRCUIT BREAKERS

3.1 Combustion Turbine Operations

As shown in Figure 2.1, the power generation equipment proposed for the MCGS includes two Mitsubishi Model M501JAC SCCTs. To boost the thermal efficiency of the combustion turbines, the combustion air fed to the CT compressor can be saturated with water in an evaporative cooler, predominantly during warm weather conditions. The maximum firing rates of the SCCTs are 4,063 MMBtu/hr-HHV when firing natural gas at a cold weather ambient temperature firing condition of 26.6°F, and 3,424 MMBtu/hr-HHV when firing ULSD, at an ambient temperature firing condition of 59°F. The permitting analysis is based on the combustion turbines being permitted to operate continuously (8,760 hr/yr) on both natural gas and ULSD. Numerous performance scenarios are presented in Table A-3 and A-4 in Appendix A.

Proposed emission controls for the SCCTs include an aqueous ammonia-based SCR system to reduce NO_x emissions and a OxCat to reduce CO and VOC emissions. Emissions of GHGs are limited by installing a power generation system with a high thermal efficiency. The emission control equipment and system design components proposed for the MCGS SCCTs meet PSD BACT requirements as demonstrated in Section 7.0.

3.2 Simple Cycle Unit Startup/Shutdown Operations

Startup/Shutdown (SUSD) of the proposed SCCTs will occur as necessary. The SCCTs can SUSD on either fuel. Startup is defined as the period from when a combustion turbine has a detectable flame signal until the SCR and OxCat stabilizes. The shutdown period is defined as the period beginning when the combustion turbine receives a “turbine stop” command and the generator output drops below the minimum stable load and ending when a flame detection signal is no longer recorded in the plant’s control system. SUSD emissions from the SCCTs are emitted from each turbine stack and are accounted for in the annual emission limits for these point sources. The SCR and OxCat units will be coming up to temperature and not fully operational during SUSD; therefore, SUSD emissions are not controlled.

Higher-than-normal emissions from the SCCTs may occur during combustion turbine tuning and optimization maintenance activities. In addition to the combustion turbine optimization during the commissioning period, the combustion turbine’s fuel system requires periodic tuning, including after major overhauls, to maintain compliance with the manufacturer’s specification for emissions and combustion dynamics. Finally, higher-than-normal emissions and atypical load operations are anticipated during periodically required North American Electric Reliability Corporation (NERC) tests. The turbine tuning is conducted across the combustor’s load range and according to manufacturer recommendations to minimize NO_x and CO production while ensuring combustor stability. During combustion turbine tuning and optimization activities and the required NERC reliability testing, the SCCT NO_x and CO emissions will be similar to the SUSD emissions. The emissions from these activities will be included in the NO_x and CO secondary BACT tonnage limits.

3.3 Fuel Gas Heater Operations

The MCGS is proposing to have three natural gas fired fuel gas heaters. Pipeline quality natural gas will be delivered to the site via pipeline. To prevent liquid droplets from entering the SCCTs, the natural gas fuel to each SCCT will be indirectly heated in a natural-gas fired fuel gas heater (FUEL GAS HEAT). Two heaters will be permitted to operate continuously (8,760 hr/yr).

3.4 Diesel-fired Emergency Internal Combustion Engines

The MCGS is proposing to have two emergency diesel-fired IC engines. The engines will be limited to 100 hr/yr of operation or less in non-emergency operating modes due to the engines emergency classification status. The engines will not be constrained by an operating limit for legitimate emergency operating modes.

Each emergency diesel-fired IC engine powers a 3,000-kilowatt (kW) emergency standby generator. The engine is to be determined. As required by regulation, the engines will only fire ULSD with a maximum sulfur content of 15 parts per million weight (ppmw). Each engine will be a USEPA-certified Tier 2 engine.

The MCGS is also proposing a diesel-fired IC engine powering a 321-kW emergency firepump. The engine is to be determined. As required by regulation, the engine will only fire ULSD with a maximum sulfur content of 15 ppmw. The engine will be an USEPA-certified Tier 3 engine.

3.5 Diesel Storage Tanks

The MCGS is proposing to have five fixed-roof diesel storage tanks. The two main tanks for the SCCTs will be 1,300,000 gallons each. Two tanks will provide ULSD fuel for the emergency IC engines sized at 4,000 gallons each. The firepump engine will have a 500 gallon tank.

3.6 Insulated SF6 Circuit Breakers

The MCGS is proposing to use insulated circuit breakers that contain SF₆ with a total SF₆ capacity of 2,240 pounds.

4.0 EMISSIONS DATA AND CALCULATIONS

This section addresses the methods used to calculate potential air emissions from all emissions units proposed for the site, as provided in Appendix A. Based on sitewide potential emissions of all applicable NSR regulated pollutants, an evaluation of PSD applicability is provided. Note that in Appendix A, the sitewide summary of potential Hazardous Air Pollutant (HAP) emissions shows that no single HAP has a potential emission rate greater than 10 ton/yr, and all HAPs in aggregate do not have a potential emission rate greater than 25 ton/yr. Therefore, the MCSG facility will be a non-major, area source of HAP emissions.

4.1 Facility-wide Emissions Summary and PSD Applicability Analysis

Nodaway County is currently classified as in attainment/unclassifiable with all NAAQS. Because of this, this application is not required to address Nonattainment New Source Review (NNSR) for any NSR regulated pollutant.

As shown in the Area Map and Plot Plan in Sections 2.2 and 2.3, respectively, the MCSG will be constructed in a remote rural area in Nodaway County. As shown in the site-wide potential emissions summary in Table 4.1 below, under the federal NSR program the MCSG project will be a major source that requires PSD permitting for the NSR-regulated pollutants NO_x, CO, VOC, PM₁₀, PM_{2.5}, SO₂, SAM and GHG (expressed as CO₂e). MDNR's PSD regulation, which is codified in Missouri Air Quality Regulations 10 CSR 10-6.060 incorporates by reference the federal PSD regulation found at 40 Code of Federal Regulations (CFR) 52.21.

TABLE 4.1 SITOWIDE POTENTIAL EMISSIONS AND PSD APPLICABILITY EVALUATION FOR EVERGY'S PROPOSED MCGS

NSR REGULATED POLLUTANT	NAAQS PRIMARY AND/OR SECONDARY POLLUTANT(S)	MCGS PSD EMISSIONS FOR NSR REGULATED POLLUTANTS (TON/YR)	PSD MAJOR SOURCE SIGNIFICANT EMISSION RATES FOR NSR REGULATED POLLUTANTS (TON/YR)	NSR REGULATED POLLUTANT SUBJECT TO PSD REVIEW?
NO _x	NO ₂ , OZONE, PM _{2.5}	887.9	100	YES
CO	CO	5,199.7	100	YES
VOC	OZONE	1,728.7	40	YES
PM ₁₀	DIRECT PM ₁₀	429.9	15	YES
PM _{2.5}	DIRECT PM _{2.5}	429.9	10	YES
SO ₂	SO ₂ , PM _{2.5}	55.8	40	YES
H ₂ SO ₄	SULFURIC ACID MIST	97.4	7	YES
GHG	GHG as CO ₂ e	4,920,453	75,000	YES

4.2 Combustion Turbine Emissions

The power generation equipment proposed for the MCGS includes two Mitsubishi Model M501JAC CTs. The flue gas from each combustion turbine is routed to SCR and OxCat emission control systems before exiting each unit's main stack. Annual emission rates from the stacks are conservative and based on each CT operation at maximum ambient conditions (shown in the emission calculations in Appendix A). Startup and shutdown emission rates are based on vendor supplied performance levels during SUSD operations. The emission calculations for normal operation (does not include startup/shutdown events as described in Section 3.2) for criteria pollutants, hazardous air pollutants, and GHGs were performed as follows:

Natural Gas Combustion

- » Based on performance of the SCR system to control NO_x emissions from the SCCT flue gas, NO_x emissions are based on a vendor-guaranteed performance level of a stack NO_x concentration of 2.5 ppmvd NO_x @ 15% O₂.
- » Based on performance of the OxCat system to control CO emissions for the SCCT flue gas, CO emissions are based on a vendor guaranteed performance level of a stack CO concentration of 2 ppmvd CO @ 15% O₂.
- » Based on performance of the OxCat system to control VOC emissions for the SCCT flue gas, VOC emissions are based on a vendor guaranteed performance level of a stack VOC concentration of 2 ppmvd VOC (as methane, includes formaldehyde) @ 15% O₂.
- » Based on the combustion of natural gas, SO₂ emissions are based on vendor guaranteed data.
- » Based on the combustion of pipeline quality natural gas, PM₁₀ and PM_{2.5} emissions are based on vendor guaranteed data. These emissions include both filterable and condensable particulate.
- » SCCT GHG emissions are calculated as follows:
 - CO₂ emissions are based on vendor guaranteed data.
 - CH₄ and N₂O emissions are based on emission factors in Table C-2 of the Mandatory GHG Reporting Rule, found at 40 CFR 98.
- » SCCT HAP emissions are based on AP-42 emission factors from Table 3.1-3. A complete list of individual HAPs emitted from the main stack can be found in Table A-6 in Appendix A of this application.
- » During planned SUSD periods, emissions may be released from the SCCT at higher rates than during normal operations. During startup, higher NO_x emissions may be produced during the transition of the combustors to low NO_x operating mode and the SCR NO_x control system stabilizing. Also, higher CO and VOC emissions during SUSD may result due to less complete combustion as the SCCT transitions to normal operating modes and the OxCat reaching optimal temperature. The planned SUSD emissions from the SCCT are based on data supplied by Mitsubishi.

ULSD Combustion

- » Based on performance of the SCR system to control NO_x emissions from the SCCT flue gas, NO_x emissions are based on a vendor-guaranteed performance level of a stack NO_x concentration of 5 ppmvd NO_x @ 15% O₂.
- » Based on performance of the OxCat system to control CO emissions for the SCCT flue gas, CO emissions are based on a vendor guaranteed performance level of a stack CO concentration of 6 ppmvd CO @ 15% O₂.
- » Based on performance of the OxCat system to control VOC emissions for the SCCT flue gas, VOC emissions are based on a vendor guaranteed performance level of a stack VOC concentration of 6 ppmvd VOC (as methane, includes formaldehyde) @ 15% O₂.
- » Based on the combustion of ULSD, SO₂ emissions are based on vendor guaranteed data.
- » Based on the combustion of ULSD, PM₁₀ and PM_{2.5} emissions are based on vendor guaranteed data. These emissions include both filterable and condensable particulate.
- » SCCT GHG emissions are calculated as follows:
 - CO₂ emissions are based on vendor guaranteed data.
 - CH₄ and N₂O emissions are based on emission factors in Table C-2 of the Mandatory GHG Reporting Rule, found at 40 CFR 98.
- » SCCT HAP emissions are based on AP-42 emission factors from Table 3.1-4 and Table 3.1-5 except for Manganese which is from South Coast Air Quality Management District AB 2588 Quadrennial Air Toxics Emissions Inventory Reporting Procedures Table B-2: Default Emission Factors for Diesel/Distillate Oil Fuel Combustion¹. This alternative emission factor was used because the AP-42 manganese factor is only based on one incomplete (only 2 test runs) stack test from 1991. A complete list of individual HAPs emitted from the main stack can be found in Table A-2 in Appendix A of this application.
- » During planned SUSD periods, emissions may be released from the SCCT at higher rates than during normal operations. During startup, higher NO_x emissions may be produced during the transition of the combustors to low NO_x operating mode and the SCR NO_x control system stabilizing. Also, higher CO and VOC emissions during SUSD may result due to less complete combustion as the SCCT transitions to normal operating modes and the OxCat reaching optimal temperature. The planned SUSD emissions from the SCCT are based on data supplied by Mitsubishi.

4.3 Natural Gas Fuel Gas Heater Emissions

Only one heater is necessary for each SCCT in operation. Two heaters will be permitted to operate continuously (8,760 hr/yr). Criteria pollutant emissions for the heater are calculated using engineering estimated emission factors. The HAP emissions were calculated using AP-42 emission factors from Tables 1.4-3 and 1.4-4. A complete list of individual HAPs can be found in

¹ South Coast AQMD. (2020, June). *AB 2588 Quadrennial Air Toxics Emissions Inventory Reporting Procedures*. https://www.aqmd.gov/docs/default-source/planning/risk-assessment/forms-and-guidelines/quadrennial_atir_procedure.pdf?sfvrsn=f530ef61_13

Table A-2 in Appendix A of this application. GHG emissions are calculated using GHG emission factors in Tables C-1 and C-2 of the Mandatory GHG Reporting Rule, found at 40 CFR 98.

4.4 Diesel-fired Emergency Internal Combustion Engine Emissions

Emissions for the proposed emergency diesel-fired IC engines are calculated using engineering estimates that comply with NSPS Subpart IIII and sulfur mass balance. The HAP emissions were calculated using AP-42 emission factors from Table 3.4-3 and 3.4-4. A complete list of individual HAPs from the emergency diesel-fired engines can be found in Table A-2 in Appendix A of this application. GHG emissions are calculated using GHG emission factors in Tables C-1 and C-2 of the Mandatory GHG Reporting Rule, found at 40 CFR 98.

4.5 Diesel-fired Emergency Firepump Engine Emissions

Emissions for the proposed emergency diesel-fired firepump engine are calculated using engineering estimates that comply with NSPS Subpart IIII and sulfur mass balance. The HAP emissions were calculated using AP-42 emission factors from Table 3.4-2. A complete list of individual HAPs from the emergency diesel-fired engines can be found in Table A-2 in Appendix A of this application. GHG emissions are calculated using GHG emission factors in Tables C-1 and C-2 of the Mandatory GHG Reporting Rule, found at 40 CFR 98.

4.6 Storage Tank Emissions

The minor VOC emissions from the five ULSD storage tanks are calculated using EPA's Tanks 5.1 and AP-42 default parameters.

4.7 Startup/Shutdown Operations

The SUSD emissions from the SCCT are based on data supplied by Mitsubishi, the SCCT manufacturer.

4.8 Insulated SF₆ Circuit Breakers

There will be minor SF₆ leakage to the atmosphere from the circuit breakers. The SF₆ emissions are calculated using the total amount of SF₆ onsite multiplied by an annual SF₆ leakage rate of 0.5 percent per year taken from the USEPA technical paper titled "SF₆ Leak Rates from High Voltage Circuit Breakers - EPA Investigates Potential Greenhouse Gas Emission Source" - by J. Blackman, Program Manager, USEPA.

5.0 FEDERAL AIR REGULATORY APPLICABILITY ANALYSIS

This section of the application addresses federal air regulations that are expected to apply to the MCGS.

5.1 Prevention of Significant Deterioration

Nodaway County is currently classified as in attainment/unclassifiable with all NAAQS. The MCGS will be constructed in a rural area near Barnard, Missouri, in Nodaway County. MDNR's PSD regulation, are codified in Missouri Secretary of State: Code of State Regulations (CSR) 10 CSR 10-6.060, incorporates by reference the federal PSD regulation found at 40 CFR 52.21. As shown above in Table 4.1, under the federal NSR program, the MCGS project will be a new major source that requires PSD permitting for the NSR-regulated pollutants NO_x, CO, VOC, PM₁₀, PM_{2.5}, SAM and GHG (expressed as CO₂e). This application addresses all regulatory requirements for a PSD permit application as detailed below:

- » 40 CFR 52.21(j) – BACT Review – presented in Section 7.0 and Appendices C.
- » 40 CFR 52.21(k), (l) and (m) – Air Quality Demonstration – presented in Section 8.0 and Appendix E.
- » 40 CFR 52.21(n) – Source Information – presented throughout this PSD permit application.
- » 40 CFR 52.21(o) – Additional Impacts Analysis – presented in Section 9.0 and Appendix E.
- » 40 CFR 52.21(p) – Class I Area Impacts Analysis – presented in Section 10.0 and Appendix E.

5.2 New Source Performance Standards

Several emission units at the MCGS will be subject to the federal New Source Performance Standards (NSPS) found at 40 CFR 60. The MCGS emission units subject to NSPS are identified as follows:

- » 40 CFR 60 Subpart A – NSPS General Provisions – all NSPS affected facilities will comply with the applicable NSPS Subpart A General Provision requirements.
- » 40 CFR 60 Subpart KKKK – NSPS for Stationary Combustion Turbines – the SCCT will be subject to and will comply with all applicable NSPS Subpart KKKK requirements.
- » 40 CFR 60 Subpart TTTTa – NSPS for GHG Emissions for Electric Generating Units - the SCCT will be subject to and will comply with all applicable NSPS Subpart TTTTa requirements.
- » 40 CFR 60 Subpart IIII – NSPS for Compression Ignition Internal Combustion Engines – both the diesel-fired Emergency Generators and the diesel-fired Emergency Firepump will be subject to and will comply with all applicable NSPS Subpart IIII requirements for emergency engines. Operation of emergency engines in non-emergency situations is limited to 100 hr/yr per engine.

- » 40 CFR 60 Subpart Dc – The natural gas-fired Fuel Gas Heaters, which are a natural gas-fired process heaters, are not subject to NSPS Subpart Dc because they meet the definition of process heater under 40 CFR 60.41c.
- » 40 CFR 60 Subpart Kc – NSPS for Volatile Organic Liquid (VOL) Storage Tanks Constructed After October 4, 2023 – The five diesel tanks proposed at the MCGS are not subject to NSPS Subpart Kc because the vapor pressure of diesel is well below the 0.5 psia NSPS Subpart Kc applicability threshold for tank controls found at 40 CFR 60.110c(c).

5.3 National Emission Standards for Hazardous Air Pollutants

National Emission Standards for Hazardous Air Pollutant (NESHAP) rules promulgated prior to the 1990 Clean Air Act Amendments are found at 40 CFR Part 61. The MCGS will not have any sources present that are subject to the NESHAP rules found at 40 CFR Part 61.

NESHAP rules promulgated after the 1990 Clean Air Act Amendments, which are also referred to as Maximum Achievable Control Technology (MACT) standards, are found at 40 CFR Part 63. As previously stated, the MCGS will be a non-major area source of HAP emissions. The following MACT standards will be applicable to operations at the MCGS:

- » 40 CFR 63 Subpart A – MACT General Provisions - all MACT affected facilities identified below will be subject to and comply with the applicable MACT General Provisions as detailed in MACT Subpart A.
- » 40 CFR 63 Subpart ZZZZ – MACT Standard for Reciprocating Internal Combustion Engines – the proposed diesel-fired emergency engines will be subject to the emergency engine provisions of MACT Subpart ZZZZ. However, based on a regulatory overlap provision, compliance with MACT Subpart ZZZZ is achieved simply by having the engines comply with NSPS Subpart IIII requirements, as specified at 40 CFR 63.6590(c).

The following MACT standards will not be applicable to emission units as MCGS for the reasons outlined below.:

- » 40 CFR 63 Subpart YYYY – MACT standard for Stationary Combustion Turbines – the SCCT will not be subject to MACT Subpart YYYY. The MCGS will be a non-major area source of HAP emissions and MACT Subpart YYYY only applies to HAP major sources as specified at 40 CFR 63.6080.
- » 40 CFR 63 DDDDD – Major Source Heater and Boiler MACT – this subpart only applies to major sources of HAP emissions as specified at 40 CFR 63.7485. Because the MCGS is an area HAP source, the MCGS will not be subject to this regulation.
- » 40 CFR 63 Subpart JJJJJ – Area Source Boiler MACT – this subpart does not apply to process heaters such as the fuel gas heaters as specified at 40 CFR 63.11193.

5.4 Acid Rain Program

The MCGS will be subject to the federal acid rain program and the regulations governing that program including:

- » 40 CFR Part 72 – Acid Rain Permits Regulation – The MCGS will apply for an Acid Rain permit following issuance by MDNR of a preconstruction and PSD permit for the facility. The MCGS will be subject to and will comply with all applicable provisions of 40 CFR 72.
- » 40 CFR Part 73 – Sulfur Dioxide Allowance System – Under USEPA Clean Air Markets system, the MCGS will secure one sulfur dioxide allowance for each ton of sulfur dioxide emitted every calendar year. The MCGS will be subject to and will comply with all applicable provisions of 40 CFR 73.
- » 40 CFR Part 75 – Continuous Emissions Monitoring Systems (CEMS) –A CEMS as required by 40 CFR 75 will be installed on each SCCT stack. The required CEMS will be an O₂ CEMS and include will monitoring for NO_x emissions. MCGS will not be required to install a CEMS for SO₂ emissions, but instead will be able to calculate SO₂ emissions using an emission factor as specified in 40 CFR 75 Table LM-1. The MCGS will be subject to and will comply with all applicable provisions of 40 CFR 75.

5.5 Cross-State Air Pollution Program

The MCGS will be subject the Cross State Air Pollution Rule found in 40 CFR 97 including an annual NO_x trading program under 40 CFR 97 Subpart AAAAA (10 CSR 10-6.372), an ozone season NO_x trading program under 40 CFR 97 Subpart EEEEE (10 CSR 10-6.374), and an annual SO₂ trading program under 40 CFR 97 Subpart CCCCC (10 CSR 10-6.376). The MCGS will comply with all applicable provisions of 40 CFR 97 and any State Implementation Plan rule that MDNR promulgates to implement federal Cross State Air Pollution Rule requirements.

6.0 MISSOURI AIR REGULATORY APPLICABILITY ANALYSIS

This section of the permit application addresses applicable MDNR air regulations. This includes federally enforceable State Implementation Plan regulations which have been promulgated pursuant to Section 110 of the Clean Air Act.

6.1 10 CSR 10-6.270: Acid Rain Source Permit Requirements

The requirements of 10 CSR 10-6.270 will apply to the proposed MCGS because it is an Electric Generating Unit subject to Title IV of the Clean Air Act. Evergy will comply with all applicable requirements in 10 CSR 10-6.270.

6.2 10 CSR 10-6.060: Construction Permits Required

The requirements of 10 CSR 10-6.060 will apply to the proposed MCGS. This regulation requires a preconstruction permit before beginning actual construction, and PSD permit. This application satisfies the requirements for the construction and PSD permit. As required, Evergy will not commence physical construction on the proposed MCGS facility until MDNR issues the preconstruction/PSD permit. Evergy will comply with all applicable requirements in 10 CSR 10-6.060.

6.3 10 CSR 10-6.060(8): Prevention of Significant Deterioration of Air Quality

The requirements of 10 CSR 10-6.060(8) will apply to the proposed MCGS. This regulation represents Missouri's PSD regulation. MDNR's PSD regulation incorporates by reference the federal PSD regulation found at 40 CFR 52.21. As stated previously, the MCGS project will be a new major source that requires PSD permitting for the NSR-regulated pollutants NO_x, CO, VOC, PM₁₀, PM_{2.5}, SAM and GHG (expressed as CO₂e). This application meets all regulatory requirements for a PSD permit application. Evergy will comply with all applicable requirements in 10 CSR 10-6.060(8).

7.0 PSD TOP-DOWN BEST AVAILABLE CONTROL TECHNOLOGY DEMONSTRATION

The requirements of 10 CSR 10-6.060 will apply to the proposed MCGS. This regulation represents Missouri's PSD regulation. MDNR's PSD regulation incorporates by reference the federal PSD regulation found at 40 CFR 52.21. For each emission unit that emits an NSR regulated pollutant that is subject to PSD review, a BACT demonstration is required as specified at 40 CFR 52.21(j). This section of the MCGS permit application provides the supporting BACT demonstrations. Information from the USEPA's RBLC is provided in Appendix C.

7.1 Top-down BACT Procedure

BACT is defined in the Missouri air quality regulations by adopting and implementing 40 CFR §52.21 as follows:

Best available control technology means an emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under the Act which would be emitted from any proposed major stationary source or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant. In no event shall application of best available control technology result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard under 40 CFR part 60, 61, or 63. If the Administrator determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard, or combination thereof, may be prescribed instead to satisfy the requirement for the application of best available control technology. Such standard shall, to the degree possible, set forth the emissions reduction achievable by implementation of such design, equipment, work practice or operation, and shall provide for compliance by means which achieve equivalent results.

The selection of BACT requires consideration of cost, environmental, and energy impacts. In the USEPA's draft document New Source Review Workshop Manual (USEPA, October 1990), USEPA recommends a "top-down" approach when evaluating commercially available and demonstrated air pollution control technologies for BACT. Note that a top-down approach is suggested by policy and not by regulation. For certain small emission sources, the BACT demonstration may depend on what is typically used in industrial applications as detailed in the RBLC information in Appendix C. From the definition of BACT, if a facility is subject to a NSPS or NESHAP standard, the selected BACT must never result in an emission limit that is less stringent than any applicable NSPS and/or NESHAP rule.

The five steps in the top-down process are described below.

Step 1:

The first step in a "top-down" analysis is to identify all "available" control options. Available control options are those air pollution control technologies or techniques with a practical potential for application to the emissions unit and the regulated pollutant under evaluation.

Step 2:

In the second step, the technical feasibility of each control option identified in step 1 is evaluated with respect to source-specific (or emissions unit-specific) factors. Technically infeasible control options are then eliminated from further consideration.

Step 3:

In step 3, all control alternatives not eliminated in step 2 are ranked in order of overall control effectiveness for the pollutant under review, with the most effective control alternative at the top. An applicant proposing the top control alternative need not provide cost and other detailed information in regard to other control options.

Step 4:

Next, the energy, environmental, and economic impacts of the available and technically feasible control options are considered.

Step 5:

The most effective control option not eliminated in step 4 is selected as BACT.

The “top-down” approach has been employed in this analysis to evaluate available pollution controls for the proposed MCGS. The following sections describe the pollutant-by-pollutant BACT for all emissions units at the proposed MCGS.

7.2 SCCT BACT

The SCCT unit proposed for the MCGS includes a Mitsubishi Model M501JAC CT. The aggregate flue gas from the combustion turbine and is routed to SCR and OxCat emission control systems before exiting the main stack. The BACT demonstration for the SCCT is presented as follows for each NSR regulated pollutant that is emitted.

7.2.1 SCCT NO_x BACT

Step 1 – Identify All Control Technologies

Control strategies that could potentially be employed to control NO_x emissions from simple-cycle units include:

1. Dry Low-NO_x Combustors
2. Water Injection
3. Selective Catalytic Reduction (SCR)
4. Selective Non-Catalytic Reduction (SNCR)
5. Non-Selective Catalytic Reduction (NSCR)

Dry Low-NO_x Combustors

A low NO_x burner is considered a combustion control as it is designed to minimize combustion temperatures by delaying combustion by staging the air or fuel in multiple zones. The initial fuel-air mixture is deliberately made very rich or very lean, which slows the combustion process and reduces the peak flame temperatures and thermal NO_x production. This balance of fuel/air/temperature is less effective using a liquid fuel.

Water Injection

Water is injected in certain combustion zones, which slows the combustion process and reduces the peak flame temperatures and thermal NO_x production.

Selective Catalytic Reduction

Selective catalytic reduction (SCR) involves injecting ammonia into the flue gases. The flue gases are then passed through a catalyst bed where NO_x is reduced to N₂ gas and water. The SCR is sized based on exhaust gas parameters to provide a certain gas velocity and residence time in the catalyst bed. The optimum temperature for SCR depends on the catalyst, but is usually between 550° and 900°F.

Selective Non-Catalytic Reduction

Selective non-catalytic reduction (SNCR) involves injecting ammonia into the flue gases to reduce the NO_x to N₂, but without the use of catalysts. Relatively high temperatures within a limited range are required for the SNCR reactions to proceed effectively. The optimum temperature range for SNCR is between 1600° and 2000°F.

Non-Selective Catalytic Reduction

Non-selective catalytic reduction (NSCR) is a technology used for exhaust streams with a low oxygen content. NSCR systems use a catalyst that reduces emissions of CO and VOC, as well as NO_x. It requires precise adjustments of process conditions such as oxygen content and temperature, and works best within certain windows of inlet concentrations of NO_x, CO, and VOC. It has been effective only in fuel-rich environments where combustion gases contain very low levels of oxygen.

Step 2 – Eliminate Technically Infeasible Options

Selective Non-Catalytic Reduction

Consistent with efficient combustion operation, the exhaust gas temperatures of the proposed turbine are expected to be lower than the optimal temperature window required for SNCR. As a result, burners would be necessary to raise the temperature of the exhaust stream, which would result in additional combustion-related emissions and additional energy requirements. As such, SNCR is considered technically infeasible.

Non-Selective Catalytic Reduction

NSCR requires fuel-rich exhaust that contain very low levels of oxygen (<0.5%). The exhaust streams of the proposed turbines are expected to contain greater than 4% oxygen. As such, NSCR is considered technically infeasible.

Step 3 – Rank Remaining Control Technologies by Control Efficiencies

The following table contains the technically feasible NO_x control technologies for a SCCT firing natural gas, ranked in order of control effectiveness.

TABLE 7.1 STEP 3 - BACT RANKING OF NOX CONTROL TECHNOLOGIES FOR TURBINES FIRING NATURAL GAS

RANKING	CONTROL TECHNOLOGY	EMISSIONS, PPMVD AT 15% O ₂
1	SCR + Dry Low-NO _x Combustor Design	2.5
1	SCR	2.5
2	Dry Low-NO _x Combustor Design	9
3	Water Injection	9 - 42

The following table contains the technically feasible NO_x control technologies for a SCCT firing diesel, ranked in order of control effectiveness for natural gas combustion.

TABLE 7.2 STEP 3 - BACT RANKING OF NOX CONTROL TECHNOLOGIES FOR TURBINES FIRING DIESEL

RANKING	CONTROL TECHNOLOGY	EMISSIONS, PPMVD AT 15% O ₂
1	SCR + Water Injection	5
1	SCR	5
3	Water Injection	42

Step 4 – Evaluate Most Effective Controls

Low NO_x concentrations are possible be met with SCR alone but would require more catalyst and/or reagent than when SCR is used with a combustion control technology. When combusting natural gas a dry low-NO_x combustor design along with an SCR system is the most effective control technique for a combustion turbine. When combusting diesel, water injection along with an SCR system is the most effective control technique for a combustion turbine. Although there are adverse energy and environmental impacts associated with SCR systems combining the technology with dry low-NO_x combustion design or water injection limits the required ammonia injection and minimizes SCR size, this technology has been demonstrated in numerous combustion turbine applications. Because MCGS will use the most effective control technique available, no further discussion of the energy, environmental, or economic impacts of the other options is necessary.

Step 5 – Select BACT

When firing natural gas, the SCCT will utilize an aqueous ammonia-based SCR control system which will yield a vendor-guaranteed flue gas NO_x concentration of 2.5 ppmvd NO_x @ 15% O₂ (24-hr-average basis) at the main stack. Additionally, dry low-NO_x combustor design will be used.

When firing diesel, the SCCT will utilize an aqueous ammonia-based SCR control system which will yield a vendor-guaranteed flue gas NO_x concentration of 5 ppmvd NO_x @ 15% O₂ (24-hr-average basis) at the main stack. Additionally, water injection will be used during fuel oil firing ULSD.

Based on a review of RBLC, this control system represents the “top” available and feasible NO_x control technology for SCCT systems during normal operation. There are no RBLC entries with a PSD BACT limit lower than 2.5 ppmvd @ 15% O₂ when firing natural gas or lower than 5 ppmvd @ 15% O₂ when firing diesel.

During normal operation when firing natural gas, SCR with a NO_x performance level of 2.5 ppmvd @ 15% O₂ on a 24-hr-average basis is selected as BACT for NO_x for the SCCT. During normal operation when firing diesel, SCR with a NO_x performance level of 5 ppmvd @ 15% O₂ on a 24-hr-average basis is selected as BACT for NO_x for the SCCT.

The MCGS is proposing to demonstrate compliance with these limits with a NO_x CEMS. NO_x emissions during startup/shutdown, commissioning, tuning and NERC testing will be addressed by the secondary BACT outlined in Section 7.2.7.

7.2.2 SCCT CO BACT

Step 1 – Identify All Control Technologies

Control strategies that could potentially be employed to control CO emissions from simple cycle units include:

1. Oxidation Catalyst
2. Good Combustion Practices

Oxidation Catalyst

Catalytic oxidizers, also known as catalytic incinerators, are oxidation systems (similar to thermal oxidizers) that control CO and VOC emissions. Catalytic oxidizers use a catalyst to promote the oxidation of CO and VOC to carbon dioxide (CO₂) and water. The catalyst allows oxidation to occur at lower temperatures (650°F – 1000°F) than with thermal oxidation.

Good Combustion Practices

CO and VOC emissions can be minimized using good combustion practices such as good equipment design, use of gaseous fuels for good mixing, and proper combustion techniques such as maintaining the optimum air/fuel ratio.

Step 2 – Eliminate Technically Infeasible Options

All identified technologies are technically feasible.

Step 3 – Rank Remaining Control Technologies by Control Efficiencies

The following table contains the technically feasible CO control technologies for the turbine, ranked in order of control effectiveness.

TABLE 7.3 STEP 3 BACT RANKING OF CO CONTROL TECHNOLOGIES FOR TURBINES

RANKING	CONTROL TECHNOLOGY	EMISSIONS, PPMVD AT 15% O ₂ (NATURAL GAS)	EMISSIONS, PPMVD AT 15% O ₂ (DIESEL)
1	Oxidation Catalyst	2	6
2	Good Combustion Practices	9 - 42	25 - 42

Step 4 – Evaluate Most Effective Controls

For CO emissions, both catalytic oxidation and good combustion practices are technically feasible. Oxidation catalysts are technically feasible; however, their use does have some adverse environmental and energy impacts. The pressure drop through the catalyst bed results in increased electrical demand. From an environmental perspective, the spent catalyst must be handled and disposed of as a hazardous or solid waste. Even with these adverse impacts, oxidation catalysts are a proven technology and frequently used to reduce CO emissions from gas-fired combustion turbines. Because the MCGS will use the most effective control technique available, no further discussion of the energy, environmental, or economic impacts of the other options is necessary.

Step 5 – Select BACT

The SCCT will utilize a OxCat control system which will yield a vendor-guaranteed flue gas CO concentration of 2 ppmvd CO @ 15% O₂ (24-hr-average basis) when firing natural gas and 6 ppmvd CO @ 15% O₂ (24-hr-average basis) when firing diesel. Additionally, good combustion practices will also be maintained. Based on a review of RBLC, this control system represents the “top” available and feasible CO control technology for simple cycle units.

OxCat with a CO concentration level of 2 ppmvd @ 15% O₂ based on a 24-hr-average basis when firing natural gas and 6 ppmvd @ 15% O₂ based on a 24-hr-average basis when firing diesel is selected as BACT for CO for the SCCT. The MCGS is proposing to demonstrate compliance with this limit with a CO CEMS. CO emissions during startup/shutdown, commissioning, tuning and NERC testing will be addressed by the secondary BACT outlined in Section 7.2.7.

7.2.3 SCCT VOC BACT

Step 1 – Identify All Control Technologies

Control strategies that could potentially be employed to control VOC emissions from turbines include:

1. Oxidation Catalyst
2. Good Combustion Practices

Oxidation Catalyst

Previously discussed in Section 7.2.2.

Good Combustion Practices

Previously discussed in Section 7.2.2.

Step 2 – Eliminate Technically Infeasible Options

All identified technologies are technically feasible.

Step 3 – Rank Remaining Control Technologies by Control Efficiencies

The following table contains the technically feasible VOC control technologies for the turbine, ranked in order of control effectiveness.

TABLE 7.4 STEP 3 BACT RANKING OF VOC CONTROL TECHNOLOGIES FOR TURBINES

RANKING	CONTROL TECHNOLOGY	EMISSIONS, PPMVD AT 15% O ₂ (NATURAL GAS)	EMISSIONS, PPMVD AT 15% O ₂ (DIESEL)
1	Oxidation Catalyst	2	6
3	Good Combustion Practices	9 - 42	25 - 42

Step 4 – Evaluate Most Effective Controls

For VOC emissions, both catalytic oxidation and good combustion practices are technically feasible. Oxidation catalysts are technically feasible; however, their use does have some adverse environmental and energy impacts. The pressure drop through the catalyst bed results in increased electrical demand. From an environmental perspective, the spent catalyst must be handled and disposed of as a hazardous or solid waste. Even with these adverse impacts, oxidation catalysts are a proven technology and frequently used to reduce VOC emissions from gas-fired combustion turbines. Because the MCGS will use the most effective control technique available, no further discussion of the energy, environmental, or economic impacts of the other options is necessary.

Step 5 – Select BACT

The SCCT will utilize an OxCat system which will yield a vendor-guaranteed flue gas VOC concentration of 2 ppmvd VOC @ 15% O₂ when firing natural gas and 6 ppmvd VOC @ 15% O₂ when firing diesel. Additionally, good combustion practices will also be maintained. Based on a review of RBLC, this control system represents the “top” available and feasible VOC control technology for simple cycle units.

OxCat with a VOC concentration of 2 ppmvd VOC @ 15% O₂ when firing natural gas and 6 ppmvd VOC @ 15% O₂ when diesel are selected as BACT for VOC. The MCGS proposes that this BACT limit be demonstrated by a stack test from the main stack. VOC emissions during startup/shutdown, commissioning, tuning and NERC testing will be addressed by the secondary BACT outlined in Section 7.2.7.

7.2.4 SCCT PM₁₀ and PM_{2.5} BACT

Step 1 – Identify All Control Technologies

Control strategies that could potentially be employed to control PM₁₀ and PM_{2.5} emissions from turbines include:

1. Add-on PM Controls (Cyclones, Electrostatic Precipitators (ESP), and Baghouse)
2. Clean Fuels and Good Combustion Practices

Add-on PM Controls

Add-on PM controls such as cyclones, ESPs, and baghouse are designed to remove filterable particulate matter. From the combustion process this is typically ash from a solid fuel.

Clean Fuels and Good Combustion Practices

Pipeline quality natural gas, ULSD, and good combustion practices minimize the formation on condensable particulate matter.

Step 2 – Eliminate Technically Infeasible Options

None of the add-on control technologies are technically feasible. Post-combustion PM controls, such as fabric filter baghouses and/or electrostatic precipitators, are not technically feasible for this type of emissions unit. The combustion of natural gas and ULSD produces very low amounts of filterable particulate matter and combustion turbines operate with large amounts of excess air. This combination makes the listed add-on PM controls ineffective and technically infeasible.

Step 3 – Rank Remaining Control Technologies by Control Efficiencies

The only remaining control technology is clean fuels and good combustion practices.

Step 4 – Evaluate Most Effective Controls

The only remaining control technology is clean fuels and good combustion practices.

Step 5 – Select BACT

By virtue of firing clean-burning pipeline natural gas and ULSD, PM species (PM₁₀ and PM_{2.5}) are emitted in small quantities from the SCCT. As described in Section 4.2, use of a catalytic oxidation system results in additional PM emissions, but this tradeoff is acceptable to further control emissions of VOC and CO. Based on the data supplied by the manufacturer, the expected flue gas PM concentration exiting the stack will still be very dilute. The selected PM BACT is the use of low sulfur pipeline natural gas, ULSD, and good combustion practices such that PM emissions will be limited to the vendor provided value of 20 lb/hr when firing natural gas and 49 lb/hr when firing ULSD. The MCGS proposes that this BACT limit be demonstrated by a stack test.

7.2.5 SCCT SO₂ and Sulfuric Acid Mist (SAM) BACT

Step 1 – Identify All Control Technologies

Control strategies that could potentially be employed to control SO₂/SAM emissions from turbines include:

1. Flue Gas Desulfurization (FGD) Scrubber
2. Dry Sorbent Injection
3. Good Combustion Practices

Flue Gas Desulfurization Scrubber

FGD systems remove SO₂/SAM from exhaust streams by using an alkaline reagent such as limestone to form sulfite and sulfate salts. This process can be either in a dry or wet scrubber. Wet FGD systems generate wastewater and wet sludge streams requiring treatment and disposal. In dry FGD systems, a lime slurry is injected into the combustion process exhaust stream which reacts with the SO₂/SAM. This material is then removed by downstream particulate control device.

Dry Sorbent Injection

Dry sorbent injection is a post-combustion technology involving the reaction of a lime sorbent with SO₂ and SO₃. The reduced availability of SO₂ and SO₃ in the exhaust stream reduces SAM formation. The reacted lime sorbent is then removed by a downstream particulate control device.

Clean Fuels and Good Combustion Practices

Pipeline quality natural gas, ULSD, and good combustion practices minimize sulfur in the exhaust stream and minimize the formation of SO₂/SAM.

Step 2 – Eliminate Technically Infeasible Options

Because the sulfur content in pipeline natural gas and ULSD are extremely low, the SO₂/SAM concentration in the flue gas will be very dilute. For this reason, wet and dry scrubbing of SO₂/SAM emissions is technically infeasible. Additionally, wet and dry scrubbing would have the negative impact of generating an additional wastewater stream and dry technologies require add-on particulate matter control devices that are not installed on combustion turbines.

Step 3 – Rank Remaining Control Technologies by Control Efficiencies

The only remaining control technology is clean fuels and good combustion practices.

Step 4 – Evaluate Most Effective Controls

The only remaining control technology is clean fuels and good combustion practices.

Step 5 – Select BACT

Emissions of SO₂ occur from the oxidation of sulfur in the gaseous fuel fired in the SCCT. The majority of fuel sulfur is converted to SO₂. A portion of the SO₂ will be further converted to H₂SO₄, also referred to as SAM, which will exit from the main stack.

The proposed BACT for SO₂/SAM emissions includes minimizing the formation of SO₂ and H₂SO₄ by using pipeline-quality natural gas with sulfur content of 0.5 grains sulfur per 100 scf or less and ULSD with a sulfur content of 15 ppm or less.

7.2.6 SCCT Greenhouse Gas (GHG) BACT for Natural Gas Operations

Step 1 – Identify All Control Technologies

Control strategies that could potentially be employed to control CO₂e emissions from turbines include:

1. Carbon capture and sequestration (CCS)
2. Good combustion practices

Carbon Capture and Sequestration

CCS systems remove CO₂ from exhaust streams by reacting the CO₂ in the exhaust gases with an amine-based solution. The exhaust gases from the combustion process first pass through quencher which is a direct contact cooler. Cooling water is circulated through the quencher in a countercurrent flow to the incoming flue gas. This cools the stack gas which is sent to the absorber. The cooled stack gases from the quencher move into the absorber where they are simple in a packed bed absorption column with the CO₂ lean amine solvent solution. Here the solvent reacts with the CO₂ in the stack gas forming a CO₂ rich solvent. This removes approximately 90% of the CO₂ from the stack gas. Process steam is used to strip the CO₂ from the solvent then the CO₂ is compressed and sent by CO₂ pipeline to a CO₂ sequestration well to be permanently geologically stored.

Clean Fuels and Good Combustion Practices

Pipeline quality natural gas and good combustion practices minimize the formation on CO₂.

Step 2 – Eliminate Technically Infeasible Options

Research has been performed by the U.S. Department of Energy and others to limit GHG emissions from simple cycle units by employing CCS, but this technology has not been commercially demonstrated and primarily limited to coal fired units. In a CCS system, CO₂ emissions are captured, scrubbed, condensed, and routed via pipeline to an underground formation where the CO₂ is stored indefinitely (sequestered). Currently, the MCGS site lacks the required infrastructure, such as a nearby CO₂ pipeline, to make CCS feasible. For these reasons, CCS is rejected as BACT for GHG control.

Step 3 – Rank Remaining Control Technologies by Control Efficiencies

The only remaining control technology is clean fuels and good combustion practices.

Step 4 – Evaluate Most Effective Controls

The only remaining control technology is clean fuels and good combustion practices.

Step 5 – Select BACT

From the definition of BACT, if a facility is subject to an NSPS standard, the selected BACT must never result in an emission limit that is less stringent than any applicable NSPS standard. Currently simple-cycle units which commence construction after May 23, 2023, are subject to 40 CFR 60 Subpart TTTTa which became effective on July 8th, 2024 and is currently subject to litigation. This rule updated the standards under 40 CFR 60 Subpart TTTT which now impacts simple-cycle units that commences construction after January 8, 2014, but on or before May 23, 2023. Based on recent USEPA proposals the CO₂ NSPS standards for simple-cycle units are proposed to be rescinded including both Subpart TTTTa and TTTT. The USEPA is also proposing to rescind the CO₂ endangerment finding which could eventually remove CO₂ from the PSD program and therefore, eliminate the need for any CO₂ BACT requirement.

Because of this regulatory uncertainty Evergy is proposing a primary BACT based on good combustion practices and a secondary BACT which is only applicable if an NSPS standard applies. Neither BACT would apply if CO₂ is no longer regulated under the PSD program.

The primary CO₂ BACT is the use of pipeline natural gas or ULSD and good combustion practices such that CO₂ emissions will be limited to 2,445,314 tons/yr on a 12-month rolling average. Evergy proposes that this BACT limit be demonstrated using the CO₂ emissions reported under 40 CFR Part 75.

For the secondary CO₂ BACT, if 40 CFR 60 Subpart TTTTa applies then Evergy is proposing that the CO₂ BACT be compliance with 40 CFR 60 Subpart TTTTa. The compliance demonstration will follow the NSPS Subpart TTTTa monitoring, recordkeeping, and reporting procedures. If 40 CFR 60 Subpart TTTT applies then Evergy is proposing that the CO₂ BACT be compliance with 40 CFR 60 Subpart TTTT. The compliance demonstration will follow the NSPS Subpart TTTT monitoring, recordkeeping, and reporting procedures.

The following table contains a summary of the proposed CO₂e BACT.

TABLE 7.5 CO₂ BACT SUMMARY

APPLICABILITY	CO ₂ BACT	Monitoring, Recordkeeping, and Reporting
Primary BACT Limit ¹	Emission limit is 2,445,314 tons/yr on a 12 month rolling average for each turbine.	CO ₂ monitoring and recordkeeping shall follow the procedures of 40 CFR Part 75.
Secondary BACT Limit ¹ (If NSPS TTTTa Applies)	Applicable emission limits under 40 CFR 60.5520a(a) and Table 1 of 40 CFR 60 Subpart TTTTa.	Following applicable procedures under 40 CFR 60.5535a.

APPLICABILITY	CO ₂ BACT	Monitoring, Recordkeeping, and Reporting
Secondary BACT Limit ¹ (If NSPS TTTT Applies)	Applicable emission limits under 40 CFR 60.5520(a) and Table 1 of 40 CFR 60 Subpart TTTT.	Following applicable procedures under 40 CFR 60.5535.

¹ Requirements do not apply if CO₂ is no longer regulated under the PSD program.

7.2.7 SCCT Secondary BACT

The BACT emission limits discussed above are during normal operation of the simple cycle unit. These limits are based on emission guarantees from the manufacturer and are achievable during periods of normal steady-state SCCT operation. However, these emission limits are not achievable during periods of startup, shutdown, and commissioning of the SCCT. During periods of startup, shutdown, and commissioning, the burners do not operate at their maximum efficiency which increases certain emission rates due to lower fuel input and operational temperatures. The SCR and oxidation catalyst are also not effective during startup and shutdown due primarily to much lower exhaust temperatures. The SCR and oxidation catalysts use chemical reactions to eliminate the pollutants which will not react below threshold temperatures. This makes it impossible for the SCCT to achieve the BACT limits that are based on a flue gas temperature and flow rates during normal steady-state simple cycle unit operation.

In the definition of BACT, it states that a BACT limit is one that, “on a case-by-case basis is determined to be achievable.” Therefore, the MCGS is proposing separate limits that are “achievable” during periods of startup, shutdown, and commissioning. Permitting of separate secondary limits is consistent with what has been proposed and accepted by other power generating facilities in the RBLC.

The MCGS is proposing secondary NO_x, CO, and VOC limits that include both normal operation and startup and shutdown events in the form of a total mass based annual limitation. Compliance with these limits will be determined via CEMS for NO_x and CO. For VOC, the MCGS proposes the use of CO as a surrogate indicator for VOC emissions for BACT, since the OxCat controls both CO and VOC emissions and the magnitude of emissions of both pollutants are typically affected in the same way by turbine operation. Since CO emissions will be continuously monitored using a CO CEMS, it is an appropriate indicator to assess the operation of the OxCat.

Annual mass limits provided in this application are based on normal operations, startup, and shutdown of the SCCT. Startup is defined as the period from when a combustion turbine is started until the SCR and OxCat stabilizes. The shutdown period is defined as the period beginning when the combustion turbine receives a “turbine stop” command and the generator output drops below the minimum stable load and ending when a flame detection signal is no longer recorded in the plant’s control system.

The proposed secondary BACT limits are provided in Table 7.6.

TABLE 7.6 SCCT SECONDARY BACT

TYPE	12-Month Rolling (tons/yr) ¹
NO _x	440.9
CO	2,597.3

¹ Applies to each SSCT

Secondary BACT limits have not been proposed for SAM, PM/PM10/PM2.5, and CO₂, as the MCGS does not anticipate that emissions of these pollutants will exceed the proposed primary BACT emission limits during startup and shutdown events.

It is anticipated that NO_x, CO, and VOC emissions during commissioning of the SCCT will be higher than the normal hourly emissions during certain phases of commissioning. SCR and OxCat are installed after completing cleaning of the unit and auxiliary systems. The SCCT are then tuned, commissioned, and tested at various loads. SCR and OxCat will not be able to achieve maximum design control efficiencies at low loads due to less than optimal exhaust temperatures.

Higher-than-normal emissions from the SCCT may occur during combustion turbine tuning and optimization maintenance activities. In addition to the combustion turbine optimization during the commissioning period, the combustion turbine's fuel system requires periodic tuning, including after major overhauls, to maintain compliance with the manufacturer's specification for emissions and combustion dynamics. Finally, higher-than-normal emissions and atypical load operations are anticipated during required NERC tests. The turbine tuning is conducted across the combustor's load range and according to manufacturer recommendations to minimize NO_x and CO production while ensuring combustor stability. During combustion turbine tuning and optimization activities and the required NERC reliability testing, the SCCT CO and NO_x emissions will be similar to the SUSD emissions. The emissions from these activities will be included in the NO_x and CO secondary BACT tonnage limits.

7.3 Fuel Gas Heaters BACT

The MCGS proposes to have three fuel gas heaters. To prevent liquid droplets from entering the SCCT, the natural gas fuel to the SCCT is indirectly heated in a natural gas-fired heater that both has a rated firing rate of 13.11 MMBtu/hr-HHV. The heaters will be permitted to operate continuously (8,760 hr/yr), with only two heaters in operation at a time.

7.3.1 Fuel Gas Heaters NO_x BACT

The use of add-on NO_x controls such as SCR or SNCR is not practically feasible for these small heaters. NO_x BACT for the heaters is proposed to be the use of low NO_x burner technology.

7.3.2 Fuel Gas Heaters CO BACT

The use of add-on CO controls such as an oxidation catalyst system is not practically feasible for these small heaters. CO BACT for the heaters is proposed to be the use of good combustion practices.

7.3.3 Fuel Gas Heaters VOC BACT

The use of add-on VOC controls such as an oxidation catalyst system is not practically feasible for these small heaters. VOC BACT for the heaters is proposed to be the use of good combustion practices.

7.3.4 Fuel Gas Heaters SO₂ BACT

The use of add-on SO₂ controls such as wet/dry scrubbing is not practically feasible for these small heaters. SO₂ BACT for the heaters is proposed to be the use of pipeline quality natural gas.

7.3.5 Fuel Gas Heaters PM BACT

The use of add-on PM controls such as a fabric filter baghouse or electrostatic precipitator is not practically feasible for these small heaters. PM₁₀/PM_{2.5} BACT for the heaters is proposed to be the use of low sulfur pipeline natural gas and good combustion practices.

7.3.6 Fuel Gas Heaters GHG BACT

It is not technically feasible to use CCS technology in this application. The proposed GHG BACT for these small heaters is the use of clean burning and efficient pipeline natural gas fuel and the employment of good combustion practices.

7.4 Diesel-fired Emergency Generator

The MCGS proposes to have two emergency diesel fired generators. The emergency generators will be limited 100 hr/yr of operation or less in non-emergency operating modes due to the engines' emergency classification status.

In both cases, a 3,000-kilowatt (kW) emergency diesel-fired IC engine will be used to power the emergency standby generator for facility. As required by regulation, each engine will only fire ULSD with a maximum sulfur content of 15 parts per million by weight (ppmw), and will be a USEPA-certified Tier 2 engine.

Step 1 – Identify All Control Technologies

Emergency engines are manufactured and purchased based on the EPA tier standards found in 40 CFR Part 1039. The control strategies that could potentially be employed for emission control:

1. Tier 4 (SCR and Catalytic Oxidizers) [Add-on Controls]
2. Tier 2 (emergency engine) [Good Combustion Practices]

Tier 4 [Add-on Controls]

Tier 4 engines are designed for and include an SCR and oxidation catalyst. SCR involves injecting ammonia into the flue gases. The flue gases are then passed through a catalyst bed

where NO_x is reduced to N₂ gas and water. The SCR is sized based on exhaust gas parameters to provide a certain gas velocity and residence time in the catalyst bed. The optimum temperature for SCR depends on the catalyst, but is usually between 550° and 900°F. Oxidation catalyst use high temperatures to destroy CO/VOC by oxidizing them to carbon dioxide and water and require temperatures usually between 600°F to 800°F.

Tier 2 [Good Combustion Practices]

Tier 2 engines are designed for faster startup and infrequent operation to provide power and water in emergency situations. These operating scenarios make it difficult to use post-combustion controls. Good combustion practices utilize balancing combustion temperature, fuel flow, and oxygen flow to minimize the formation of pollution.

Step 2 – Eliminate Technically Infeasible Options

The Tier 4 add-on controls including SCR and oxidation catalyst are technically infeasible. Because of the faster start requirement and infrequent operation, it is very difficult to bring the SCR and oxidation catalyst up to temperature before the engines are shut down. Based on discussions with engine manufacturer's these engines could be installed with block heaters to warm the systems. However, this engine is being used in emergency situations where power will not be available to operate the block heater.

Step 3 – Rank Remaining Control Technologies by Control Efficiencies

The only remaining control technology is the purchase of a Tier 2 emergency engine.

7.4.1 Emergency Generator NO_x BACT

The proposed NO_x BACT for each emergency generator is the use of a USEPA-certified Tier 2 engine. Each engine will be subject to and will comply with all applicable NSPS Subpart IIII requirements for emergency engines.

7.4.2 Emergency Generator CO BACT

The proposed CO BACT for each emergency generator is the use of a USEPA-certified Tier 2 engine. Each engine will be subject to and will comply with all applicable NSPS Subpart IIII requirements for emergency engines.

7.4.3 Emergency Generator VOC BACT

The proposed VOC BACT for each emergency generator is the use of a USEPA-certified Tier 2 engine. Each engine will be subject to and will comply with all applicable NSPS Subpart IIII requirements for emergency engines.

7.4.4 Emergency Generator SO₂ BACT

The use of add-on SO₂ controls such as wet/dry scrubbing is not practically feasible for these engines. SO₂ BACT for the engines is proposed to be the use of ULSD.

7.4.5 Emergency Generator PM BACT

The proposed PM BACT for each emergency generator is the use of a USEPA-certified Tier 2 engine. Each engine will be subject to and will comply with all applicable NSPS Subpart IIII requirements for emergency engines.

7.4.6 Emergency Generator GHG BACT

It is not technically feasible to use CCS technology in this application. The proposed GHG BACT for each engine is the use of efficient USEPA-certified Tier 2 engine.

7.5 Diesel Fired Emergency Firepump

The MCGS proposes to have one emergency diesel-fired firepump. The firepump engine will be limited 100 hr/yr of operation or less in non-emergency operating modes due to the engines' emergency classification status.

A 282 hp emergency diesel-fired IC engine will be used to power an emergency firepump. As required by regulation, the engine will only fire ULSD with a maximum sulfur content of 15 ppmw. The engine will be an USEPA-certified Tier 3 engine. Fire safety regulations require this engine be listed for fire pump service.

Step 1 – Identify All Control Technologies

Firepumps are manufactured and purchased based on the EPA tier standards found in 40 CFR Part 1039. The control strategies that could potentially be employed for emission control:

1. Tier 4 (SCR and Catalytic Oxidizers) [Add-on Controls]
2. Tier 3 (emergency firepumps) [Good Combustion Practices]

Tier 4 [Add-on Controls]

Tier 4 engines are designed for and include an SCR and oxidation catalyst. SCR involves injecting ammonia into the flue gases. The flue gases are then passed through a catalyst bed where NO_x is reduced to N₂ gas and water. The SCR is sized based on exhaust gas parameters to provide a certain gas velocity and residence time in the catalyst bed. The optimum temperature for SCR depends on the catalyst, but is usually between 550° and 900°F. Oxidation catalyst use high temperatures to destroy CO/VOC by oxidizing them to carbon dioxide and water and require temperatures usually between 600°F to 800°F.

Tier 3 [Good Combustion Practices]

Tier 3 engines are designed for faster startup and infrequent operation to provide power and water in emergency situations. These operating scenarios make it difficult to use post-combustion controls. Good combustion practices utilize balancing combustion temperature, fuel flow, and oxygen flow to minimize the formation of pollution.

Step 2 – Eliminate Technically Infeasible Options

The Tier 4 add-on controls including SCR and oxidation catalyst are technically infeasible. Because of the faster start requirement and infrequent operation, it is very difficult to bring the SCR and oxidation catalyst up to temperature before the engines are shut down. Engine manufacturers do not produce a fire pump certified to meet Tier 4 standards.

Step 3 – Rank Remaining Control Technologies by Control Efficiencies

The only remaining control technology is the purchase of a Tier 3 firepump.

7.5.1 Firepump NOx BACT

The proposed NOx BACT for the firepump is the use of a USEPA-certified Tier 3 engine. The engine will be subject to and will comply with all applicable NSPS Subpart IIII requirements for emergency engines.

7.5.2 Firepump CO BACT

The proposed CO BACT for the firepump is the use of a USEPA-certified Tier 3 engine. The engine will be subject to and will comply with all applicable NSPS Subpart IIII requirements for emergency engines.

7.5.3 Firepump VOC BACT

The proposed VOC BACT for the firepump is the use of a USEPA-certified Tier 3 engine. The engine will be subject to and will comply with all applicable NSPS Subpart IIII requirements for emergency engines.

7.5.4 Firepump SO₂ BACT

The use of add-on SO₂ controls such as wet/dry scrubbing is not practically feasible for this engine. SO₂ BACT for the engine is proposed to be the use of ULSD.

7.5.5 Firepump Pump PM BACT

The proposed PM BACT for the firepump is the use of a USEPA-certified Tier 3 engine. The engine will be subject to and will comply with all applicable NSPS Subpart IIII requirements for emergency engines.

7.5.6 Firepump GHG BACT

It is not technically feasible to use CCS technology in this application. The proposed GHG BACT for the engine is the use of efficient USEPA-certified Tier 3 engine.

7.6 Storage Tanks

The MCSG is proposing to have five fixed-roof diesel storage tanks. The main tanks for the SCCTs will be 1,300,000 gallons each. Two tanks will provide ULSD fuel to the emergency IC engines sized at 4,000 gallons each. The firepump engine will have a 500 gallons tank.

7.6.1 VOC BACT

ULSD has very low true vapor pressure, 0.006 psia, at storage conditions. As a result, the combined annual VOC emission from the tanks is expected to be very small. The emissions can be found in Table A-16 in Appendix A. There are no known diesel tanks industrial practice that have controls other than fixed roof storage. The proposed BACT for the tanks is the use of fixed-roof storage vessel.

7.7 Insulated SF6 Circuit Breakers

The MCSG is proposing to use insulated circuit breakers that contain SF₆ with a total SF₆ capacity of 2,240 pounds. There will be minor SF₆ leakage to the atmosphere from the circuit breakers.

7.7.1 CO₂e BACT

The SF₆ emissions from the facility are very low. Based on a review of the RBLC the use of modern circuit breakers that are gas-tight and are designed to achieve a leak rate of 0.5 percent by year is considered BACT.

7.8 BACT Summary Table

Table 7.7 contains a table summarizing the proposed BACT for each affected emissions unit and NSR regulated pollutant.

TABLE 7.7 BACT SUMMARY TABLE FOR THE MCGS

EMISSIONS UNIT	EMISSION UNIT ID	PSD POLLUTANT	PROPOSED BACT
SCCT1	SCCT1	NOx/NO ₂ /OZONE NATURAL GAS (PRIMARY) ¹	Selective catalytic reduction with a NOx performance level of 2.5 ppmvd @ 15% O ₂ (24-hr rolling average).
		NOx/NO ₂ /OZONE ULSD (PRIMARY) ¹	Selective catalytic reduction with a NOx performance level of 5 ppmvd @ 15% O ₂ (24-hr rolling average).
		NOx/NO ₂ /OZONE ALL FUELS (SECONDARY) ²	Good operational practices with a NOx performance level of 440.9 tons/yr (12-month rolling average).
		CO NATURAL GAS	Catalytic oxidation with a CO performance level of 2 ppmvd @ 15% O ₂ (24-hr rolling average).

EMISSIONS UNIT	EMISSION UNIT ID	PSD POLLUTANT	PROPOSED BACT
		(PRIMARY) ¹	
		CO ULSD (PRIMARY) ¹	Catalytic oxidation with a CO performance level of 6 ppmvd @ 15% O ₂ (24-hr rolling average).
		CO ALL FUELS (SECONDARY) ²	Good operational practices with a CO performance level of 2,597.3 tons/yr (12-month rolling average)
		VOC/OZONE ¹ NATURAL GAS	Catalytic oxidation with a VOC performance level of 2 ppmvd @ 15% O ₂ (stack test).
		VOC/OZONE ¹ ULSD	Catalytic oxidation with a VOC performance level of 6 ppmvd @ 15% O ₂ (stack test).
		PM ₁₀ /PM _{2.5} NATURAL GAS	Use of low sulfur pipeline natural gas and good combustion practices that limit PM emissions to 20 lb/hr (stack test).
		PM ₁₀ /PM _{2.5} ULSD	Use of ULSD and good combustion practices that limit PM emissions to 49 lb/hr (stack test).
		SO ₂ /H ₂ SO ₄ /SAM	Use of pipeline-quality natural gas with sulfur content not exceeding 0.5 grains S/100 scf or ULSD.
		GHG/CO ₂ /CO _{2E}	Good operational practices with a CO ₂ performance level of 2,445,314 tons/yr (12-month rolling average). ³
		GHG/CO ₂ /CO _{2E}	Compliance with applicable NSPS limitations. ⁴
SCCT2	SCCT2	NOx/NO ₂ /OZONE NATURAL GAS (PRIMARY) ¹	Selective catalytic reduction with a NOx performance level of 2.5 ppmvd @ 15% O ₂ (24-hr rolling average).
		NOx/NO ₂ /OZONE ULSD (PRIMARY) ¹	Selective catalytic reduction with a NOx performance level of 5 ppmvd @ 15% O ₂ (24-hr rolling average).
		NOx/NO ₂ /OZONE ALL FUELS (SECONDARY) ²	Good operational practices with a NOx performance level of 440.9 tons/yr (12-month rolling average).
		CO NATURAL GAS (PRIMARY) ¹	Catalytic oxidation with a CO performance level of 2 ppmvd @ 15% O ₂ (24-hr rolling average).
		CO ULSD (PRIMARY) ¹	Catalytic oxidation with a CO performance level of 6 ppmvd @ 15% O ₂ (24-hr rolling average).
		CO ALL FUELS (SECONDARY) ²	Good operational practices with a CO performance level of 2,597.3 tons/yr (12-month rolling average)
		VOC/OZONE ¹ NATURAL GAS	Catalytic oxidation with a VOC performance level of 2 ppmvd @ 15% O ₂ (stack test).
		VOC/OZONE ¹ ULSD	Catalytic oxidation with a VOC performance level of 6 ppmvd @ 15% O ₂ (stack test).

EMISSIONS UNIT	EMISSION UNIT ID	PSD POLLUTANT	PROPOSED BACT
		PM ₁₀ /PM _{2.5} NATURAL GAS	Use of low sulfur pipeline natural gas and good combustion practices that limit PM emissions to 20 lb/hr (stack test).
		PM ₁₀ /PM _{2.5} ULSD	Use of ULSD and good combustion practices that limit PM emissions to 49 lb/hr (stack test).
		SO ₂ /H ₂ SO ₄ /SAM	Use of pipeline-quality natural gas with sulfur content not exceeding 0.5 grains S/100 scf or ULSD.
		GHG/CO ₂ /CO _{2E}	Good operational practices with a CO ₂ performance level of 2,445,314 tons/yr (12-month rolling average). ³
		GHG/CO ₂ /CO _{2E}	Compliance with applicable NSPS limitations. ⁴
FUEL GAS HEATERS 1 – 3	FUELGASHEAT1, FUELGASHEAT2, AND FUELGASHEAT3	NO _x /NO ₂ /OZONE	Use of low-NO _x burner technology.
		CO	Use of good combustion practices.
		VOC/OZONE	Use of good combustion practices.
		SO ₂	Use of pipeline natural gas
		PM ₁₀ /PM _{2.5}	Use of good combustion practices.
		GHG/CO ₂ /CO _{2E}	Use of clean burning pipeline natural gas fuel and the employment of good combustion practices. ³
EMERGENCY STANDBY GENERATOR 1	EMERGEN1	NO _x /NO ₂ /OZONE	Use of an USEPA-certified Tier 2 engine.
		CO	Use of an USEPA-certified Tier 2 engine.
		VOC/OZONE	Use of an USEPA-certified Tier 2 engine.
		SO ₂	Use of ULSD.
		PM ₁₀ /PM _{2.5}	Use of an USEPA-certified Tier 2 engine.
		GHG/CO ₂ /CO _{2E}	Use of an USEPA-certified Tier 2 engine. ³
EMERGENCY STANDBY GENERATOR 2	EMERGEN2	NO _x /NO ₂ /OZONE	Use of an USEPA-certified Tier 2 engine.
		CO	Use of an USEPA-certified Tier 2 engine.
		VOC/OZONE	Use of an USEPA-certified Tier 2 engine.
		SO ₂	Use of ULSD.
		PM ₁₀ /PM _{2.5}	Use of an USEPA-certified Tier 2 engine.
		GHG/CO ₂ /CO _{2E}	Use of an USEPA-certified Tier 2 engine. ³
EMERGENCY FIRE WATER PUMP	FIREPUMP	NO _x /NO ₂ /OZONE	Use of an USEPA-certified Tier 3 engine.
		CO	Use of an USEPA-certified Tier 3 engine.
		VOC/OZONE	Use of an USEPA-certified Tier 3 engine.
		SO ₂	Use of ULSD.
		PM ₁₀ /PM _{2.5}	Use of an USEPA-certified Tier 3 engine.
		GHG/CO ₂ /CO _{2E}	Use of an USEPA-certified Tier 3 engine. ³

EMISSIONS UNIT	EMISSION UNIT ID	PSD POLLUTANT	PROPOSED BACT
SCCT ULSD TANK 1	FUELTK1	VOC/OZONE	Use of fixed-roof storage vessel.
SCCT ULSD TANK 2	FUELTK2	VOC/OZONE	Use of fixed-roof storage vessel.
EMERGENCY GENERATOR DIESEL TANK 1	EMERGENTK1	VOC/OZONE	Use of fixed-roof storage vessel.
EMERGENCY GENERATOR DIESEL TANK 2	EMERGENTK2	VOC/OZONE	Use of fixed-roof storage vessel.
EMERGENCY FIRE WATER PUMP DIESEL TANK	FIREPUMPTK	VOC/OZONE	Use of fixed-roof storage vessel.
INSULATED SF6 CIRCUIT BREAKERS	SF6	GHG/CO ₂ /CO _{2E}	Circuit breakers designed to meet 0.5% annual leak rate. ³

¹ SCCT NO_x, CO, and VOC standards apply during normal operation and exclude periods detailed in Section 3.2.

² SCCT NO_x and CO (Secondary) standards apply during all modes of operation.

³ Requirements no longer apply if CO₂ is not regulated under the PSD program.

⁴ If 40 CFR 60, Subpart TTTTa is rescinded, vacated, etc., and as a result the requirements of 40 CFR 60, Subpart TTTT become applicable, Evergy will comply with the applicable TTTT requirements instead. If both Subparts are rescinded, vacated, etc., this condition will no longer apply.

8.0 PSD AIR QUALITY IMPACTS DEMONSTRATION

The PSD regulations at 40 CFR 52.21(k), (l) and (m) require an Air Quality Impacts Analysis (AQIA) to demonstrate that emissions associated with this project will not cause or contribute to an exceedance of any NAAQS or PSD increment. This AQIA is performed primarily using dispersion modeling and background data from a nearby ambient air monitoring station.

Prior to finalizing air dispersion modeling in support of a project, MDNR requires that a dispersion modeling protocol be submitted for MDNR's review and approval. Appendix D contains the approved PSD Air Dispersion Modeling Protocol. The AQIA report is provided and included as Appendix E. The AQIA report demonstrates compliance with all PSD NAAQS and PSD increment requirements.

In addition to demonstrating compliance with NAAQS and PSD increment requirements, the AQIA addresses certain PSD requirements required for the additional impacts analysis pursuant to 40 CFR 52.21(o). The PSD additional impact analysis is addressed in Appendix E including a visibility analysis.

APPENDIX A AIR EMISSION CALCULATIONS

Table A-1
Emission Source Summary
Every Mullin Creek

Description	SCCT1 Natural Gas [tpy]	SCCT1 Fuel Oil [tpy]	SCCT1 (Worst-Case) [tpy]	SCCT2 Natural Gas [tpy]	SCCT2 Fuel Oil [tpy]	SCCT2 (Worst-Case) [tpy]	Fuel Gas Heater1 [tpy]	Fuel Gas Heater2 [tpy]	Emergency Diesel Generator 1 [tpy]	Emergency Diesel Generator 2 [tpy]	Diesel Firepump [tpy]	SF6 [tpy]	Diesel Tanks [tpy]	Total [tpy]
NOx	243.96	440.86	440.86	243.96	440.86	440.86	2.09	2.09	0.91	0.91	0.14			887.9
CO	399.98	2597.28	2597.28	399.98	2597.28	2597.28	2.12	2.12	0.39	0.39	0.12			5,199.7
VOC	203.76	862.56	862.56	203.76	862.56	862.56	0.31	0.31	0.71	0.71	0.14		1.42	1,728.7
SO2	27.83	26.32	27.83	27.83	26.32	27.83	0.08	0.08	8.25E-04	8.25E-04	1.71E-04			55.8
PM	91.05	214.62	214.62	91.05	214.62	214.62	0.31	0.31	0.03	0.03	5.59E-03			429.9
PM10	91.05	214.62	214.62	91.05	214.62	214.62	0.31	0.31	0.03	0.03	5.59E-03			429.9
PM2.5	91.05	214.62	214.62	91.05	214.62	214.62	0.31	0.31	0.03	0.03	5.59E-03			429.9
H2SO4	48.18	48.71	48.71	48.18	48.71	48.71								97.4
CO2	2,081,699	2,445,314	2,445,314	2,081,699	2,445,314	2,445,314	6716.98	6716.98	80.46	80.46	16.73			4,904,238.9
CH4	39.23	99.19	99.19	39.23	99.19	99.19	0.13	0.13	0.04	0.04	6.79E-04			198.7
N2O	3.92	19.84	19.84	3.92	19.84	19.84	0.01	0.01	0.01	0.01	1.36E-04			39.7
CO2e	2,083,837	2,453,348	2,453,348	2,083,837	2,453,348	2,453,348	6723.91	6723.91	80.74	80.74	16.75	131.60		4,920,453.4
1,3-Butadiene	0.01	0.24	0.24	0.01	0.24	0.24								0.48
Acetaldehyde	0.71		0.71	0.71		0.71			1.25E-05	1.25E-05	7.89E-05			1.42
Acrolein	0.11		0.11	0.11		0.11			3.90E-06	3.90E-06	9.51E-06			0.23
Benzene	0.21	0.82	0.82	0.21	0.82	0.82			3.84E-04	3.84E-04	9.59E-05			1.65
Ethylbenzene	0.57		0.57	0.57		0.57								1.14
Formaldehyde(2)	1.90	0.63	1.90	1.90	0.63	1.90			3.90E-05	3.90E-05	1.21E-04			3.79
Naphthalene	0.02	0.52	0.52	0.02	0.52	0.52			6.43E-05	6.43E-05	8.72E-06			1.05
PAH	0.04	0.60	0.60	0.04	0.60	0.60								1.20
Propylene Oxide	0.52		0.52	0.52		0.52								1.03
Toluene	2.31		2.31	2.31		2.31			1.39E-04	1.39E-04	4.20E-05			4.63
Xylene	1.14		1.14	1.14		1.14			9.54E-05	9.54E-05	2.93E-05			2.28
2-Methylnaphthalene							1.35E-06	1.35E-06						0.00
3-Methylcholanthrene							1.01E-07	1.01E-07						0.00
7,12-Dimethylbenz(a)anthracene							9.01E-07	9.01E-07						0.00
Acenaphthene							1.01E-07	1.01E-07						0.00
Acenaphthylene							1.01E-07	1.01E-07						0.00
Anthracene							1.35E-07	1.35E-07						0.00
Benz(a)anthracene							1.01E-07	1.01E-07						0.00
Benzene							1.18E-04	1.18E-04						0.00
Benzo(a)pyrene							6.76E-08	6.76E-08						0.00
Benzo(b)fluoranthene							1.01E-07	1.01E-07						0.00
Benzo(g,h,i)perylene							6.76E-08	6.76E-08						0.00
Benzo(k)fluoranthene							1.01E-07	1.01E-07						0.00
Chrysene							1.01E-07	1.01E-07						0.00
Dibenzo(a,h)anthracene							6.76E-08	6.76E-08						0.00
Dichlorobenzene							6.76E-05	6.76E-05						0.00
Fluoranthene							1.69E-07	1.69E-07						0.00
Fluorene							1.58E-07	1.58E-07						0.00
Formaldehyde							4.22E-03	4.22E-03						0.01
Hexane							1.01E-01	1.01E-01						0.20
Indeno(1,2,3-cd)pyrene							1.01E-07	1.01E-07						0.00
Naphthalene							3.43E-05	3.43E-05						0.00
Phenanthrene							9.57E-07	9.57E-07						0.00
Pyrene							2.81E-07	2.81E-07						0.00
Toluene							1.91E-04	1.91E-04						0.00
Arsenic		0.2	0.16		0.16	0.16	1.13E-05	1.13E-05						0.33
Beryllium							6.76E-07	6.76E-07						0.00
Cadmium		0.1	0.07		0.07	0.07	6.19E-05	6.19E-05						0.14
Chromium		0.2	0.2		0.2	0.2	7.88E-05	7.88E-05						0.33
Cobalt							4.73E-06	4.73E-06						0.00
Lead		0.2	0.2		0.2	0.2	0.0	0.0						0.42
Manganese		0.3	0.33		0.33	0.33	2.14E-05	2.14E-05						0.66
Mercury		0.0	0.02		0.02	0.02	1.46E-05	1.46E-05						0.04
Nickel		0.1	0.07		0.07	0.07	1.18E-04	1.18E-04						0.14
Selenium		0.4	0.37		0.37	0.37	1.35E-06	1.35E-06						0.75
Total HAPS	7.54	4.23	10.85	7.54	4.23	10.85	0.11	0.11	0.00	0.00	0.00			21.92

Table A-2
Emission Source HAPS Summary
Evergy Mullin Creek

Description	SMAL [tpy]	SCCT1 Natural Gas [tpy]	SCCT1 Fuel Oil [tpy]	SCCT1 (Worst-Case) [tpy]	SCCT2 Natural Gas [tpy]	SCCT2 Fuel Oil [tpy]	SCCT2 (Worst-Case) [tpy]	Fuel Gas Heater1 [tpy]	Fuel Gas Heater2 [tpy]	Emergency Diesel Generator 1 [tpy]	Emergency Diesel Generator 2 [tpy]	Diesel Firepump [tpy]	Total [tpy]	Greater than SMAL?
1,3-Butadiene	0.07	0.01	0.24	0.24	0.01	0.24	0.24					4.02E-06	0.48	Yes
2-Methylnaphthalene	10							0.00	0.00				0.00	No
3-Methylcholanthrene	None							0.00	0.00				0.00	No
7,12-Dimethylbenz(a)anthracene	None							0.00	0.00				0.00	No
Acenaphthylene	None							0.00	0.00				0.00	No
Acenaphthene	None							0.00	0.00				0.00	No
Acetaldehyde	9	0.71		0.71	0.71		0.71			0.00	0.00	0.00	1.42	No
Acrolein	0.04	0.11		0.11	0.11		0.11			3.90E-06	3.90E-06	9.51E-06	0.23	Yes
Anthracene	0.01							0.00	0.00				0.00	No
Arsenic	0.005		0.16	0.16		0.16	0.16	1.13E-05	1.13E-05				0.33	Yes
Benz(a)anthracene	0.01							0.00	0.00				0.00	No
Benzene	2	0.21	0.82	0.82	0.21	0.82	0.82	0.00	0.00	0.00	0.00	0.00	1.65	No
Benzo(a)pyrene	0.01							0.00	0.00				0.00	No
Benzo(b)fluoranthene	0.01							0.00	0.00				0.00	No
Benzo(g,h,i)perylene	None							0.00	0.00				0.00	No
Benzo(k)fluoranthene	0.01							0.00	0.00				0.00	No
Beryllium	0.008		0.00	0.00		0.00	0.00	6.76E-07	6.76E-07				0.01	Yes
Cadmium	0.01		0.07	0.07		0.07	0.07	6.19E-05	6.19E-05				0.14	Yes
Chromium	5		0.16	0.16		0.16	0.16	0.00	0.00				0.33	No
Chrysene	0.01							0.00	0.00				0.00	No
Cobalt	0.1							0.00	0.00				0.00	No
Dibenzo(a,h)anthracene	0.01							0.00	0.00				0.00	No
Dichlorobenzene	3							0.00	0.00				0.00	No
Ethylbenzene	10	0.57		0.57	0.57		0.57						1.14	No
Fluoranthene	None							0.00	0.00				0.00	No
Fluorene	None							0.00	0.00				0.00	No
Formaldehyde	2	1.90	0.63	1.90	1.90	0.63	1.90	4.22E-03	4.22E-03	3.90E-05	3.90E-05	1.21E-04	3.80	Yes
Hexane	10							0.10	0.10				0.20	No
Indeno(1,2,3-cd)pyrene	0.01							0.00	0.00				0.00	No
Lead	0.01		0.21	0.21		0.21	0.21	0.00	0.00				0.42	Yes
Manganese	0.8		0.33	0.33		0.33	0.33	2.14E-05	2.14E-05				0.66	No
Mercury	0.01		0.02	0.02		0.02	0.02	1.46E-05	1.46E-05				0.04	Yes
Naphthalene	10	0.02	0.52	0.52	0.02	0.52	0.52	0.00	0.00	0.00	0.00	0.00	1.05	No
Nickel	1		0.07	0.07		0.07	0.07	0.00	0.00				0.14	No
PAH	0.01	0.04	0.60	0.60	0.04	0.60	0.60						1.20	Yes
Phenanathrene	None							0.00	0.00				0.00	No
Propylene Oxide	5	0.52		0.52	0.52		0.52						1.03	No
Pyrene	None							0.00	0.00				0.00	No
Selenium	0.1		0.37	0.37		0.37	0.37	1.35E-06	1.35E-06				0.75	Yes
Toluene	10	2.31		2.31	2.31		2.31	0.00	0.00	0.00	0.00	0.00	4.63	No
Xylene	10	1.14		1.14	1.14		1.14			0.00	0.00	0.00	2.28	No

POM

Table A-3
Turbine Vendor Data - Natural Gas
Everyy Mullin Creek 2 SCCT

Case Name		Max Emissions Case	Peak Fired Minimum Ambient	Peak Fired Annual Average Ambient	Peak Fired Maximum Ambient	75% Load Annual Average Ambient	GTG Stack MECL Annual Average Ambient
GTG Load, (% of unrestricted output)		BASE	BASE	BASE	BASE	75%	35%
Dry Bulb Temperature, °F		26.6	-14.6	55.8	109.6	55.8	55.8
Relative Humidity, %		74.3	88.3	68.8	35.8	68.8	68.8
Evap Cooling, on/off (as applicable)		OFF	OFF	OFF	ON	OFF	OFF
Anti Icing System (Inlet Bleed Heat), on/off		OFF	ON	Off	Off	Off	ON
GTG Peak Firing, on/off		Off	Off	Off	Off	Off	Off
Site Elevation, feet above MSL		992	992	992	992	992	992
Barometric Pressure, psia		14.18	14.14	14.14	14.14	14.14	14.14
GTG Performance							
	Gas Turbine Gross Output, kW	460,309	430,888	443,294	413,757	331,371	153,950
	Gas Turbine Fuel Input, MMBtu/hr (HHV)	4,063	3,912	3,955	3,759	3,080	2,267
GTG Stack Emissions							
	CO, ppmvd @ 15% O2	2	2	2	2	2	2
	CO, lb/h	21	20	20	19	16	12
	NOx, ppmvd @ 15% O2	2.5	2.5	2.5	2.5	2.5	2.5
	NOx lb/h	44	41	41	39	33	24
	VOC (includes Formadehyde), ppmvd @ 15% O2	2	2	2	2	2	2
	VOC (includes Formadehyde), lb/h	12	11.3	11.5	10.9	9	6.6
	SO2, lb/h	6.354	6.118	6.185	5.879	4.817	3.544
	H2SO4, lb/h	11	10.537	10.653	10.124	8.295	6.104
	Total Particulate (front and back) lb/h	20	19.25	19.5	18.43	15.28	12.05
	CO2e (i.e. CO2 equivalent) (based on EPA Emission Factor) , lb/h	507800	488900	494300	469800	384900	283300

Table A-4
Turbine Vendor Data - Fuel Oil
Evergy Mullin Creek 2 SCCT

Case Name		Max Emissions Case	Minimum Ambient	Annual Average Ambient	Maximum Ambient	75% Load Annual Average Ambient	GTG Stack MECL Annual Average Ambient	GTG Stack MECL Summer Average Ambient
GTG Load, (% of unrestricted output) (Note 3)		BASE	BASE	BASE	BASE	75%	60%	60%
Dry Bulb Temperature, °F		59.0	-14.6	55.8	109.6	55.8	55.8	75.0
Relative Humidity, %		60.0	88.3	68.8	35.8	68.8	68.8	71.5
Evap Cooling, on/off (as applicable)		OFF	OFF	OFF	ON	OFF	OFF	OFF
Anti Icing System (Inlet Bleed Heat), on/off		Off	ON	Off	Off	Off	ON	ON
GTG Peak Firing, on/off		Off	Off	Off	Off	Off	Off	Off
Site Elevation, feet above MSL		992	992	992	992	992	992	992
Barometric Pressure, psia		14.18	14.14	14.14	14.14	14.14	14.14	14.14
GTG Performance								
	Gas Turbine Gross Output, kW	365,053	344,612	364,811	339,190	273,714	218,692	208,096
	Gas Turbine Fuel Input, MMBtu/hr (HHV)	3,424	3,332	3,414	3,243	2,746	2,434	2,362
GTG Stack Emissions								
	CO, ppmvd @ 15% O2	6	6	6	6	6	6	6
	CO, lb/h	56	55	56	53	43	38	37
	NOx, ppmvd @ 15% O2	5	5	5	5	5	5	5
	NOx lb/h	77	75	76	73	58	51	50
	VOC (includes Formadehyde), ppmvd @ 15% O2	6	6	6	6	6	6	6
	VOC (includes Formadehyde), lb/h	32	31.1	31.8	30.2	24.1	21.4	20.7
	SO2, lb/h	6.009	5.848	5.992	5.691	4.82	4.271	4.145
	H2SO4, lb/h	11.12	9.848	10.09	9.584	8.117	7.193	6.98
	Total Particulate (front and back) lb/h	49	46.17	48.36	45.47	37.96	34.13	33.11
	CO2e (i.e. CO2 equivalent) (based on EPA Emission Factor) , lb/h	585400	569800	583800	554500	469600	416200	403900

Table A-5
Hourly Emission Summary
Normal Operating Conditions (Natural Gas)
Every Mullin Creek

EP: **SCCT (Natural Gas)**
Maximum Natural Gas Firing Rate Turbine 4,063.0 MMBtu/hr

Pollutant	Single Turbine (lb/hr)				
	Comparison			Maximum For Averaging Period	
	Maximum ⁽¹⁾	Startup ⁽²⁾	Shutdown ⁽²⁾		
NO _x	44.00	180.53	63.33	1-Hour	180.53
				Annual	44.00
CO	21.00	859.80	269.25	1-Hour	859.80
				Annual	21.00
VOC	12.00	435.60	121.00	1-Hour	435.60
				Annual	12.00
SO ₂	6.35	--	--	1-Hour	6.35
				Annual	
Particulates (FH&BH)	20.00	--	--	1-Hour	20.00
				Annual	
H ₂ SO ₄	11.00	--	--	1-Hour	11.00
				Annual	
CO ₂ ⁽³⁾	475273.80	--	--	1-Hour	475,273.80
				Annual	
CH ₄ ⁽³⁾	8.96	--	--	1-Hour	8.96
				Annual	
N ₂ O ⁽³⁾	0.90	--	--	1-Hour	0.90
				Annual	
CO ₂ e ⁽⁴⁾ (Total)	475761.97	--	--	1-Hour	475,761.97
				Annual	

(1) Based on 26.6 °F and 74.3 RH

(2) Only emissions of NO_x, CO, and VOC are shown in the startup/shutdown columns as emissions of other pollutants are expected to be less than during normal operation.

(3) CO₂ GHG factors based on Table C-1 of 40 CFR 98 Mandatory Greenhouse Gas Reporting. CH₄ and N₂O GHG factors based on Table C-2 of 40 CFR 98 Mandatory Greenhouse Gas Reporting.

(4) Global Warming Potential factors based on Table A-1 of 40 CFR 98 Mandatory Greenhouse Gas Reporting. (Updated based on 1/1/2025 Revision)

Startup/Shutdown Emissions for Mitsubishi 501JAC - Natural Gas

(1) Example calculation: $\text{NOx lb/hr Startup} = \text{NOx lb per Startup Event} + [\text{Normal NOx Emissions (lb/hr)} * 60 \text{ (mins)} - \text{Startup Time (mins)} / 60 \text{ (mins)}]$
 $\text{NOx lb/hr Startup} = 160 \text{ (lb per Startup Event)} + [44 \text{ (lb/hr)} * 60 \text{ (mins)} - 32 \text{ (mins)} / 60 \text{ (mins)}] = 181 \text{ lb/hr}$

Table A-7
Annual Emission Summary
Natural Gas Operation
Evergy Mullin Creek

EP: SCCT (Natural Gas)
Annual Operating Hours (Normal)⁽¹⁾: 8760.0
Annual Startup/Shutdown Hours⁽¹⁾: 345.3

Pollutant	Annual Emissions from Normal Operation	Estimated Annual Emissions From SS Operations ^(1,2)	Combined Routine/MSS Annual Emissions
	tons/yr	tons/yr	tons/yr
NO _x	192.72	51.24	243.96
CO	91.98	308.00	399.98
VOC	52.56	151.20	203.76
SO ₂	27.83	---	27.83
PM/PM ₁₀ /PM _{2.5}	91.05	---	91.05
H ₂ SO ₄	48.18	---	48.18
CO ₂	2,081,699.23	---	2,081,699.23
CH ₄ ⁽³⁾	39.23	---	39.23
N ₂ O ⁽³⁾	3.92	---	3.92
CO ₂ e ⁽⁴⁾	2,083,837.42	---	2,083,837.42

Notes:

- (1) The annual hours used in these calculations are estimates for purposes of calculating annual emissions. They are not represented as being the maximum operating hours for each of the three operating modes.
- (2) Only emissions of NO_x, CO, and VOC are shown in the startup/shutdown columns as emissions of other pollutants are expected to be less than during normal operation.
- (3) CO₂ GHG factors based on Table C-1 of 40 CFR 98 Mandatory Greenhouse Gas Reporting. CH₄ and N₂O GHG factors based on Table C-2 of 40 CFR 98 Mandatory Greenhouse Gas Reporting.
- (4) Global Warming Potential factors based on Table A-1 of 40 CFR 98 Mandatory Greenhouse Gas Reporting.
- (Updated based on 1/1/2025 Revision)

Table A-8
Hourly Emission Summary
Normal Operating Conditions (Fuel Oil)
Every Mullin Creek

EP: SCCT (Fuel Oil)

Maximum Fuel Oil Firing Rate Turbine

3,424

MMBtu/hr

Pollutant	Single Turbine (lb/hr)				
	Comparison			Maximum For Averaging Period	
	Maximum ⁽¹⁾	Startup ⁽²⁾	Shutdown ⁽²⁾		
NO _x	77.00	254.12	180.05	1-Hour	254.12
				Annual	77.00
CO	56.00	4810.27	3636.40	1-Hour	4,810.27
				Annual	56.00
VOC ⁽¹⁾	32.00	1705.87	900.80	1-Hour	1,705.87
				Annual	32.00
SO ₂ ⁽³⁾	6.01	--	--	1-Hour	6.01
				Annual	
Particulates ^(2,4) (FH&BH)	49.00	--	--	1-Hour	49.00
				Annual	
H ₂ SO ₄	11.12	--	--	1-Hour	11.12
				Annual	
CO ₂ ⁽³⁾	558290.79	--	--	1-Hour	558,290.79
				Annual	
CH ₄ ⁽³⁾	22.65	--	--	1-Hour	22.65
				Annual	
N ₂ O ⁽³⁾	4.53	--	--	1-Hour	4.53
				Annual	
CO ₂ e ⁽⁴⁾ (Total)	560125.09	--	--	1-Hour	560,125.09
				Annual	

(1) Based on 26.6 °F and 74.3 RH

(2) Only emissions of NO_x, CO, and VOC are shown in the startup/shutdown columns as emissions of other pollutants are expected to be less than during normal operation.

(3) CO₂ GHG factors based on Table C-1 of 40 CFR 98 Mandatory Greenhouse Gas Reporting. CH₄ and N₂O GHG factors based on Table C-2 of 40 CFR 98 Mandatory Greenhouse Gas Reporting.

(4) Global Warming Potential factors based on Table A-1 of 40 CFR 98 Mandatory Greenhouse Gas Reporting. (Updated based on 1/1/2025 Revision)

Table A-9
Hourly Emission Summary
Startup/Shutdown Operating Conditions (Fuel Oil)
Evergy Mullin Creek

Startup/Shutdown Emissions for Mitsubishi 501JAC - Fuel Oil

Type	Duration	Events	MSS	Heat Input	NOx			CO			VOC		
	Min	per year	hrs/yr	MMBtu	lb/event	lb/hr ⁽¹⁾	tons/yr	lb/event	lb/hr ⁽¹⁾	tons/yr	lb/event	lb/hr ⁽¹⁾	tons/yr
Maximum Startup	60	--	--	--	--	293.9	--	--	5,877.6	--	--	2,088.8	--
Average Startup	49	560	457.3	1,300	240	254	67.2	4,800	4,810	1,344.0	1,700	1,706	476
Maximum Shutdown	60	--	--	--	--	293.9	--	--	5,877.6	--	--	2,088.8	--
Average Shutdown	21	560	196	600	130	180	36.4	3,600	3,636	1,008	880	901	246.4
Total	--		653.3				103.6			2,352.0			722.4

(1) Example calculation: NOx lb/hr Startup = NOx lb per Startup Event + [Normal NOx Emissions (lb/hr) * [60 (mins) - Startup Time (mins) / 60 (mins)]]
NOx lb/hr Startup = 240 (lb per Startup Event) + [77 (lb/hr) * [60 (mins) - 49 (mins) / 60 (mins)]] = 254 lb/hr

Table A-10
HAPS SCCT Emission Calculations

Natural Gas

EP: **SCCT (Natural Gas)**
Maximum Natural Gas Firing Total 4,063 MMBtu/hr

Pollutant	Emission Factor ⁽¹⁾ (lb/MMBtu)	Maximum Hourly Emission Rate ⁽³⁾⁽⁵⁾ (lb/hr)	Annual Emission Rate ⁽⁴⁾⁽⁵⁾ (tpy)
1,3-Butadiene	4.3E-07	0.002	0.01
Acetaldehyde	4.0E-05	0.163	0.712
Acrolein	6.4E-06	0.026	0.11
Benzene	1.2E-05	0.049	0.21
Ethylbenzene	3.2E-05	0.130	0.57
Formaldehyde	1.1E-04	0.433	1.90
Naphthalene	1.3E-06	0.005	0.02
PAH	2.2E-06	0.009	0.04
Propylene Oxide	2.9E-05	0.118	0.52
Toluene	1.3E-04	0.528	2.31
Xylene	6.4E-05	0.260	1.14
Total HAPs		1.72	7.54

Notes:

- (1) Based on AP-42, Table 3.1-3, emission factors for HAPs from natural gas-fired stationary turbines
 (2) Oxidation Catalyst Formaldehyde controlled is assumed at 85% based on 2001 EPA Memo
 (3) Based on maximum hourly heat input and emission factor or vendor data
 (4) Assumes 8,760 hours of operation a year.
 (5) Based on 26.6 °F and 74.3 RH

Sample Calculations:

Maximum Hourly Emission Rate from Natural Gas Firing (lb/hr) = Emission Factor (lb/MMBtu) * Maximum Hourly Heat Input (MMBtu/hr)

1,3-Butadiene (lb/hr) = 4.3E-7 (lb/MMBtu) * 4,063 (MMBtu/hr) = 0.002 (lb/hr)

Fuel Oil

EP: SCCT (Fuel Oil)
Maximum Fuel Oil Firing Total 3,424 MMBtu/hr

Pollutant	Emission Factor ⁽¹⁾ (lb/MMBtu)	Maximum Hourly Emission Rate ⁽³⁾⁽⁵⁾ (lb/hr)	Annual Emission Rate ⁽⁴⁾⁽⁵⁾ (tpy)
1,3-Butadiene	1.6E-05	0.055	0.24
Benzene	5.5E-05	0.188	0.82
Formaldehyde	4.2E-05	0.144	0.63
Naphthalene	3.5E-05	0.120	0.52
PAH	4.0E-05	0.137	0.60
Arsenic	1.1E-05	0.038	0.16
Beryllium	3.1E-07	0.001	0.00
Cadmium	4.8E-06	0.016	0.07
Chromium	1.1E-05	0.038	0.16
Lead	1.4E-05	0.048	0.21
Manganese	2.2E-05	0.076	0.33
Mercury	1.2E-06	0.004	0.02
Nickel	4.6E-06	0.016	0.07
Selenium	2.5E-05	0.086	0.37
Total HAPs		0.97	4.23

Notes:

- (1) Based on AP-42, Table 3.1-4, emission factors for HAPs from distillate oil-fired stationary turbines
- (2) Oxidation Catalyst Formaldehyde controlled is assumed at 85% based on 2001 EPA Memo
- (3) Based on maximum hourly heat input and emission factor or vendor data
- (4) Assumes 8,760 hours of operation a year.
- (5) Based on 26.6 °F and 74.3 RH
- (6) Manganese emission factor based on 0.0031 lb/1000 gallon oil California "AB 2588 Combustion Emission Factors".

Sample Calculations:

Maximum Hourly Emission Rate from Natural Gas Firing (lb/hr) = Emission Factor (lb/MMBtu) * Maximum Hourly Heat Input (MMBtu/hr)
 1,3-Butadiene (lb/hr) = 1.6E-5 (lb/MMBtu) * 3424 (MMBtu/hr) = 0.055 (lb/hr)

Table A-11
Annual Emission Summary
Fuel Oil Operation
Evergy Mullin Creek

EP: SCCT (Fuel Oil)
Annual Operating Hours (Normal)⁽¹⁾: 8760.0
Startup/Shutdown^(1,2): 653.3

Pollutant	Annual Emissions from Normal Operation	Estimated Annual Emissions From SS Operations ^(1,2)	Combined Routine/MSS Annual Emissions
	tons/yr	tons/yr	tons/yr
NO _x	337.26	103.60	440.86
CO	245.28	2352.00	2597.28
VOC	140.16	722.40	862.56
SO ₂	26.32	---	26.32
PM/PM ₁₀ /PM _{2.5}	214.62	---	214.62
H ₂ SO ₄	48.71	---	48.71
CO ₂	2445313.65	---	2445313.65
CH ₄ ⁽³⁾	99.19	---	99.19
N ₂ O ⁽³⁾	19.84	---	19.84
CO ₂ e ⁽⁴⁾	2453347.87	---	2453347.87

Notes:

- (1) The annual hours used in these calculations are estimates for purposes of calculating annual emissions. They are not represented as being the maximum operating hours for each of the three operating modes.
- (2) Only emissions of NO_x, CO, and VOC are shown in the startup/shutdown columns as emissions of other pollutants are expected to be less than during normal operation.
- (3) CO₂ GHG factors based on Table C-1 of 40 CFR 98 Mandatory Greenhouse Gas Reporting. CH₄ and N₂O GHG factors based on Table C-2 of 40 CFR 98 Mandatory Greenhouse Gas Reporting.
- (4) Global Warming Potential factors based on Table A-1 of 40 CFR 98 Mandatory Greenhouse Gas Reporting. (Updated based on 1/1/2025 Revision)

Table A-12
Fuel Gas Heater Emission Calculations
Evergy Mullin Creek

EP: FUEL GAS HEAT

Assumptions:

Maximum Natural Gas Firing Rate	13.11	MMBtu/hr
Maximum Annual Firing Rate	114,844	MMBtu/yr
Maximum Natural Gas Hourly Firing Rate	12,853	scf/hr
Maximum Natural Gas Annual Firing Rate	112,591,765	scf/yr
Hours of Operation	8,760	hours/yr
Natural Gas Annual Average Sulfur Content	0.5	gr/100scf
Heating Value of Natural Gas	1,020	Btu/scf

Products of Combustion Calculations:

Pollutant	Emission Factor ⁽¹⁾	Units	Max Hourly Emission Rate lb/hr	Max. Annual Emission Rate ton/yr
NO _x ⁽¹⁾	0.0364	lb/MMBtu	0.477	2.09
CO ⁽¹⁾	0.0370	lb/MMBtu	0.485	2.12
VOC ⁽¹⁾	0.0054	lb/MMBtu	0.071	0.31
PM/PM ₁₀ /PM _{2.5} ⁽¹⁾	0.0054	lb/MMBtu	0.071	0.31
SO ₂ ⁽²⁾			0.018	0.08
CO ₂	116.98	lb/MMBtu	1533.56	6716.98
CH ₄	0.0022	lb/MMBtu	0.029	0.13
N ₂ O	0.0002	lb/MMBtu	0.003	0.01
CO ₂ e ⁽³⁾	--	--	1535.14	6723.91

Notes:

(1) Based on data provided by OE

(2) 40 CFR Part 75

(3) CO₂e calculated based on Global Warming Potential factors from Table A-1 of 40 CFR 98 Mandatory Greenhouse Gas Reporting.

Sample Calculations:

$$\text{NO}_x \text{ lb/hr} = 0.0364 \text{ lb/MMBtu} * 13.11 \text{ MMBtu/hr} = 0.48 \text{ lb/hr}$$

$$\text{NO}_x \text{ tpy} = 0.48 \text{ lb/hr} * 8,760 \text{ hr/yr} / 2,000 \text{ lb/ton} = 2.09 \text{ tpy}$$

$$\text{SO}_2 \text{ lb/hr} = 12,853 \text{ (scf/hr)} * 0.5 \text{ (gr)} / 100 \text{ (scf)} * 1 \text{ (lb)} / 7000 \text{ (gr)} * [64.064 \text{ (MW SO}_2\text{)} / 32.065 \text{ (MW S)}] = 0.037 \text{ (lb/hr)}$$

$$\text{SO}_2 \text{ tpy} = 112,591,765 \text{ (scf/yr)} * 0.5 \text{ (gr)} / 100 \text{ (scf)} * 1 \text{ (lb)} / 7000 \text{ (gr)} * [64.064 \text{ (MW SO}_2\text{)} / 32.065 \text{ (MW S)}] / 2000 \text{ (lb/ton)} = 0.08 \text{ (tpy)}$$

HAP Calculations:

Pollutant	Emission Factor ⁽¹⁾ (lb/10 ⁶ scf)	Max. Hourly Emission Rate (lb/hr)	Max. Annual Emission Rate ⁽²⁾ (tpy)
2-Methylnaphthalene	2.4E-05	3.08E-07	1.35E-06
3-Methylcholanthrene	1.8E-06	2.31E-08	1.01E-07
7,12-Dimethylbenz(a)anthracene	1.6E-05	2.06E-07	9.01E-07
Acenaphthene	1.8E-06	2.31E-08	1.01E-07
Acenaphthylene	1.8E-06	2.31E-08	1.01E-07
Anthracene	2.4E-06	3.08E-08	1.35E-07
Benz(a)anthracene	1.8E-06	2.31E-08	1.01E-07
Benzene	2.1E-03	2.70E-05	1.18E-04
Benzo(a)pyrene	1.2E-06	1.54E-08	6.76E-08
Benzo(b)fluoranthene	1.8E-06	2.31E-08	1.01E-07
Benzo(g,h,i)perylene	1.2E-06	1.54E-08	6.76E-08
Benzo(k)fluoranthene	1.8E-06	2.31E-08	1.01E-07
Chrysene	1.8E-06	2.31E-08	1.01E-07
Dibenzo(a,h)anthracene	1.2E-06	1.54E-08	6.76E-08
Dichlorobenzene	1.2E-03	1.54E-05	6.76E-05
Fluoranthene	3.0E-06	3.86E-08	1.69E-07
Fluorene	2.8E-06	3.60E-08	1.58E-07
Formaldehyde	7.5E-02	9.64E-04	4.22E-03
Hexane	1.8E+00	2.31E-02	1.01E-01
Indeno(1,2,3-cd)pyrene	1.8E-06	2.31E-08	1.01E-07
Naphthalene	6.1E-04	7.84E-06	3.43E-05
Phenanthrene	1.7E-05	2.19E-07	9.57E-07
Pyrene	5.0E-06	6.43E-08	2.81E-07
Toluene	3.4E-03	4.37E-05	1.91E-04
Arsenic	2.0E-04	2.57E-06	1.13E-05
Beryllium	1.2E-05	1.54E-07	6.76E-07
Cadmium	1.1E-03	1.41E-05	6.19E-05
Chromium	1.4E-03	1.80E-05	7.88E-05
Cobalt	8.4E-05	1.08E-06	4.73E-06
Lead	5.0E-04	6.43E-06	2.81E-05
Manganese	3.8E-04	4.88E-06	2.14E-05
Mercury	2.6E-04	3.34E-06	1.46E-05
Nickel	2.1E-03	2.70E-05	1.18E-04
Selenium	2.4E-05	3.08E-07	1.35E-06
Total HAPs		0.02	0.11

Notes:

- (1) Based on AP-42, Tables 1.4-3 and 1.4-4, emission factors for HAPs from natural gas combustion.
(2) Assumes 8,760 annual hours of operation.

HAP Sample Calculations:

Max. Hourly Emission Rate (lb/hr) = Emission Factor (lb/10⁶ scf) x Hourly Fuel Gas Consumption (scf/hr)
Max. Annual Emission Rate (tpy) = Emission Factor (lb/10⁶ scf) x Annual Fuel Gas Consumption (scf/yr) / 2,000 lb/ton

Table A-13
Diesel-Fired Emergency Generator - Emission Calculations
Evergy Mullin Creek

EP:	EMERGEN	
<u>Assumptions:</u>		
Max Daily Operating Schedule	1	hours/day
Annual Operating Schedule	100	hours/year
Power Rating	1,340	bhp
Power Rating	1,000	kW
Fuel Consumption	71.67	gal/hr
Density of No. 2 Fuel Oil:	7.67	lb/gal
Max Fuel Consumption	549.9	lb fuel/hr
Heating Value of No. 2 Fuel Oil:	0.138	MMBtu/gal
Max Heat Input:	9.89	MMBtu/hr
Maximum Sulfur Content (S)	15.00	ppmw

Products of Combustion Calculations:

Pollutant	Emission Factor ⁽¹⁾	Units	Max. Hourly Emission Rate lb/hr	Max. Annual Emission Rate ton/yr
NO _x ⁽¹⁾	8.30	g/kW-hr	18.30	0.91
CO ⁽¹⁾	3.50	g/kW-hr	7.72	0.39
VOC ⁽¹⁾	6.40	g/kW-hr	14.11	0.71
PM/PM ₁₀ ⁽¹⁾	0.300	g/kW-hr	0.66	0.03
SO ₂ ⁽²⁾	Mass Balance		0.0165	0.0008
CO ₂	73.96	kg/MMBtu	1609.22	80.46
CH ₄	3.0E-03	kg/MMBtu	0.065	0.04
N ₂ O	6.0E-04	kg/MMBtu	0.013	0.01
CO ₂ e ⁽³⁾			1614.744	80.74

Notes:

- (1) Engine will be certified to meet EPA Tier 2 standards, additional margin has been added to values to address variability in Tier standards.
(2) Calculated based on maximum fuel sulfur content and max fuel consumption.
(3) CO₂e calculated based on Global Warming Potential factors from Table A-1 of 40 CFR 98 Mandatory Greenhouse Gas Reporting.

Sample Calculations:

$$\begin{aligned} \text{NO}_x \text{ lb/hr} &= 8.3 \text{ g/kW-hr} * 1000 \text{ kW} / 453.6 \text{ g/lb} = 18.30 \text{ lb/hr} \\ \text{NO}_x \text{ tpy} &= 18.30 \text{ lb/hr} * 100 \text{ hr/yr} / 2,000 \text{ lb/ton} = 0.91 \text{ tpy} \\ \text{SO}_2 \text{ lb/hr} &= 549.9 \text{ (lb fuel/hr)} * 15 \text{ (ppmw)} / 1 \text{ (ppm)} / 1000000 \text{ (ppm)} * [64.064 \text{ (MW SO}_2\text{)}/32.065 \text{ (MW S)}] = 0.0165 \text{ (lb/hr)} \\ \text{SO}_2 \text{ tpy} &= 0.0165 \text{ (lb/hr)} * 100 \text{ (hr/year)} / 2000 \text{ (lb/ton)} = 0.0008 \text{ (tpy)} \end{aligned}$$

HAP Calculations:

Pollutant	Emission Factor ⁽¹⁾ (lb/MMBtu)	Max. Hourly Emission Rate (lb/hr)	Max. Annual Emission Rate ⁽²⁾ (tpy)
Benzene	7.76E-04	0.008	3.84E-04
Toluene	2.81E-04	0.003	1.39E-04
Xylene	1.93E-04	0.002	9.54E-05
Formaldehyde	7.89E-05	0.001	3.90E-05
Acetaldehyde	2.52E-05	0.000	1.25E-05
Acrolein	7.88E-06	0.000	3.90E-06
Naphthalene	1.30E-04	0.001	6.43E-05
Total HAPs		0.01	0.001

Notes:

- (1) Based on AP-42, Table 3.4-3 and Table 3.4-4, emission factors for HAPs from large uncontrolled diesel engines
(2) Assumes 100 hours/year

Sample Calculations:

$$\begin{aligned} \text{Max. Hourly Emission Rate (lb/hr)} &= \text{Emission Factor (lb/MMBtu)} * \text{Max. Heat Input (MMBtu/hr)} \\ \text{Max. Annual Emission Rate (tpy)} &= \text{Max. Hourly Emission Rate (lb/hr)} * 8,760 \text{ hr/yr} / 2,000 \text{ lb/ton} \end{aligned}$$

Table A-14
Diesel-Fired Fire Pump - Emission Calculations
Evergy Mullin Creek

EP: FIREPUMP

Assumptions:

Max Daily Operating Schedule	1	hours/day
Annual Operating Schedule	100	hours/year
Power Rating		bhp
Power Rating	321	kW
Fuel Consumption	14.90	gal/hr
Density of No. 2 Fuel Oil:	7.67	lb/gal
Max Fuel Consumption	114.3	lb fuel/hr
Heating Value of No. 2 Fuel Oil:	0.138	MMBtu/gal
Max Heat Input:	2.06	MMBtu/hr
Maximum Sulfur Content (S)	15.00	ppmw

Products of Combustion Calculations:

Pollutant	Emission Factor	Units	Max Hourly Emission Rate lb/hr	Max. Annual Emission Rate ton/yr
NO _x ⁽¹⁾	4.00	g/kW-hr	2.83	0.14
CO ⁽¹⁾	3.50	g/kW-hr	2.48	0.12
VOC ⁽¹⁾	4.0	g/kW-hr	2.83	0.14
PM/PM ₁₀ ⁽¹⁾	0.2	g/kW-hr	0.11	0.01
SO ₂ ⁽²⁾	Mass Balance		0.0034	0.0002
CO ₂	73.96	kg/MMBtu	334.57	16.73
CH ₄	3.0E-03	kg/MMBtu	0.014	0.001
N ₂ O	6.0E-04	kg/MMBtu	0.003	0.000
CO ₂ e ⁽³⁾			334.908	16.75

Notes:

- (1) Engine will be certified to meet EPA Tier 3 standards, additional margin has been added to values to address variability in Tier standards.
(2) Calculated based on maximum fuel sulfur content and max fuel consumption.
(3) CO₂e calculated based on Global Warming Potential factors from Table A-1 of 40 CFR 98 Mandatory Greenhouse Gas Reporting.

Sample Calculations:

$$\begin{aligned} \text{NO}_x \text{ lb/hr} &= 4 \text{ g/kW-hr} * 321 \text{ kW} / 453.6 \text{ g/lb} = 2.83 \text{ lb/hr} \\ \text{NO}_x \text{ tpy} &= 2.83 \text{ lb/hr} * 100 \text{ hr/yr} / 2,000 \text{ lb/ton} = 0.14 \text{ tpy} \\ \text{SO}_2 \text{ lb/hr} &= 114.3 \text{ (lb fuel/hr)} * 15 \text{ (ppmw)} / 1 \text{ (ppm)} / 1000000 \text{ (ppm)} * [64.064 \text{ (MW SO}_2\text{)} / 32.065 \text{ (MW S)}] = 0.003 \text{ (lb/hr)} \\ \text{SO}_2 \text{ tpy} &= 0.003 \text{ (lb/hr)} * 100 \text{ (hr/year)} / 2000 \text{ (lb/ton)} = 0.0002 \text{ (tpy)} \end{aligned}$$

HAP Calculations:

Pollutant	Emission Factor ⁽¹⁾ (lb/MMBtu)	Max. Hourly Emission Rate (lb/hr)	Max. Annual Emission Rate ⁽²⁾ (tpy)
Benzene	9.33E-04	1.92E-03	9.59E-05
Toluene	4.09E-04	8.41E-04	4.20E-05
Xylene	2.85E-04	5.86E-04	2.93E-05
1,3-Butadiene	3.91E-05	8.04E-05	4.02E-06
Formaldehyde	1.18E-03	2.43E-03	1.21E-04
Acetaldehyde	7.67E-04	1.58E-03	7.89E-05
Acrolein	9.25E-05	1.90E-04	9.51E-06
Naphthalene	8.48E-05	1.74E-04	8.72E-06
Total HAPs		0.01	3.90E-04

Notes:

- (1) Based on AP-42, Table 3.3-2, emission factors for HAPs from uncontrolled diesel engines
(2) Assumes 100 hours/year

Sample Calculations:

$$\begin{aligned} \text{Max. Hourly Emission Rate (lb/hr)} &= \text{Emission Factor (lb/MMBtu)} * \text{Max. Heat Input (MMBtu/hr)} \\ \text{Max. Annual Emission Rate (tpy)} &= \text{Max. Hourly Emission Rate (lb/hr)} * 8,760 \text{ hr/yr} / 2,000 \text{ lb/ton} \end{aligned}$$

Table A-15
SF6 Emission Calculations
Every Mullin Creek

EP: SF6

GHG Emissions Contribution From Electrical Equipment Insulated with SF6:

EP	Insulated SF6 Circuit Breaker Capacity	Annual Leak Rate		Annual CO2e Emission Rate
	(lb)	(weight %)	(tpy)	(tpy)
SF6	2240	0.50	0.006	131.6

Constant:

Variable	Value	Reference
SF6 Global Warming Potential	23,500	Table A-1 of 40 CFR 98 Mandatory Greenhouse Gas Reporting

Table A-16
Storage Tank Emissions Summary
Evergy Mullin Creek

Emission Point	Description	Tank Contents	Fixed Roof Type	Pollutant	Annual Emission Rate⁽¹⁾ (tpy)
FUELTK1	SCCTs Diesel Tank 1	Diesel	HFR	VOC	0.71
FUELTK2	SCCTs Diesel Tank 2	Diesel	HFR	VOC	0.71
EMERGENTK1	Emergency Generator Engine Diesel Tank	Diesel	HFR	VOC	0.0006
EMERGENTK2	Emergency Generator Engine Diesel Tank	Diesel	HFR	VOC	0.0006
FIREPUMPTK	Emergency Firepump Engine Diesel Tank	Diesel	HFR	VOC	0.0003
Total VOC Emissions from Storage Tanks					1.42

Notes:

(1) All emission calculations from EPA Tanks 5.1 using AP-42 default parameters.

APPENDIX B MDNR AIR PERMIT APPLICATION FORMS



MISSOURI DEPARTMENT OF NATURAL RESOURCES
AIR POLLUTION CONTROL PROGRAM
APPLICATION FOR AUTHORITY TO CONSTRUCT

APCP USE ONLY

CHECK NO.:	CHECK RECEIVED:
CHECK AMOUNT: \$	CHECK DATE:
PROJECT NUMBER:	

Submit applications with the filing fee that is appropriate for the project: no filing fee for an amendment; **\$250** for Sections (4), (5) and (10); **\$5,000** for Sections (7), (8) and (9); and **\$2,500** for PAL renewal. The department will assess a **\$75**-per-hour processing fee at the end of the review, unless no permit is required. (PLEASE PRINT OR TYPE)

1. INSTALLATION NAME Mullin Creek Generating Station			
2. INSTALLATION STREET ADDRESS Near 240th St. and US HWY 71	CITY Barnard	STATE MO	ZIP CODE 64423
3. INSTALLATION MAILING ADDRESS 818 S. Kansas Ave.	CITY Topeka	STATE KS	ZIP CODE 66612
4. COUNTY Nodaway	5. SECTION, TOWNSHIP, RANGE OR GPS LOCATION Whitecloud Township		
6. FIPS COUNTY ID NUMBER	7. PLANT ID NUMBER		
8. FINAL PRODUCT / PRINCIPAL ACTIVITY Electricity Generation	9. SIC CODE 4911		
10. OWNER/OPERATOR NAME (IF DIFFERENT) Evergy, Inc			
11. OWNER/OPERATOR MAILING ADDRESS 818 S. Kansas Ave.	CITY Topeka	STATE KS	ZIP CODE 66612
12. CONTACT PERSON Stephanie Hirner	CONTACT PERSON'S TITLE Sr. Manger, Air Programs		
13. CONTACT PERSON'S MAILING ADDRESS 818 S. Kansas Ave.	CITY Topeka	STATE KS	ZIP CODE 66612
14. CONTACT PERSON'S TELEPHONE NUMBER WITH AREA CODE 785-508-2445	15. CONTACT PERSON'S EMAIL ADDRESS stephanie.hirner@evergy.com		
16. UNIFIED REVIEW Yes ☒ No ☐			
17. THIS APPLICATION IS FOR (CHECK THE APPROPRIATE BOX) ☒ New Installation ☐ Modification or Addition to an Existing Installation ☐ Temporary / Pilot Plant ☐ Amendment to Existing Permit: Permit No. _____			
18. PROJECTED DATE TO COMMENCE CONSTRUCTION 2027	19. PROJECTED DATE OF OPERATION STARTUP 2030		

APPLICANT'S CERTIFICATION STATEMENT

I certify I have personally examined and am familiar with the information in this application and believe the information submitted is true, accurate and complete. I am aware that making a false statement or misrepresentation in this application is grounds for denying or revoking the construction permit. I may also be guilty of a misdemeanor and upon conviction, may be punished by fine or imprisonment.

20. SIGNATURE OF RESPONSIBLE OFFICIAL	
21. TYPE OR PRINT NAME OF RESPONSIBLE OFFICIAL Daniel R. Wilkus	22. DATE
23. OFFICIAL TITLE OF RESPONSIBLE OFFICIAL Director, Environmental Services	24. RESPONSIBLE OFFICIAL'S TELEPHONE NUMBER WITH AREA CODE 785-508-2429

25. PROJECT DESCRIPTION AND NARRATIVE

See Application Text.

Form 1.2 Summary of Emission Units Affected by this Application (duplicate this form as needed)

FIPS COUNTY NO. (B.)

Mullin Creek Energy Center

MO 780-1323 (06-24)

Emission Information for Air Construction Permit Application							
Form 2.0 Emission Unit Information (duplicate this form as needed)							
INSTALLATION NAME (A.) Mullin Creek Generating Station			FIPS COUNTY NO. (B.)	PLANT NO. (C.)			
UNIT IDENTIFICATION							
EMISSION UNIT NO. (D.) SCCT 1		EMISSION UNIT DESCRIPTION (E.) SIMPLE CYCLE COMBUSTION TURBINE 1					
SOURCE CLASSIFICATION CODE (SCC) (F.) 2-01-002-01			MAKE (G.) Mitsubishi	MODEL (H.) M501JAC	YEAR (I.) TBD		
RELEASE PARAMETERS							
EMISSION RELEASE CHARACTERISTICS (CHECK THE APPROPRIATE BOX) (J.)							
☒ STACK ☐ VENT ☐ FUGITIVE							
STACK OR VENT NO. (K.) SCCT 1		HEIGHT (FT) (L.) 185		DIAMETER (FT) OR WIDTH X LENGTH (IN) (M.) 36.3			
TEMPERATURE (F) (N.) 799		VELOCITY (FT/MIN) (O.) 91.9		FLOW RATE (STANDARD CUBIC FT/MIN) (P.) 5,716,333			
OPERATING RATE/SCHEDULE							
EXPECTED ANNUAL THROUGHPUT (Q.) 35,591,880		UNITS (R.) MMBtu	MAXIMUM HOURLY DESIGN RATE (S.) 4,063		UNITS/HR (T.) MMBtu		
EXPECTED HOURS/DAY (U.) 24		EXPECTED DAYS/WEEK 7		EXPECTED WEEKS/YEAR 52			
AIR POLLUTION CAPTURE AND CONTROL DEVICES							
DEVICE NO. (V.)	CAPTURE DEVICE DESCRIPTION (W.)	CAPTURE DEVICE CAPTURE EFFICIENCY % (X.)					
		PM ₁₀	SO _x	NO _x	VOC	CO	HAPs
	Selective Catalytic Reduction (SCR)						
	See Application						
DEVICE NO. (Y.)	CONTROL DEVICE DESCRIPTION (Z.)	CONTROL DEVICE DESTRUCTION/REMOVAL EFFICIENCY % (AA.)					
		PM ₁₀	SO _x	NO _x	VOC	CO	HAPs
	Catalytic Oxidation Unit (OxCat)						
	See Application						
CALCULATION SECTION (BB.)							
POLLUTANT	EMISSION FACTOR	EMISSION FACTOR UNITS	OVERALL CONTROL EFFICIENCY	EMISSION RATE (LB/HR)	POTENTIAL EMISSIONS (TONS/YR)		
See Application							

Emission Information for Air Construction Permit Application								
Form 2.1 Fuel Combustion Information (duplicate this form as needed)								
INSTALLATION NAME (A.) Mullin Creek Generating Station		FIPS COUNTY NO. (B.)		PLANT NO. (C.)				
COMBUSTION EQUIPMENT INFORMATION								
EMISSION UNIT NO. (D.) SCCT1		SCC (E.) 2-01-002-01						
(F.) EQUIPMENT DESCRIPTION (MAKE/MODEL) Mitsubishi M501JAC		(G.) YEAR PUT IN SERVICE TBD		(H.) MAXIMUM DESIGN RATE (MILLION BTU/HR) 4,063				
FUEL INFORMATION								
(I.) FUEL TYPE <table style="width:100%; border: none;"> <tr> <td style="width: 25%; vertical-align: top;"> Oil ☒ Distillate (Fuel Oil 1-4) ☐ Residual Fuel Oil (5-6) </td> <td style="width: 25%; vertical-align: top;"> Gas ☒ Natural Gas ☐ LPG/Propane </td> <td style="width: 25%; vertical-align: top;"> Coal ☐ Anthracite ☐ Bituminous ☐ Lignite </td> <td style="width: 25%; vertical-align: top;"> Other ☐ Refuse ☐ Trade Wastes Waste Oil ☐ Other (specify) </td> </tr> </table>					Oil ☒ Distillate (Fuel Oil 1-4) ☐ Residual Fuel Oil (5-6)	Gas ☒ Natural Gas ☐ LPG/Propane	Coal ☐ Anthracite ☐ Bituminous ☐ Lignite	Other ☐ Refuse ☐ Trade Wastes Waste Oil ☐ Other (specify)
Oil ☒ Distillate (Fuel Oil 1-4) ☐ Residual Fuel Oil (5-6)	Gas ☒ Natural Gas ☐ LPG/Propane	Coal ☐ Anthracite ☐ Bituminous ☐ Lignite	Other ☐ Refuse ☐ Trade Wastes Waste Oil ☐ Other (specify)					
FUEL (J.)	EXPECTED ANNUAL THROUGHPUT (K.)	UNITS (L.)	% SULFUR BY WEIGHT (M.)	% ASH BY WEIGHT (N.)				
See Application								
FUEL TOTALS AND WEIGHTED AVERAGES								
Comments:								

Emission Information for Air Construction Permit Application Form 2.0 Emission Unit Information (duplicate this form as needed)							
INSTALLATION NAME (A.) Mullin Creek Generating Station			FIPS COUNTY NO. (B.)		PLANT NO. (C.)		
UNIT IDENTIFICATION							
EMISSION UNIT NO. (D.) SCCT 2		EMISSION UNIT DESCRIPTION (E.) SIMPLE CYCLE COMBUSTION TURBINE 2					
SOURCE CLASSIFICATION CODE (SCC) (F.) 2-01-002-01			MAKE (G.) Mitsubishi	MODEL (H.) M501JAC	YEAR (I.) TBD		
RELEASE PARAMETERS							
EMISSION RELEASE CHARACTERISTICS (CHECK THE APPROPRIATE BOX) (J.)							
☒ STACK ☐ VENT ☐ FUGITIVE							
STACK OR VENT NO. (K.) SCCT 2		HEIGHT (FT) (L.) 185		DIAMETER (FT) OR WIDTH X LENGTH (IN) (M.) 36.3			
TEMPERATURE (F) (N.) 799		VELOCITY (FT/MIN) (O.) 91.9		FLOW RATE (STANDARD CUBIC FT/MIN) (P.) 5,716,333			
OPERATING RATE/SCHEDULE							
EXPECTED ANNUAL THROUGHPUT (Q.) 35,591,880		UNITS (R.) MMBtu	MAXIMUM HOURLY DESIGN RATE (S.) 4,063		UNITS/HR (T.) MMBtu		
EXPECTED HOURS/DAY (U.) 24		EXPECTED DAYS/WEEK 7		EXPECTED WEEKS/YEAR 52			
AIR POLLUTION CAPTURE AND CONTROL DEVICES							
DEVICE NO. (V.)	CAPTURE DEVICE DESCRIPTION (W.)	CAPTURE DEVICE CAPTURE EFFICIENCY % (X.)					
		PM ₁₀	SO _x	NO _x	VOC	CO	HAPs
	Selective Catalytic Reduction (SCR)						
	See Application						
DEVICE NO. (Y.)	CONTROL DEVICE DESCRIPTION (Z.)	CONTROL DEVICE DESTRUCTION/REMOVAL EFFICIENCY % (AA.)					
		PM ₁₀	SO _x	NO _x	VOC	CO	HAPs
	Catalytic Oxidation Unit (OxCat)						
	See Application						
CALCULATION SECTION (BB.)							
POLLUTANT	EMISSION FACTOR	EMISSION FACTOR UNITS	OVERALL CONTROL EFFICIENCY	EMISSION RATE (LB/HR)	POTENTIAL EMISSIONS (TONS/YR)		
See Application							

Emission Information for Air Construction Permit Application Form 2.1 Fuel Combustion Information (duplicate this form as needed)								
INSTALLATION NAME (A.) Mullin Creek Generating Station		FIPS COUNTY NO. (B.)	PLANT NO. (C.)					
COMBUSTION EQUIPMENT INFORMATION								
EMISSION UNIT NO. (D.) SCCT2	SCC (E.) 2-01-002-01							
(F.) EQUIPMENT DESCRIPTION (MAKE/MODEL) Mitsubishi M501JAC	(G.) YEAR PUT IN SERVICE TBD	(H.) MAXIMUM DESIGN RATE (MILLION BTU/HR) 4,063						
FUEL INFORMATION								
(I.) FUEL TYPE <table style="width:100%; border: none;"> <tr> <td style="vertical-align: top; width: 25%;"> Oil ☒ Distillate (Fuel Oil 1-4) ☐ Residual Fuel Oil (5-6) </td> <td style="vertical-align: top; width: 25%;"> Gas ☒ Natural Gas ☐ LPG/Propane </td> <td style="vertical-align: top; width: 25%;"> Coal ☐ Anthracite ☐ Bituminous ☐ Lignite </td> <td style="vertical-align: top; width: 25%;"> Other ☐ Refuse ☐ Trade Wastes Waste Oil ☐ Other (specify) </td> </tr> </table>					Oil ☒ Distillate (Fuel Oil 1-4) ☐ Residual Fuel Oil (5-6)	Gas ☒ Natural Gas ☐ LPG/Propane	Coal ☐ Anthracite ☐ Bituminous ☐ Lignite	Other ☐ Refuse ☐ Trade Wastes Waste Oil ☐ Other (specify)
Oil ☒ Distillate (Fuel Oil 1-4) ☐ Residual Fuel Oil (5-6)	Gas ☒ Natural Gas ☐ LPG/Propane	Coal ☐ Anthracite ☐ Bituminous ☐ Lignite	Other ☐ Refuse ☐ Trade Wastes Waste Oil ☐ Other (specify)					
FUEL (J.)	EXPECTED ANNUAL THROUGHPUT (K.)	UNITS (L.)	% SULFUR BY WEIGHT (M.)	% ASH BY WEIGHT (N.)				
See Application								
FUEL TOTALS AND WEIGHTED AVERAGES								
Comments:								

Emission Information for Air Construction Permit Application					
Form 2.0 Emission Unit Information (duplicate this form as needed)					
INSTALLATION NAME (A.) Mullin Creek Generating Station			FIPS COUNTY NO. (B.)		PLANT NO. (C.)
UNIT IDENTIFICATION					
EMISSION UNIT NO. (D.) FUEL GAS HEAT1-3		EMISSION UNIT DESCRIPTION (E.) FUEL GAS HEATER 1-3			
SOURCE CLASSIFICATION CODE (SCC) (F.)			MAKE (G.) TBD	MODEL (H.) TBD	YEAR (I.) TBD
RELEASE PARAMETERS					
EMISSION RELEASE CHARACTERISTICS (CHECK THE APPROPRIATE BOX) (J.)					
☒ STACK ☐ VENT ☐ FUGITIVE					
STACK OR VENT NO. (K.) FUEL GAS HEATER		HEIGHT (FT) (L.) 15		DIAMETER (FT) OR WIDTH X LENGTH (IN) (M.) 0.83	
TEMPERATURE (F) (N.) 550		VELOCITY (FT/MIN) (O.) 55		FLOW RATE (STANDARD CUBIC FT/MIN) (P.)	
OPERATING RATE/SCHEDULE					
EXPECTED ANNUAL THROUGHPUT (Q.) 144,844		UNITS (R.) MMBtu/yr	MAXIMUM HOURLY DESIGN RATE (S.) 13.11		UNITS/HR (T.) MMBtu/hr
EXPECTED HOURS/DAY (U.) 24		EXPECTED DAYS/WEEK 7		EXPECTED WEEKS/YEAR 52	
AIR POLLUTION CAPTURE AND CONTROL DEVICES					
DEVICE NO. (V.)	CAPTURE DEVICE DESCRIPTION (W.)		CAPTURE DEVICE CAPTURE EFFICIENCY % (X.)		
			PM ₁₀	SO _x	NO _x
DEVICE NO. (Y.)	CONTROL DEVICE DESCRIPTION (Z.)		CONTROL DEVICE DESTRUCTION/REMOVAL EFFICIENCY % (AA.)		
			PM ₁₀	SO _x	NO _x
CALCULATION SECTION (BB.)					
POLLUTANT	EMISSION FACTOR	EMISSION FACTOR UNITS	OVERALL CONTROL EFFICIENCY	EMISSION RATE (LB/HR)	POTENTIAL EMISSIONS (TONS/YR)
See Application					

Emission Information for Air Construction Permit Application				
Form 2.1 Fuel Combustion Information (duplicate this form as needed)				
INSTALLATION NAME (A.)		FIPS COUNTY NO. (B.)		PLANT NO. (C.)
Mullin Creek Generating Station				
COMBUSTION EQUIPMENT INFORMATION				
EMISSION UNIT NO. (D.)		SCC (E.)		
FUEL GAS HEAT				
(F.) EQUIPMENT DESCRIPTION (MAKE/MODEL)		(G.) YEAR PUT IN SERVICE	(H.) MAXIMUM DESIGN RATE (MILLION BTU/HR)	
TBD		TBD	13.11	
FUEL INFORMATION				
(I.) FUEL TYPE				
Oil ☐ Distillate (Fuel Oil 1-4) ☐ Residual Fuel Oil (5-6) Gas ☒ Natural Gas ☐ LPG/Propane Coal ☐ Anthracite ☐ Bituminous ☐ Lignite Other ☐ Refuse ☐ Trade Wastes Waste Oil ☐ Other (specify)				
FUEL (J.)	EXPECTED ANNUAL THROUGHPUT (K.)	UNITS (L.)	% SULFUR BY WEIGHT (M.)	% ASH BY WEIGHT (N.)
Natural Gas	114,844	MMBtu		
FUEL TOTALS AND WEIGHTED AVERAGES				
Comments:				

Emission Information for Air Construction Permit Application								
Form 2.0 Emission Unit Information (duplicate this form as needed)								
INSTALLATION NAME (A.) Mullin Creek Generating Station			FIPS COUNTY NO. (B.)		PLANT NO. (C.)			
UNIT IDENTIFICATION								
EMISSION UNIT NO. (D.) EMERGEN1&2		EMISSION UNIT DESCRIPTION (E.) EMERGENCY DIESEL GENERATOR 1 & 2						
SOURCE CLASSIFICATION CODE (SCC) (F.)			MAKE (G.) TBD	MODEL (H.) TBD	YEAR (I.) TBD			
RELEASE PARAMETERS								
EMISSION RELEASE CHARACTERISTICS (CHECK THE APPROPRIATE BOX) (J.)								
☒ STACK ☐ VENT ☐ FUGITIVE								
STACK OR VENT NO. (K.) EMERGEN1&2		HEIGHT (FT) (L.) 14.5		DIAMETER (FT) OR WIDTH X LENGTH (IN) (M.) 1.5				
TEMPERATURE (F) (N.) 935		VELOCITY (FT/MIN) (O.) 248.1		FLOW RATE (STANDARD CUBIC FT/MIN) (P.)				
OPERATING RATE/SCHEDULE								
EXPECTED ANNUAL THROUGHPUT (Q.) 989		UNITS (R.) MMBtu	MAXIMUM HOURLY DESIGN RATE (S.) 9.89		UNITS/HR (T.) MMBtu/hr			
EXPECTED HOURS/DAY (U.) 24		EXPECTED DAYS/WEEK 7		EXPECTED WEEKS/YEAR 52				
AIR POLLUTION CAPTURE AND CONTROL DEVICES								
DEVICE NO. (V.)	CAPTURE DEVICE DESCRIPTION (W.)		CAPTURE DEVICE CAPTURE EFFICIENCY % (X.)					
			PM ₁₀	SO _x	NO _x	VOC	CO	HAPs
DEVICE NO. (Y.)	CONTROL DEVICE DESCRIPTION (Z.)		CONTROL DEVICE DESTRUCTION/REMOVAL EFFICIENCY % (AA.)					
			PM ₁₀	SO _x	NO _x	VOC	CO	HAPs
CALCULATION SECTION (BB.)								
POLLUTANT	EMISSION FACTOR	EMISSION FACTOR UNITS	OVERALL CONTROL EFFICIENCY	EMISSION RATE (LB/HR)	POTENTIAL EMISSIONS (TONS/YR)			
See Application								

Emission Information for Air Construction Permit Application Form 2.1 Fuel Combustion Information (duplicate this form as needed)				
INSTALLATION NAME (A.) Mullin Creek Generating Station		FIPS COUNTY NO. (B.)	PLANT NO. (C.)	
COMBUSTION EQUIPMENT INFORMATION				
EMISSION UNIT NO. (D.) EMERGEN1&2		SCC (E.)		
(F.) EQUIPMENT DESCRIPTION (MAKE/MODEL) TBD		(G.) YEAR PUT IN SERVICE TBD	(H.) MAXIMUM DESIGN RATE (MILLION BTU/HR)	
FUEL INFORMATION				
(I.) FUEL TYPE				
Oil ☒ Distillate (Fuel Oil 1-4) ☐ Residual Fuel Oil (5-6) Gas ☐ Natural Gas ☐ LPG/Propane Coal ☐ Anthracite ☐ Bituminous ☐ Lignite Other ☐ Refuse ☐ Trade Wastes Waste Oil ☐ Other (specify)				
FUEL (J.)	EXPECTED ANNUAL THROUGHPUT (K.)	UNITS (L.)	% SULFUR BY WEIGHT (M.)	% ASH BY WEIGHT (N.)
Ultra Low Sulfur Diesel	989	MMBtu/yr		
FUEL TOTALS AND WEIGHTED AVERAGES				
Comments:				

Emission Information for Air Construction Permit Application								
Form 2.0 Emission Unit Information (duplicate this form as needed)								
INSTALLATION NAME (A.) Mullin Creek Generating Station			FIPS COUNTY NO. (B.)		PLANT NO. (C.)			
UNIT IDENTIFICATION								
EMISSION UNIT NO. (D.) FIREPUMP		EMISSION UNIT DESCRIPTION (E.) EMERGENCY DIESEL FIREPUMP						
SOURCE CLASSIFICATION CODE (SCC) (F.)			MAKE (G.) TBD	MODEL (H.) TBD	YEAR (I.) TBD			
RELEASE PARAMETERS								
EMISSION RELEASE CHARACTERISTICS (CHECK THE APPROPRIATE BOX) (J.)								
☒ STACK ☐ VENT ☐ FUGITIVE								
STACK OR VENT NO. (K.) FIREPUMP		HEIGHT (FT) (L.) 5		DIAMETER (FT) OR WIDTH X LENGTH (IN) (M.) 0.5				
TEMPERATURE (F) (N.) 1030		VELOCITY (FT/MIN) (O.) 221.6		FLOW RATE (STANDARD CUBIC FT/MIN) (P.)				
OPERATING RATE/SCHEDULE								
EXPECTED ANNUAL THROUGHPUT (Q.) 205.6		UNITS (R.) MMBtu/yr	MAXIMUM HOURLY DESIGN RATE (S.) 2.06		UNITS/HR (T.) MMBtu/hr			
EXPECTED HOURS/DAY (U.) 24		EXPECTED DAYS/WEEK 7		EXPECTED WEEKS/YEAR 52				
AIR POLLUTION CAPTURE AND CONTROL DEVICES								
DEVICE NO. (V.)	CAPTURE DEVICE DESCRIPTION (W.)		CAPTURE DEVICE CAPTURE EFFICIENCY % (X.)					
			PM ₁₀	SO _x	NO _x	VOC	CO	HAPs
DEVICE NO. (Y.)	CONTROL DEVICE DESCRIPTION (Z.)		CONTROL DEVICE DESTRUCTION/REMOVAL EFFICIENCY % (AA.)					
			PM ₁₀	SO _x	NO _x	VOC	CO	HAPs
CALCULATION SECTION (BB.)								
POLLUTANT	EMISSION FACTOR	EMISSION FACTOR UNITS	OVERALL CONTROL EFFICIENCY	EMISSION RATE (LB/HR)	POTENTIAL EMISSIONS (TONS/YR)			
See Application								

Emission Information for Air Construction Permit Application Form 2.1 Fuel Combustion Information (duplicate this form as needed)				
INSTALLATION NAME (A.) Mullin Creek Generating Station		FIPS COUNTY NO. (B.)	PLANT NO. (C.)	
COMBUSTION EQUIPMENT INFORMATION				
EMISSION UNIT NO. (D.) FIREPUMP		SCC (E.)		
(F.) EQUIPMENT DESCRIPTION (MAKE/MODEL) TBD	(G.) YEAR PUT IN SERVICE TBD	(H.) MAXIMUM DESIGN RATE (MILLION BTU/HR) 2.06		
FUEL INFORMATION				
(I.) FUEL TYPE				
Oil ☒ Distillate (Fuel Oil 1-4) ☐ Residual Fuel Oil (5-6) Gas ☐ Natural Gas ☐ LPG/Propane Coal ☐ Anthracite ☐ Bituminous ☐ Lignite Other ☐ Refuse ☐ Trade Wastes Waste Oil ☐ Other (specify)				
FUEL (J.)	EXPECTED ANNUAL THROUGHPUT (K.)	UNITS (L.)	% SULFUR BY WEIGHT (M.)	% ASH BY WEIGHT (N.)
Ultra Low Sulfur Diesel	205.6	MMBtu/yr		
FUEL TOTALS AND WEIGHTED AVERAGES				
Comments:				

Emission Information for Air Construction Permit Application				
Form 2.5 Organic Liquid Storage				
INSTALLATION NAME (A.) Mullin Creek Generating Station		FIPS COUNTY NO. (B.)	PLANT NO. (C.)	
A. Fixed Roof Tank Information (duplicate this form as needed.)				
This form is for use with each liquid storage tanks that are 500 gallons or greater in capacity. Include all organic liquids, petroleum products or fuels.				
TANK INFORMATION				
EMISSION UNIT (TANK IDENTIFICATION) NO. (D.) FUELTK1&2	CAPACITY (IN THOUSANDS OF GALLONS) (E.) 1300	DIAMETER (FT) (F.) 120	HEIGHT (FT) (G.) 15.5	LENGTH (FT) (H.)
COLOR (SHELL) (I.) White	COLOR (ROOF) (J.) White	TYPE OF ROOF: (K.) ☒ Cone ☐ Dome ☐ Other (specify)		
YEAR PLACED IN SERVICE (L.) TBD	AVERAGE LIQUID HEIGHT (FT) (M.) 7.5	ROOF HEIGHT (FT) (N.) 15.5		
VENT PRESSURE SETTING (O.) 0.03	VENT VACUUM SETTING (P.) -0.03	EXPECTED THROUGHPUT (IN THOUSAND OF GALLONS PER YEAR) (Q.) 214,244		
CHEMICAL INFORMATION				
CHEMICAL (R.) ULSD	CAS NUMBER (S.)	VAPOR MOLECULAR WEIGHT (T.) 130		
AVERAGE LIQUID SURFACE TEMPERATURE (F) (U.) 60		VAPOR PRESSURE AT AVERAGE LIQUID SURFACE TEMPERATURE (PSIA) (V.) 0.006		
*MIXTURE - PROVIDE DOCUMENTATION FOR MULTIPLE COMPONENT MIXTURE				
B. Floating Roof Tank Information (duplicate this form as needed.)				
Provide all the following information for liquid storage tanks with capacities greater than 500 gallons. Include all organic liquids and petroleum products or fuels.				
TANK INFORMATION				
EMISSION UNIT (TANK IDENTIFICATION) NO. (D.)	YEAR PLACED IN SERVICE (E.)		CAPACITY (IN THOUSANDS OF GALLONS) (F.)	
DIAMETER (FT) (G.)	LENGTH OF SEAM (FT) (H.)	NUMBER OF COLUMNS (I.)	EFFECTIVE COLUMN DIAMETER (FT) (J.)	
TYPE OF CONSTRUCTION (K.) ☐ Riveted ☐ Welded		TYPE OF ROOF (L.) ☐ Internal ☐ External		
PRIMARY SEAL (M.) ☐ Metallic Shoe ☐ Vapor Mounted ☐ Liquid Mounted		SECONDARY SEAL (N.) ☐ None ☐ Rim Mounted ☐ Shoe Mounted ☐ Weather Shield		
AREA OF DECK (SQ FT) (O.)	DECK (P.) ☐ Bolted ☐ Welded	SHELL CONDITION (Q.) ☐ Light Rust ☐ Dense Rust ☐ Gunite Lined		
EXPECTED THROUGHPUT (IN THOUSANDS OF GALLONS PER YEAR) (R.)				
CHEMICAL INFORMATION				
CHEMICAL (S.)	CAS NUMBER (T.)		VAPOR MOLECULAR WEIGHT (U.)	
LIQUID DENSITY (LB/GAL) (V.)		VAPOR PRESSURE AT STORAGE TEMPERATURE (PSIA) (W.)		

APPENDIX C PSD RBLC

Table E-1
RACT/BACT/LAER Clearing House Summary for NOx Emissions from Simple Cycle Natural Gas-Fired Turbines

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Standard Emission Limit	Standard Emission Limit Units	Standard Emission Limit Averaging Period	Pollutant Compliance Notes	
IN-0384	SYCAMORE RIVERSIDE ENERGY LLC	IN	153-47292-00062	03/31/2025 ACT	Four GE 7FA.05 simple cycle combustion turbines	Natural Gas	240	MW Each	NOx	dry low-NOx combustors, water injection when using ULSD, good combustion practices, clean fuels	9	PPMVD	@ 15% O2 (NG) STEADY STATE OPERATIONS	BACT-PSD	76.2	LB	HR (NG) STEADY STATE OPERATIONS	0				
*TX-0989	LONE STAR POWER STATION	TX	177473, N316	03/17/2025 ACT	Simple Cycle Gas Turbines	NATURAL GAS	0		NOx	Dry-low NOx (DLN) combustors and an aqueous ammonia-based SCR system	2.5	PPMVD	15% O2 1-HR	LAER	0			0				
*TX-0986	JACK COUNTY GENERATION FACILITY	TX	PSDTX1640,, GHGPSDTX240	12/27/2024	COMBUSTION TURBINES	NATURAL GAS	180.2	MW	NOx	Each turbine is limited to 15 ppmvd concentration at 15% O2 on a 3-hour average through an upgrade to æ™™ HR3â€™™ Dry Low-NOx (DLN) burners. 14 ppmvd at 15% O2 is achieved on an annual average and also includes during periods when wet compression (evaporative air cooling) is applied. MSS - Limited to 50 startups and 50 shutdowns per year for each turbine. Startup and shutdown events are	15	PPMVD	15% O2	BACT-PSD	0							
*TX-0975	FREESTONE PEAKERS PLANT	TX	173582, PSDTX1626, GHGPSDTX233	6/13/2024	Simple Cycle Gas Turbines	NATURAL GAS	221	MW	NOx	Dry low-NOx burners (DLNB) and good combustion practices.	9	PPMVD	15% O2	BACT-PSD	0							
MI-0454	LBWL-ERICKSON STATION	MI	74-18D	12/20/2022	EUCTGSC1--A nominally rated 667 MMBTU/H natural gas-fired simple cycle CTG	Natural gas	667	MMBTU/H	NOx	DLNB and good combustion practices.	25	PPM	4-HR ROLLING AVG EXCEPT <75% PEAK LOAD	BACT-PSD	60	LB/H						
*TN-0187	TENNESSEE VALLEY AUTHORITY - JOHNSONVILLE COMBUSTION TURBINE	TN	979348	8/31/2022	Ten Simple Cycle NG Turbines	Natural Gas	465.8	MMBtu/hr	NOx	dry low-NOx burners selective catalytic reduction	5	PPMVD @ 15% O2	4-HOUR ROLLING AVERAGE EXCLUDING STA/SHU	BACT-PSD	21.8	LB/EVENT						
AK-0088	LIQUEFACTION PLANT	AK	AQ1539CPT01	7/7/2022	Six Simple Cycle Gas-Fired Turbines	Natural Gas	1113	MMBtu/hr	NOx	SCR, DLN combustors, and good combustion practices	2	PPMV @ 15% O2	3-HOURS	BACT-PSD	0							
TX-0933	NACERO PENWELL FACILITY	TX	164137 PSDTX1594 GHGPSDTX207	11/17/2021	TURBINE	NATURAL GAS	0		NOx	LOW NOX BURNERS AND SCR	9	PPMVD	15% O2	BACT-PSD	0							
AL-0329	COLBERT COMBUSTION TURBINE PLANT	AL	701-0010	9/21/2021	Three 229 MW Simple Cycle Combustion Turbines	Natural Gas	229	MW	NOx		9	PPMVD	3 HOUR AVG @ 15% O2	BACT-PSD	380	TONS						
MI-0447	LBWL-ERICKSON STATION	MI	74-18A	1/7/2021	EUCTGSC1-natural gas fired simple cycle CTG	Natural gas	667	MMBTU/H	NOx	DLNB and good combustion practices.	25	PPM	4-HR ROLL AVG EXCEPT LESS THAN 75% PEAK	BACT-PSD	60	LB/H						
LA-0383	LAKE CHARLES LNG EXPORT TERMINAL	LA	PSD-LA-838	9/3/2020	Turbines (EQT0020 - EQT0031)	Natural gas	0		NOx	LNB + SCR	3.1	PPMVD @15%O2	3-HOUR AVERAGE	BACT-PSD	0							

Table E-1
RACT/BACT/LAER Clearing House Summary for NOx Emissions from Simple Cycle Natural Gas-Fired Turbines

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Standard Emission Limit	Standard Emission Limit Units	Standard Emission Limit Averaging Period	Pollutant Compliance Notes
TX-0900	ECTOR COUNTY ENERGY CENTER	TX	110423, PSDTX1366M1 GHGPSD49M1	8/17/2020	Simple Cycle Turbines	natural gas	0		NOx	Equipped with dry-low NOx burners with best management practices and good combustion practices. Minimize the duration of startup and shutdown events to less than 60 minutes per event. Limit MSS by 140 lb/hr maximum allowable emission rate for each turbine.	9	PPMVD	3% O2 3 HR AVG	BACT-PSD	15	PPMVD					
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	Six (6) Simple Cycle Gas-Turbines (Power Generation)	Natural Gas	386	MMBTu/hr	NOx	DLN combustors and Good Combustion Practices	15	PPMV @ 15% O2	3-HOUR AVERAGE	BACT-PSD	0						
MI-0441	LBWL--ERICKSON STATION	MI	74-18	12/21/2018	EUCTGSC1-A nominally rated 667 MMBTU/hr natural gas-fired simple cycle CTG	Natural gas	667	MMBTU/H	NOx	Dry low NOx burners (DLNB) and good combustion practices.	25	PPM	AT 15%O2;4-HR ROLL AVG; SEE NOTES BELOW	BACT-PSD	60	LB/H					
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Aeroderivative Simple Cycle Combustion Turbine	Natural Gas	263	MM BTU/h	NOx	Selective Catalytic Reduction (SCR), exclusive combustion of fuel gas, and good combustion practices.	25	PPMV	30 DAY ROLLING AVERAGE	BACT-PSD	0						
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Simple Cycle Combustion Turbines (SCTT1 to SCTT3)	Natural Gas	927	MM BTU/h	NOx	Dry Low NOx Combustor Design, Good Combustion Practices, and Natural Gas Combustion.	9	PPMV	30 DAY ROLLING AVERAGE	BACT-PSD	0						
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG01 CO - Simple-Cycle Combustion Turbine 1 (Commissioning) [SCN0005]	Natural Gas	2201	MM BTU/hr	NOx	Pipeline quality natural gas & dry-low-NOX burners	240	LB/HR	HOURLY MAXIMUM	BACT-PSD	42	TONS/YR					
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG02 CO - Simple-Cycle Combustion Turbine 2 (Commissioning) [SCN0006]	natural gas	2201	MM BTU/hr	NOx	Pipeline quality natural gas & dry-low-NOX burners	240	LB/HR	HOURLY MAXIMUM	BACT-PSD	42	TONS/YR					
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG01 SUSD - Simple-Cycle Combustion Turbine 1 (Startup/Shutdown/Maintenance/Tuning /Runback) [EQT0019]	Natural Gas	2201	MM BTU/HR	NOx	Pipeline quality natural gas & dry-low-NOX burners	86.38	LB/HR	HOURLY MAXIMUM	BACT-PSD	0						
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG02 SUSD - Simple-Cycle Combustion Turbine 2 (Startup/Shutdown/Maintenance/Tuning /Runback) [EQT0020]	Natural Gas	2201	MM BTU/hr	NOx	Pipeline quality natural gas & dry-low-NOX burners	86.38	LB/HR	HOURLY MAXIMUM	BACT-PSD	0						
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG01 NO - Simple-Cycle Combustion Turbine 1 (Normal Operations) [EQT0017]	Natural Gas	2201	MM BTU/hr	NOx	Pipeline quality natural gas & dry-low-NOX burners	9	PPMVD @15%O2	30-DAY ROLLING AVERAGE	BACT-PSD	73.08	LB/HR					
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG02 NO - Simple-Cycle Combustion Turbine 2 (Normal Operations) [EQT0018]	Natural Gas	2201	MM BTU/hr	NOx	Pipeline quality natural gas & dry-low-NOX burners	9	PPMVD @15%O2	30-DAY ROLLING AVERAGE	BACT-PSD	73.08	LB/HR					
WV-0028	WAVERLY POWER PLANT	WV	R14-0034A	3/13/2018	GE 7FA.004 Turbine	Natural Gas	167.8	MW	NOx	Dry LNB	69	LB/HR		BACT-PSD	232.3	TONS/YEAR					
TX-0833	JACKSON COUNTY GENERATORS	TX	PSDTX1422	1/26/2018	Combustion Turbines	natural gas	920	MW	NOx	Dry low NOx burners	9	PPMVD		BACT-PSD	0						

Table E-1
RACT/BACT/LAER Clearing House Summary for NOx Emissions from Simple Cycle Natural Gas-Fired Turbines

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Standard Emission Limit	Standard Emission Limit Units	Standard Emission Limit Averaging Period	Pollutant Compliance Notes
TX-0833	JACKSON COUNTY GENERATORS	TX	PSDTX1422	1/26/2018	Combustion Turbines MSS	NATURAL GAS	0		NOx	Minimizing duration of startup/shutdown, using good air pollution control practices and safe operating practices.	0.01	TON/YR		BACT-PSD	0						
TX-0826	MUSTANG STATION	TX	72579, PSDTX1080M1, GHGSPSDTX13	8/16/2017	Simple Cycle Turbine	NATURAL GAS	162.8	MW	NOx	Dry low-NOx burners	9	PPMVD		BACT-PSD	0						
TX-0819	GAINES COUNTY POWER PLANT	TX	135322, PSDTX1470, AND GHGSPSDT	4/28/2017	Simple Cycle Turbine	natural gas	227.5	MW	NOx	Dry Low NOx burners (control), natural gas, good combustion practices, limited operating hours (prevention)	9	PPMV	15% O2 3-H AVG	BACT-PSD	0						
IN-0261	VERMILLION GENERATING STATION	IN	165-36956-00022	2/28/2017	SIMPLE CYCLE, NATURAL GAS FIRED COMBUSTION TURBINES	NATURAL GAS	80	MW	NOx	GOOD COMBUSTION PRACTICES	250	LB/H	EACH TURBINE	BACT-PSD	25	TON/12 CONSEC. MONTH					
LA-0316	CAMERON LNG FACILITY	LA	PSD-LA-766(M3)	2/17/2017	Gas turbines (9 units)	natural gas	1069	mm btu/hr	NOx	good combustion practices and dry low nox burners	15	PPMVD	@15%O2	BACT-PSD	0						
WV-0026	WAVERLY FACILITY	WV	R14-0034	1/23/2017	GE Model 7FA Turbine	Natural Gas	1571	mmbtu/hr	NOx	Dry Low-NOx Combustion System (DLNB), Water Injection	9	PPM	NATURAL GAS	BACT-PSD	49	PPM					
IN-0264	MONTPELIER GENERATING STATION	IN	179-37209-00026	1/6/2017	PRATT & TWIN-FAC SIMPLE CYCLE TURBINES	NATURAL GAS	270.9	MMBTU/H	NOx	WATER INJECTION	25	PPMV	AT 15% O2 FOR NATURAL GAS	BACT-PSD	42	PPMV					
CA-1238	PUENTE POWER	CA	00013-370	10/13/2016	Gas turbine	Natural gas	262	MW	NOx		2.5	PPMVD	1 HOUR@15%O2	OTHER CASE-BY-CASE	0						
VA-0326	DOSWELL ENERGY CENTER	VA	51018	10/4/2016	Two (2) GE 7FA simple cycle combustion turbines	Natural Gas	1961	MMBTU/HR	NOx	Low NOx Burners/Combustion Technology	9	PPM	VD/12 MO ROLLING TOTAL	BACT-PSD	74.2	LB					
IL-0121	INVENERGY NELSON EXPANSION LLC	IL	15060042	9/27/2016	Two Simple Cycle Combustion Turbines	Natural Gas	190	MW	NOx	Dry low-NOx combustion technology for natural gas and low-NOx combustion technology and water injection for ULSD.	0.033	LB/MMBTU		BACT-PSD	0.164	LB/MMBTU					
NY-0106	GREENIDGE STATION	NY	8-5736-00004/00017	9/7/2016	Turbine - natural gas	natural gas	107	MW	NOx	Advanced low NOx burners, closed-coupled and staged over-fire air, Selective Non-Catalytic Reduction, and Selective Catalytic Reduction.	0.03	LB/MMBTU	12 MO	LAER	0.0365	LB/MMBTU					
NY-0106	GREENIDGE STATION	NY	8-5736-00004/00017	9/7/2016	Turbine - natural gas and wood	natural gas and up to 19% wood	107	MW	NOx	Advanced low NOx burners, closed-coupled and staged over-fire air, Selective Non-Catalytic Reduction, and Selective Catalytic Reduction.	0.03	LB/MMBTU	12 MO	LAER	0.058	LB/MMBTU					
NJ-0086	BAYONNNE ENERGY CENTER	NJ	12863-BOP150001	8/26/2016	Simple Cycle Stationary Turbines firing Natural gas	Natural Gas	2143980	MMBTU/YR	NOx	Selective Catalytic Reduction, water injection, use of natural gas a low NOx emitting fuel	2.5	PPMVD@15%O2	3 H ROLLING AV BASED ON ONE H BLOCK AV	LAER	5.92	LB/H					
NJ-0086	BAYONNNE ENERGY CENTER	NJ	12863-BOP150001	8/26/2016	Simple Cycle Stationary Turbines firing Ultra Low Sulfur Distillate Oil	Ultra Low Sulfur Distillate Oil	720	H/YR	NOx	SCR and water injection	5	PPMVD@15% O2	3 H ROLLING AV BASED ON ONE H BLOCK AV	LAER	10.37	LB/H					

Table E-1
RACT/BACT/LAER Clearing House Summary for NOx Emissions from Simple Cycle Natural Gas-Fired Turbines

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Standard Emission Limit	Standard Emission Limit Units	Standard Emission Limit Averaging Period	Pollutant Compliance Notes
TX-0794	HILL COUNTY GENERATING FACILITY	TX	130051,PSDTX1450, GHGSPSDTX131	4/7/2016	Simple cycle turbine	natural gas	171	MW	NOx	Emission controls consist of dry low-NOx combustors (DLN). DLN combustors use two stages of combustion, transitioning from initial startup with fuel and flame in the primary nozzles only, through a lean lean stage with fuel and flame in the primary and secondary nozzles, to fuel in the secondary stage only, extinguishing the primary flame, and in full operation, premix mode, with fuel to both nozzles.	9	PPMVD @ 15% O2	3-HR ROLLING AVERAGE	BACT-PSD	0						
TX-0794	HILL COUNTY GENERATING FACILITY	TX	130051,PSDTX1450, GHGSPSDTX131	4/7/2016	Simple Cycle Turbine	ULTRA LOW SULFUR DIESEL	171	MW	NOx	DLN, WATER INJECTION	42	PPMVD @ 15% O2	3-HR ROLLING AVERAGE	BACT-PSD	0						
TX-0788	NECHES STATION	TX	122401, PSDTX1428, GHGSPSDTX111	3/24/2016	Large Combustion Turbines > 25 MW	natural gas	232	MW	NOx	Dry low-NOx burners (DLN), good combustion practices	9	PPM		BACT-PSD	0						
LA-0307	MAGNOLIA LNG FACILITY	LA	PSD-LA-792	3/21/2016	Gas Turbines (8 units)	natural gas	333	mm btu/hr	NOx	Dry Low NOx burners and good combustion practices	25	PPMVD	@15 %O2	BACT-PSD	0						
TX-0777	UNION VALLEY ENERGY CENTER	TX	120973 AND PSDTX1420	12/9/2015	Simple Cycle Turbine	natural gas	183	MW	NOx	dry low NOx burners	9	PPMVD @ 15% O2	3-HR ROLLING AVERAGE PEAK	BACT-PSD	0						
TX-0769	VAN ALSTYNE ENERGY CENTER (VAEC)	TX	121051 AND PSDTX1418	10/27/2015	Simple Cycle Turbine	natural gas	183	MW	NOx	DLN burners	9	PPMVD @ 15% O2	3-HR AVERAGE	BACT-PSD	0						
TX-0764	NACOGDOCHES POWER ELECTRIC GENERATING PLANT	TX	77679, PSDTX1061M1 & O-3455	10/14/2015	Natural Gas Simple Cycle Turbine (>25 MW)	natural gas	232	MW	NOx	Dry Low NOx burners, good combustion practices, limited operations	9	PPMVD @ 15% O2		BACT-PSD	0						
TX-0768	SHAWNEE ENERGY CENTER	TX	PSDTX1442, 125963	10/9/2015	Simple cycle turbines greater than 25 megawatts (MW)	natural gas	230	MW	NOx	Dry Low NOx burners	9	PPMVD @ 15% O2		BACT-PSD	0						
FL-0355	FORT MYERS PLANT	FL	0710002-022-AC	9/10/2015	Combustion Turbines	Natural gas	2262.4	MMBtu/hr gas	NOx	DLN and wet injection (for ULSD operation)	9	PPMVD@15% O2	GAS FIRING, 24-HR BLOCK AVG	BACT-PSD	42	PPMVD@15% O2					
FL-0354	LAUDERDALE PLANT	FL	0110037-013-AC	8/25/2015	Five 200-MW combustion turbines	Natural gas	2100	MMBtu/hr (approx)	NOx	Dry-low-NOx combustion system. Wet injection when firing ULSD.	9	PPMVD@15%O2	24-HR BLOCK AVERAGE	BACT-PSD	42	PPMVD@15%O2					
TX-0733	ANTELOPE ELK ENERGY CENTER	TX	109148, PSDTX1358M1	5/12/2015	Simple Cycle Turbine & Generator	natural gas	202	MW	NOx	Dry Low NOx burners	9	PPMVD AT 15% O2		BACT-PSD	0						
TX-0734	CLEAR SPRINGS ENERGY CENTER (CSEC)	TX	120849 AND PSDTX1414	5/8/2015	Simple Cycle Turbine	natural gas	183	MW	NOx	dry low-NOx (DLN) burners	9	PPMVD @ 15% O2	3-HR AVERAGE	BACT-PSD	0						
TX-0694	INDECK WHARTON ENERGY CENTER	TX	111724 PSDTX1374	2/2/2015	(3) combustion turbines	natural gas	220	MW	NOx	DLN combustors	9	PPMVD	@15% O2, 3-HR ROLLING AVERAGE	BACT-PSD	0						

Table E-2
RACT/BACT/LAER Clearing House Summary for CO Emissions from Simple Cycle Natural Gas-Fired Turbines

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Standard Emission Limit	Standard Emission Limit Units	Standard Emission Limit Averaging Period
IN-0384	SYCAMORE RIVERSIDE ENERGY LLC	IN	153-47292-00062	03/31/2025 ACT	Four GE 7FA.05 simple cycle combustion turbines	Natural Gas	240	MW Each			9	PPMVD	@ 15% O2 (NG) STEADY STATE OPERATIONS	BACT-PSD	36.2	LB	HR NG STEADY STATE	0		
AL-0329	COLBERT COMBUSTION TURBINE PLANT	AL	701-0010	9/21/2021	Three 229 MW Simple Cycle Combustion Turbines	Natural Gas	229	MW	Carbon Dioxide		120	LB/MMBTU		BACT-PSD	0					
WV-0026	WAVERLY FACILITY	WV	R14-0034	1/23/2017	GE Model 7FA Turbine	Natural Gas	1571	mmbtu/hr	Carbon Dioxide	Use of Natural Gas, Selection of GETFA	1300	LB/MW-HR	NATURAL GAS	BACT-PSD	1900	LB/MW-HR				
IN-0264	MONTPELIER GENERATING STATION	IN	179-37209-00026	1/6/2017	PRATT & TWIN-PAC SIMPLE CYCLE TURBINES	NATURAL GAS	270.9	MMBTU/H	Carbon Dioxide	NATURAL GAS AS PRIMARY FUEL; GOOD COMBUSTION PRACTICES	118	LB/MMBTU	FOR NATURAL GAS	BACT-PSD	162	LB/MMBTU				
NY-0106	GREENIDGE STATION	NY	8-5736-00004/00017	9/7/2016	Turbine - natural gas	natural gas	107	MW	Carbon Dioxide		130.17	LB/MMBTU	1 H	BACT-PSD	0					
NY-0106	GREENIDGE STATION	NY	8-5736-00004/00017	9/7/2016	Turbine - natural gas and wood	natural gas and up to 19% wood	107	MW	Carbon Dioxide		130.17	LB/MMBTU	1 H	BACT-PSD	0					
FL-0354	LAUDERDALE PLANT	FL	0110037-013-AC	8/25/2015	Five 200-MW combustion turbines	Natural gas	2100	MMBtu/hr (approx)	Carbon Dioxide	Use of natural gas with restricted use of ULSD as backup fuel	1372	LB/MWH	NAT GAS OPERATION, 12- OR 36- MO ROLLING	BACT-PSD	1871	LB/MWH				

Table E-3
RACT/BACT/LAER Clearing House Summary for VOC Emissions from Simple Cycle Natural Gas-Fired Turbines

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Standard Emission Limit	Standard Emission Limit Units	Standard Emission Limit Averaging Period
IN-0384	SYCAMORE RIVERSIDE ENERGY LLC	IN	153-47292-00062	03/31/2025 ACT	Four GE 7FA.05 simple cycle combustion turbines	Natural Gas	240	MW Each		CLEAN FUELS AND GOOD COMBUSTION PRACTICES	1.4	PPMVD	@ 15% O2 (NG) STEADY STATE OPERATIONS	BACT-PSD	3.5	LB	HR NG STEADY STATE	0		
*TX-0989	LONE STAR POWER STATION	TX	177473, N316	03/17/2025 ACT	Simple Cycle Gas Turbines	NATURAL GAS	0			Oxidation catalyst and good combustion practices	1	PPMVD	15% O2 3-HR	LAER	0			0		
*TX-0986	JACK COUNTY GENERATION FACILITY	TX	PSDTX1640,, GHGPSDTX240	12/27/2024	COMBUSTION TURBINES	NATURAL GAS	180.2	MW	Volatile Organic Compounds (VOC)	Each turbine is limited to 2 ppmvd at 15% O2, which meets Tier I BACT. Good combustion practices are used. MSS - Limited to 50 startups and 50 shutdowns per year for each turbine. Startup and shutdown events are each expected to last less than an hour in duration.	2	PPMVD	15% O2	BACT-PSD	0					
*TX-0975	FREESTONE PEAKERS PLANT	TX	173582, PSDTX1626, GHGPSDTX233	6/13/2024	Simple Cycle Gas Turbines	NATURAL GAS	221	MW	Volatile Organic Compounds (VOC)	Good combustion practices	2	PPMVD	15% O2	BACT-PSD	0					
MI-0454	LBWL-ERICKSON STATION	MI	74-18D	12/20/2022	EUCTGSC1--A nominally rated 667 MMBTU/H natural gas-fired simple cycle CTG	Natural gas	667	MMBTU/H	Volatile Organic Compounds (VOC)	Good combustion practices.	5	LB/H	HOURLY EXCEPT DURING SU/SD	BACT-PSD	0					
AK-0088	LIQUEFACTION PLANT	AK	AQ1539CPT01	7/7/2022	Six Simle Cycle Gas-Fired Turbines	Natural Gas	1113	MMBTu/hr	Volatile Organic Compounds (VOC)	Oxidation catalyst and good combustion practices	2	PPMV @ 15% O2	3-HOURS	BACT-PSD	0					
TX-0933	NACERO PENWELL FACILITY	TX	164137 PSDTX1594 GHGPSDTX207	11/17/2021	TURBINE	NATURAL GAS	0		Volatile Organic Compounds (VOC)	Oxidization catalyst, good combustion practices and the use of gaseous fuel	1.7	PPMVD		BACT-PSD	0					
MI-0447	LBWL-ERICKSON STATION	MI	74-18A	1/7/2021	EUCTGSC1-natural gas fired simple cycle CTG	Natural gas	667	MMBTU/H	Volatile Organic Compounds (VOC)	Good combustion practices	5	LB/H	HOURLY EXCEPT DURING STARTUP/SHUTDO WN	BACT-PSD	0					
LA-0383	LAKE CHARLES LNG EXPORT TERMINAL	LA	PSD-LA-838	9/3/2020	Turbines (EQT0020 - EQT0031)	Natural gas	0		Volatile Organic Compounds (VOC)	Good combustion practices	0			BACT-PSD	0					
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	Six (6) Simple Cycle Gas-Turbines (Power Generation)	Natural Gas	386	MMBTu/hr	Volatile Organic Compounds (VOC)	Good Combustion Practices and burning clean fuels (NG)	0.0022	LB/MMBTU	3-HOUR AVERAGE	BACT-PSD	0					
MI-0441	LBWL-ERICKSON STATION	MI	74-18	12/21/2018	EUCTGSC1-A nominally rated 667 MMBTU/hr natural gas-fired simple cycle CTG	Natural gas	667	MMBTU/H	Volatile Organic Compounds (VOC)	Good combustion practices.	5	LB/H	HOURLY EXCEPT DURING STARTUP/SHUTDO WN	BACT-PSD	0					
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Aeroderivative Simple Cycle Combustion Turbine	Natural Gas	263	MM BTU/h	Volatile Organic Compounds (VOC)	Proper Equipment Design, Proper Operation, and Good Combustion Practices.	1.5	PPMV	3 HOUR AVERAGE	BACT-PSD	0					
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Simple Cycle Combustion Turbines (SCCT1 to SCCT3)	Natural Gas	927	MM BTU/h	Volatile Organic Compounds (VOC)	Proper Equipment Design, Proper Operation, and Good Combustion Practices.	1.4	PPMV	3 HOUR AVERAGE	BACT-PSD	0					
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG01 CO - Simple-Cycle Combustion Turbine 1 (Commissioning) [SCN0005]	Natural Gas	2201	MM BTU/hr	Volatile Organic Compounds (VOC)	Good combustion practices & use of pipeline quality natural gas	0			BACT-PSD	0					
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG02 CO - Simple-Cycle Combustion Turbine 2 (Commissioning) [SCN0006]	natural gas	2201	MM BTU/hr	Volatile Organic Compounds (VOC)	Good combustion practices & use of pipeline quality natural gas	0			BACT-PSD	0					
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG01 SUSD - Simple-Cycle Combustion Turbine 1 (Startup/Shutdown/ Maintenance/Tuning/Runback) [EQT0019]	Natural Gas	2201	MM BTU/hr	Volatile Organic Compounds (VOC)	Good combustion practices & use of pipeline quality natural gas	0			BACT-PSD	0					
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG02 SUSD - Simple-Cycle Combustion Turbine 2 (Startup/Shutdown/ Maintenance/Tuning/Runback) [EQT0020]	Natural Gas	2201	MM BTU/hr	Volatile Organic Compounds (VOC)	Good combustion practices & use of pipeline quality natural gas	0			BACT-PSD	0					
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG01 NO - Simple-Cycle Combustion Turbine 1 (Normal Operations) [EQT0017]	Natural Gas	2201	MM BTU/hr	Volatile Organic Compounds (VOC)	Good combustion practices & use of pipeline quality natural gas	0			BACT-PSD	0					
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG02 NO - Simple-Cycle Combustion Turbine 2 (Normal Operations) [EQT0018]	Natural Gas	2201	MM BTU/hr	Volatile Organic Compounds (VOC)	Good combustion practices & use of pipeline quality natural gas	0			BACT-PSD	0					
TX-0833	JACKSON COUNTY GENERATORS	TX	PSDTX1422	1/26/2018	Combustion Turbines	natural gas	920	MW	Volatile Organic Compounds (VOC)	Good combustion practices	2	PPMVD		BACT-PSD	0					

Table E-3
RACT/BACT/LAER Clearing House Summary for VOC Emissions from Simple Cycle Natural Gas-Fired Turbines

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Standard Emission Limit	Standard Emission Limit Units	Standard Emission Limit Averaging Period
TX-0833	JACKSON COUNTY GENERATORS	TX	PSDTX1422	1/26/2018	Combustion Turbines MSS	NATURAL GAS	0		Volatile Organic Compounds (VOC)	Minimizing duration of startup/shutdown, using good air pollution control practices and safe operating practices.	0.06	TON/YR		BACT-PSD	0					
TX-0819	GAINES COUNTY POWER PLANT	TX	135322, PSDTX1470, AND GHGPSDT	4/28/2017	Simple Cycle Turbine	natural gas	227.5	MW	Volatile Organic Compounds (VOC)	Pipeline quality natural gas; limited hours; good combustion practices	2	PPMVD	145% O2	BACT-PSD	0					
IN-0261	VERMILLION GENERATING STATION	IN	165-36956-00022	2/28/2017	SIMPLE CYCLE, NATURAL GAS FIRED COMBUSTION TURBINES	NATURAL GAS	80	MW	Volatile Organic Compounds (VOC)	GOOD COMBUSTION PRACTICES	17.6	LB/H	EACH TURBINE	BACT-PSD	1.76	N/12 CONSEC. MONTH				
LA-0316	CAMERON LNG FACILITY	LA	PSD-LA-766(M3)	2/17/2017	Gas turbines (9 units)	natural gas	1069	mm btu/hr	Volatile Organic Compounds (VOC)	good combustion practices and fueled by natural gas	1.6	PPMVD	@15%O2	BACT-PSD	0					
CA-1238	PUEENTE POWER	CA	00013-370	10/13/2016	Gas turbine	Natural gas	262	MW	Volatile Organic Compounds (VOC)		2	PPMVD AS METHANE	1 HOUR@15%O2	OTHER CASE-BY-CASE	0					
NJ-0086	BAYONNNE ENERGY CENTER	NJ	12863-BOP150001	8/26/2016	Simple Cycle Stationary Turbines firing Natural gas	Natural Gas	2143980	MMBTU/YR	Volatile Organic Compounds (VOC)	Add-on VOC control is Oxidation Catalyst, and use of natural gas as fuel for pollution prevention	2	PPMVD@15%O2	3 H ROLLING AV BASED ON ONE H BLOCK AV	OTHER CASE-BY-CA	1.65	LB/H				
NJ-0086	BAYONNNE ENERGY CENTER	NJ	12863-BOP150001	8/26/2016	Simple Cycle Stationary Turbines firing Ultra Low Sulfur Distillate Oil	Ultra Low Sulfur Distillate Oil	720	H/YR	Volatile Organic Compounds (VOC)	Oxidation catalyst	4.5	PPMVD@15%O2	3 H ROLLING AV BASED ON ONE H BLOCK AV	LAER	3.25	LB/H				
TX-0794	HILL COUNTY GENERATING FACILITY	TX	130051,PSDTX1450 , GHGPSDTX131	4/7/2016	Simple cycle turbine	natural gas	171	MW	Volatile Organic Compounds (VOC)	Premixing of fuel and air enhances combustion efficiency and minimizes emissions.	5.4	LB/H		BACT-PSD	0					
TX-0794	HILL COUNTY GENERATING FACILITY	TX	130051,PSDTX1450 , GHGPSDTX131	4/7/2016	Simple Cycle Turbine	ULTRA LOW SULFUR DIESEL	171	MW	Volatile Organic Compounds (VOC)	combustor designed for complete combustion and therefore minimizes emissions	3.3	LB/H		BACT-PSD	0					
TX-0788	NECHES STATION	TX	122401, PSDTX1428, GHGPSDTX111	3/24/2016	Large Combustion Turbines > 25 MW	natural gas	232	MW	Volatile Organic Compounds (VOC)	good combustion practices	2	PPM		BACT-PSD	0					
LA-0307	MAGNOLIA LNG FACILITY	LA	PSD-LA-792	3/21/2016	Gas Turbines (8 units)	natural gas	333	mm btu/hr	Volatile Organic Compounds (VOC)	good combustion practices and fueled by natural gas	0			BACT-PSD	0					
TX-0764	NACOGDOCHES POWER ELECTRIC GENERATING PLANT	TX	77679, PSDTX1061M1 & O-3455	10/14/2015	Natural Gas Simple Cycle Turbine (>25 MW)	natural gas	232	MW	Volatile Organic Compounds (VOC)	Pipeline quality natural gas; limited hours; good combustion practices.	2	PPMVD @ 15% O2		BACT-PSD	0					
TX-0768	SHAWNEE ENERGY CENTER	TX	PSDTX1442, 125963	10/9/2015	Simple cycle turbines greater than 25 megawatts (MW)	natural gas	230	MW	Volatile Organic Compounds (VOC)	Pipeline quality natural gas; limited hours; good combustion practices.	1.4	PPMV		BACT-PSD	0					
TX-0733	ANTELOPE ELK ENERGY CENTER	TX	109148, PSDTX1358M1	5/12/2015	Simple Cycle Turbine & Generator	natural gas	202	MW	Volatile Organic Compounds (VOC)	Good combustion practices	2	PPMVD @ 15% O2		BACT-PSD	0					

Table E-4
RACT/BACT/LAER Clearing House Summary for SO2 Emissions from Simple Cycle Natural Gas-Fired Turbines

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
*TX-0986	JACK COUNTY GENERATION FACILITY	TX	PSDTX1640,, GHGPSDTX240	12/27/2024	COMBUSTION TURBINES	NATURAL GAS	180.2	MW	Sulfur Dioxide (SO2)	Pipeline quality natural gas containing no more than 2 grains sulfur per 100 dry standard cubic foot natural gas (gr S/100 dscf) is used. Tier I BACT for simple cycle natural gas fired turbines is good combustion practices and pipeline quality natural gas with a maximum sulfur content of 2 to 5 gr S/100 dscf on an hourly basis and between 0.5 to 1 gr S/100 dscf on an annual basis. While the hourly value is met, the annual Tier I BACT guideline is exceeded. As justification for the annual Tier I BACT guideline, the limited hours of operation authorized at no more than 2,500 hours per year per turbine results in an effective annual sulfur content of 0.57 gr S/100 dscf when compared to continuous operation of 2 gr S/100 scf at 8,760 hours per year	0			BACT-PSD	0			
AK-0088	LIQUEFACTION PLANT	AK	AQ1539CPT01	7/7/2022	Six Simple Cycle Gas-Fired Turbines	Natural Gas	1113	MMBtu/hr	Sulfur Dioxide (SO2)	pipeline quality natural gas and good combustion practices	16	PPMV SULFUR IN FUEL		BACT-PSD	0			
TX-0933	NACERO PENWELL FACILITY	TX	164137 PSDTX1594 GHGPSDTX207	11/17/2021	TURBINE	NATURAL GAS	0		Sulfur Dioxide (SO2)	Low sulfur content in fuel	0			BACT-PSD	0			
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	Six (6) Simple Cycle Gas-Turbines (Power Generation)	Natural Gas	386	MMBtu/hr	Sulfur Dioxide (SO2)	Good combustion practices and clean burning fuel low sulfur natural gas	96	PPMV SULFUR IN FUEL	PRIOR TO COMPLETING TREATMENT TRAINS	BACT-PSD	16	PPMV SULFUR IN FUEL		
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Aeroderivative Simple Cycle Combustion Turbine	Natural Gas	263	MM BTU/h	Sulfur Dioxide (SO2)	Exclusive Combustion of Low Sulfur Fuel	4	PPMV	ANNUAL AVERAGE	BACT-PSD	0			
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Simple Cycle Combustion Turbines (SCCT1 to SCCT3)	Natural Gas	927	MM BTU/h	Sulfur Dioxide (SO2)	Exclusive Combustion of low sulfur fuel - Fuel sulfur content <4 ppm, proper engineering practices.	4	PPMV	ANNUAL AVERAGE	BACT-PSD	0			
TX-0819	GAINES COUNTY POWER PLANT	TX	135322, PSDTX1470, AND GHGPSDT	4/28/2017	Simple Cycle Turbine	natural gas	227.5	MW	Sulfur Dioxide (SO2)	Pipeline quality natural gas; limited hours; good combustion practices	1.54	GR/100 DSCF		BACT-PSD	0			
IN-0261	VERMILLION GENERATING STATION	IN	165-36956-00022	2/28/2017	SIMPLE CYCLE, NATURAL GAS FIRED COMBUSTION TURBINES	NATURAL GAS	80	MW	Sulfur Dioxide (SO2)	GOOD COMBUSTION PRACTICES	0.6	LB/H	EACH TURBINE	BACT-PSD	0.1	TON/12 CONSEC. MONTH		
NJ-0086	BAYONNINE ENERGY CENTER	NJ	12863-BOP150001	8/26/2016	Simple Cycle Stationary Turbines firing Natural Gas	Natural Gas	2143980	MMBTU/YR	Sulfur Dioxide (SO2)	Use of natural gas a low sulfur fuel	0.77	LB/H	AV OF THREE ONE H STACK	OTHER CASE-BY-CASE	0			
NJ-0086	BAYONNINE ENERGY CENTER	NJ	12863-BOP150001	8/26/2016	Simple Cycle Stationary Turbines firing Ultra Low Sulfur Distillate Oil	Ultra Low Sulfur natural gas	720	H/YR	Sulfur Dioxide (SO2)	Use of ULSD a very low sulfur fuel	0.8	LB/H	AV OF THREE ONE H STACK	OTHER CASE-BY-CASE	0			
TX-0788	NECHES STATION	TX	122401, PSDTX1428, GHGPSDTX111	3/24/2016	Large Combustion Turbines > 25 MW	natural gas	232	MW	Sulfur Dioxide (SO2)	good combustion practices, low sulfur fuel	1	GR/100 SCF	HOURLY	BACT-PSD	0.25	GR/100 SCF		
FL-0355	FORT MYERS PLANT	FL	0710002-022-AC	9/10/2015	Combustion Turbines	Natural gas	2262.4	MMBtu/hr gas	Sulfur Dioxide (SO2)	Use of clean fuels	2	GR S / 100 SCF GAS	FOR NATURAL GAS	BACT-PSD	0.0015	% S IN ULSD		
FL-0354	LAUDERDALE PLANT	FL	0110037-013-AC	8/25/2015	Five 200-MW combustion turbines	Natural gas	2100	MMBtu/hr (approx)	Sulfur Dioxide (SO2)	Limitation on S in fuel	2	GR, S / 100 SCF	FUEL RECORD KEEPING	BACT-PSD	0.0015	% S IN ULSD		

Table E-5
RACT/BACT/LAER Clearing House Summary for PM Emissions from Simple Cycle Natural Gas-Fired Turbines

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period
IN-0384	SYCAMORE RIVERSIDE ENERGY LLC	IN	153-47292-00062	03/31/2025 ACT	Four GE 7FA.05 simple cycle combustion turbines	Natural Gas	240	MW Each	Particulate matter, total (TPM)	good combustion practices, low sulfur fuels	0.0031	LB	MMBTU NG STEADY STATE	BACT-PSD	6.6	LB	HR NG STEADY STATE
*TX-0986	JACK COUNTY GENERATION FACILITY	TX	PSDTX1640,, GHGPSDTX240	12/27/2024	COMBUSTION TURBINES	NATURAL GAS	180.2	MW	Particulate matter, filterable (FPM)	Pipeline quality natural gas and good combustion practices are used, which meets Tier I BACT. The turbines are proposed to meet 0.0075 lb/MMBtu total particulate matter. It is assumed that emissions of PM2.5 are equal to PM10, which are equal to total PM. No technically feasible post-combustion control technologies are available to reduce particulate matter emissions from gas turbines due to the large amount of excess air inherent to the turbine operation and would create an unacceptable amount of backpressure.	0.0075	LB/MMBTU		BACT-PSD	0		
*TX-0986	JACK COUNTY GENERATION FACILITY	TX	PSDTX1640,, GHGPSDTX240	12/27/2024	COMBUSTION TURBINES	NATURAL GAS	180.2	MW	Particulate matter, filterable < 10 Åµ (FPM10)	Pipeline quality natural gas and good combustion practices are used, which meets Tier I BACT. The turbines are proposed to meet 0.0075 lb/MMBtu total particulate matter. It is assumed that emissions of PM2.5 are equal to PM10, which are equal to total PM. No technically feasible post-combustion control technologies are available to reduce particulate matter emissions from gas turbines due to the large amount of excess air inherent to the turbine operation and would create an unacceptable amount of backpressure.	0			BACT-PSD	0		
*TX-0986	JACK COUNTY GENERATION FACILITY	TX	PSDTX1640,, GHGPSDTX240	12/27/2024	COMBUSTION TURBINES	NATURAL GAS	180.2	MW	Particulate matter, filterable < 2.5 Åµ (FPM2.5)	Pipeline quality natural gas and good combustion practices are used, which meets Tier I BACT. The turbines are proposed to meet 0.0075 lb/MMBtu total particulate matter. It is assumed that emissions of PM2.5 are equal to PM10, which are equal to total PM. No technically feasible post-combustion control technologies are available to reduce particulate matter emissions from gas turbines due to the large amount of excess air inherent to the turbine operation and would create an unacceptable amount of backpressure.	0			BACT-PSD	0		
*TX-0975	FREESTONE PEAKERS PLANT	TX	173582, PSDTX1626, GHGPSDTX233	6/13/2024	Simple Cycle Gas Turbines	NATURAL GAS	221	MW	Particulate matter, filterable (FPM)	Good combustion practices	0			BACT-PSD	0		
*TX-0975	FREESTONE PEAKERS PLANT	TX	173582, PSDTX1626, GHGPSDTX233	6/13/2024	Simple Cycle Gas Turbines	NATURAL GAS	221	MW	Particulate matter, filterable < 10 Åµ (FPM10)	Good combustion practices	0			BACT-PSD	0		
*TX-0975	FREESTONE PEAKERS PLANT	TX	173582, PSDTX1626, GHGPSDTX233	6/13/2024	Simple Cycle Gas Turbines	NATURAL GAS	221	MW	Particulate matter, filterable < 2.5 Åµ (FPM2.5)	Good combustion practices	0			BACT-PSD	0		
MI-0454	LBWL-ERICKSON STATION	MI	74-18D	12/20/2022	EUCTGSC1--A nominally rated 667 MMBTU/H natural gas-fired simple cycle CTG	Natural gas	667	MMBTU/H	Particulate matter, total < 2.5 Åµ (TPM2.5)	Pipeline quality natural gas, inlet air conditioning and good combustion practices.	4.5	LB/H	HOURLY	BACT-PSD	0		
MI-0454	LBWL-ERICKSON STATION	MI	74-18D	12/20/2022	EUCTGSC1--A nominally rated 667 MMBTU/H natural gas-fired simple cycle CTG	Natural gas	667	MMBTU/H	Particulate matter, total < 10 Åµ (TPM10)	Pipeline quality natural gas, inlet air conditioning and good combustion practices.	4.5	LB/H	HOURLY	BACT-PSD	0		
*TN-0187	TENNESSEE VALLEY AUTHORITY - JOHNSONVILLE COMBUSTION TURBINE	TN	979348	8/31/2022	Ten Simple Cycle NG Turbines	Natural Gas	465.8	MMBTU/hr	Particulate matter, total (TPM)	good combustion design and operating practices and the use of low sulfur fuel	3.65	LB/HR		BACT-PSD	0		
AK-0088	LIQUEFACTION PLANT	AK	AQ1539CPT01	7/7/2022	Six Simle Cycle Gas-Fired Turbines	Natural Gas	1113	MMBTU/hr	Particulate matter, total (TPM)	Good combustion practices and burning clean fuel (natural gas)	0.007	LB/MMBTU	3-HOURS	BACT-PSD	10	% OPACITY	

Table E-5
RACT/BACT/LAER Clearing House Summary for PM Emissions from Simple Cycle Natural Gas-Fired Turbines

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period
AK-0088	LIQUEFACTION PLANT	AK	AQ1539CPT01	7/7/2022	Six Simple Cycle Gas-Fired Turbines	Natural Gas	1113	MMBTU/hr	Particulate matter, total < 10 Åµ (TPM10)	Good combustion practices and burning clean fuel (natural gas)	0.007	LB/MMBTU	3-HOURS	BACT-PSD	10	% OPACITY	
AK-0088	LIQUEFACTION PLANT	AK	AQ1539CPT01	7/7/2022	Six Simple Cycle Gas-Fired Turbines	Natural Gas	1113	MMBTU/hr	Particulate matter, total < 2.5 Åµ (TPM2.5)	Good combustion practices and burning clean fuel (natural gas)	0.007	LB/MMBTU	3-HOURS	BACT-PSD	10	% OPACITY	
TX-0933	NACERO PENWELL FACILITY	TX	164137 PSDTX1594 GHGPSDTX207	11/17/2021	TURBINE	NATURAL GAS	0		Particulate matter, filterable (FPM)	good combustion practices and the use of gaseous fuel	0.0075	LB/MMBTU		BACT-PSD	0		
TX-0933	NACERO PENWELL FACILITY	TX	164137 PSDTX1594 GHGPSDTX207	11/17/2021	TURBINE	NATURAL GAS	0		Particulate matter, filterable < 10 Åµ (FPM10)	good combustion practices and the use of gaseous fuel	0.0075	LB/MMBTU		BACT-PSD	0		
TX-0933	NACERO PENWELL FACILITY	TX	164137 PSDTX1594 GHGPSDTX207	11/17/2021	TURBINE	NATURAL GAS	0		Particulate matter, filterable < 2.5 Åµ (FPM2.5)	good combustion practices and the use of gaseous fuel	0.0075	LB/MMBTU		BACT-PSD	0		
AL-0329	COLBERT COMBUSTION TURBINE PLANT	AL	701-0010	9/21/2021	Three 229 MW Simple Cycle Combustion Turbines	Natural Gas	229	MW	Particulate matter, total < 10 Åµ (TPM10)		0.008	LB/MMBTU	3 HOUR AVG	BACT-PSD	18	LB/HR	
AL-0329	COLBERT COMBUSTION TURBINE PLANT	AL	701-0010	9/21/2021	Three 229 MW Simple Cycle Combustion Turbines	Natural Gas	229	MW	Particulate matter, total < 2.5 Åµ (TPM2.5)		0.008	LB/MMBTU	3 HOUR AVG	BACT-PSD	18	LB/HR	
MI-0447	LBWL--ERICKSON STATION	MI	74-18A	1/7/2021	EUCTGSC1-natural gas fired simple cycle CTG	Natural gas	667	MMBTU/H	Particulate matter, total < 2.5 Åµ (TPM2.5)	Pipeline quality natural gas, inlet air conditioning and good combustion practices.	4.5	LB/H	HOURLY	BACT-PSD	0		
MI-0447	LBWL--ERICKSON STATION	MI	74-18A	1/7/2021	EUCTGSC1-natural gas fired simple cycle CTG	Natural gas	667	MMBTU/H	Particulate matter, total < 10 Åµ (TPM10)	Pipeline quality natural gas, inlet air conditioning and good combustion practices.	4.5	LB/H	HOURLY	BACT-PSD	0		
LA-0383	LAKE CHARLES LNG EXPORT TERMINAL	LA	PSD-LA-838	9/3/2020	Turbines (EQT0020 - EQT0031)	Natural gas	0		Particulate matter, total < 10 Åµ (TPM10)	Good combustion practices and clean natural gas	0			BACT-PSD	0		
LA-0383	LAKE CHARLES LNG EXPORT TERMINAL	LA	PSD-LA-838	9/3/2020	Turbines (EQT0020 - EQT0031)	Natural gas	0		Particulate matter, total < 2.5 Åµ (TPM2.5)	Good combustion practices and clean natural gas	0			BACT-PSD	0		
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	Six (6) Simple Cycle Gas-Turbines (Power Generation)	Natural Gas	386	MMBTU/hr	Particulate matter, total (TPM)	Good Combustion Practices and burning clean fuels (NG)	0.007	LB/MMBTU	3-HOUR AVERAGE	BACT-PSD	0		
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	Six (6) Simple Cycle Gas-Turbines (Power Generation)	Natural Gas	386	MMBTU/hr	Particulate matter, total < 10 Åµ (TPM10)	Good Combustion Practices and burning clean fuels (NG)	0.007	LB/MMBTU	3-HOUR AVERAGE	BACT-PSD	0		
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	Six (6) Simple Cycle Gas-Turbines (Power Generation)	Natural Gas	386	MMBTU/hr	Particulate matter, total < 2.5 Åµ (TPM2.5)	Good Combustion Practices and burning clean fuels (NG)	0.007	LB/MMBTU	3-HOUR AVERAGE	BACT-PSD	0		
MI-0441	LBWL--ERICKSON STATION	MI	74-18	12/21/2018	EUCTGSC1-A nominally rated 667 MMBTU/hr natural gas-fired simple cycle CTG	Natural gas	667	MMBTU/H	Particulate matter, total < 2.5 Åµ (TPM2.5)	Pipeline quality natural gas, inlet air conditioning and good combustion practices.	4.5	LB/H	HOURLY	BACT-PSD	0		

Table E-5
RACT/BACT/LAER Clearing House Summary for PM Emissions from Simple Cycle Natural Gas-Fired Turbines

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period
MI-0441	LBWL--ERICKSON STATION	MI	74-18	12/21/2018	EUCTGSC1-A nominally rated 667 MMBTU/hr natural gas-fired simple cycle CTG	Natural gas	667	MMBTU/H	Particulate matter, total < 10 Åµ (TPM10)	Pipeline quality natural gas, inlet air conditioning and good combustion practices.	4.5	LB/H	HOURLY	BACT-PSD	0		
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Aeroderivative Simple Cycle Combustion Turbine	Natural Gas	263	MM BTU/h	Particulate matter, total < 10 Åµ (TPM10)	Exclusive Combustion of Fuel Gas, Good Combustion Practices Including Proper Burner Design.	4.5	LB/H	3 HOUR AVERAGE	BACT-PSD	0		
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Aeroderivative Simple Cycle Combustion Turbine	Natural Gas	263	MM BTU/h	Particulate matter, total < 2.5 Åµ (TPM2.5)	Exclusive Combustion of Fuel Gas, Good Combustion Practices Including Proper Burner Design.	4.5	LB/H	3 HOUR AVERAGE	BACT-PSD	0		
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Simple Cycle Combustion Turbines (SCCT1 to SCCT3)	Natural Gas	927	MM BTU/h	Particulate matter, total < 10 Åµ (TPM10)	Exclusive Combustion of Fuel Gas and Good Combustion Practices, Including Proper Burner Design.	8	LB/H	3 HOUR AVERAGE	BACT-PSD	0		
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Simple Cycle Combustion Turbines (SCCT1 to SCCT3)	Natural Gas	927	MM BTU/h	Particulate matter, total < 2.5 Åµ (TPM2.5)	Exclusive Combustion of Fuel Gas and Good Combustion Practices, Including Proper Burner Design.	8	LB/H	3 HOUR AVERAGE	BACT-PSD	0		
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG01 CO - Simple-Cycle Combustion Turbine 1 (Commissioning) [SCN0005]	Natural Gas	2201	MM BTU/hr	Particulate matter, total < 10 Åµ (TPM10)	Good combustion practices and the use of low sulfur fuels (pipeline quality natural gas)	6.3	LB/HR	HOURLY MAXIMUM	BACT-PSD	1.1	TONS/YR	
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG01 CO - Simple-Cycle Combustion Turbine 1 (Commissioning) [SCN0005]	Natural Gas	2201	MM BTU/hr	Particulate matter, total < 2.5 Åµ (TPM2.5)	Good combustion practices and the use of low sulfur fuels (pipeline quality natural gas)	6.3	LB/HR	HOURLY MAXIMUM	BACT-PSD	1.1	TONS/YR	
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG02 CO - Simple-Cycle Combustion Turbine 2 (Commissioning) [SCN0006]	natural gas	2201	MM BTU/hr	Particulate matter, total < 10 Åµ (TPM10)	Good combustion practices and the use of low sulfur fuels (pipeline quality natural gas)	6.3	LB/HR	HOURLY MAXIMUM	BACT-PSD	1.1	TONS/YR	
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG02 CO - Simple-Cycle Combustion Turbine 2 (Commissioning) [SCN0006]	natural gas	2201	MM BTU/hr	Particulate matter, total < 2.5 Åµ (TPM2.5)	Good combustion practices and the use of low sulfur fuels (pipeline quality natural gas)	6.3	LB/HR	HOURLY MAXIMUM	BACT-PSD	1.1	TONS/YR	
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG01 SUSD - Simple-Cycle Combustion Turbine 1 (Startup/Shutdown/Maintenance/Tuning/Runback) [EQT0019]	Natural Gas	2201	MM BTU/hr	Particulate matter, total < 2.5 Åµ (TPM2.5)	Good combustion practices and the use of low sulfur fuels (pipeline quality natural gas)	6.3	LB/HR	HOURLY MAXIMUM	BACT-PSD	0		
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG01 SUSD - Simple-Cycle Combustion Turbine 1 (Startup/Shutdown/Maintenance/Tuning/Runback) [EQT0019]	Natural Gas	2201	MM BTU/hr	Particulate matter, total < 10 Åµ (TPM10)	Good combustion practices and the use of low sulfur fuels (pipeline quality natural gas)	6.3	LB/HR	HOURLY MAXIMUM	BACT-PSD	0		
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG02 SUSD - Simple-Cycle Combustion Turbine 2 (Startup/Shutdown/Maintenance/Tuning/Runback) [EQT0020]	Natural Gas	2201	MM BTU/hr	Particulate matter, total < 2.5 Åµ (TPM2.5)	Good combustion practices and the use of low sulfur fuels (pipeline quality natural gas)	6.3	LB/HR	HOURLY MAXIMUM	BACT-PSD	0		
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG02 SUSD - Simple-Cycle Combustion Turbine 2 (Startup/Shutdown/Maintenance/Tuning/Runback) [EQT0020]	Natural Gas	2201	MM BTU/hr	Particulate matter, total < 10 Åµ (TPM10)	Good combustion practices and the use of low sulfur fuels (pipeline quality natural gas)	6.3	LB/HR	HOURLY MAXIMUM	BACT-PSD	0		
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG01 NO - Simple-Cycle Combustion Turbine 1 (Normal Operations) [EQT0017]	Natural Gas	2201	MM BTU/hr	Particulate matter, total < 10 Åµ (TPM10)	Good combustion practices and the use of low sulfur fuels (pipeline quality natural gas)	6.3	LB/HR	HOURLY MAXIMUM	BACT-PSD	0		
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG01 NO - Simple-Cycle Combustion Turbine 1 (Normal Operations) [EQT0017]	Natural Gas	2201	MM BTU/hr	Particulate matter, total < 2.5 Åµ (TPM2.5)	Good combustion practices & use of low sulfur fuels (pipeline quality natural gas)	6.3	LB/HR	HOURLY MAXIMUM	BACT-PSD	0		

Table E-5
RACT/BACT/LAER Clearing House Summary for PM Emissions from Simple Cycle Natural Gas-Fired Turbines

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG02 NO - Simple-Cycle Combustion Turbine 2 (Normal Operations) [EQT0018]	Natural Gas	2201	MM BTU/hr	Particulate matter, total < 10 Åµ (TPM10)	Good combustion practices and the use of low sulfur fuels (pipeline quality natural gas)	6.3	LB/HR	HOURLY MAXIMUM	BACT-PSD	0		
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG02 NO - Simple-Cycle Combustion Turbine 2 (Normal Operations) [EQT0018]	Natural Gas	2201	MM BTU/hr	Particulate matter, total < 2.5 Åµ (TPM2.5)	Good combustion practices & use of low sulfur fuels (pipeline quality natural gas)	6.3	LB/HR	HOULY MAXIMUM	BACT-PSD	0		
WV-0028	WAVERLY POWER PLANT	WV	R14-0034A	3/13/2018	GE 7FA.004 Turbine	Natural Gas	167.8	MW	Particulate matter, total < 2.5 Åµ (TPM2.5)	Inlet air filtration.	15.09	LB/HR		BACT-PSD	41.65	TONS/YEAR	
TX-0833	JACKSON COUNTY GENERATORS	TX	PSDTX1422	1/26/2018	Combustion Turbines	natural gas	920	MW	Particulate matter, filterable (FPM)	Use of pipeline quality natural gas and good combustion practices.	11.81	TON/YR		BACT-PSD	0		
TX-0833	JACKSON COUNTY GENERATORS	TX	PSDTX1422	1/26/2018	Combustion Turbines	natural gas	920	MW	Particulate matter, total < 10 Åµ (TPM10)	Use of pipeline quality natural gas and good combustion practices.	11.81	TON/YR		BACT-PSD	0		
TX-0833	JACKSON COUNTY GENERATORS	TX	PSDTX1422	1/26/2018	Combustion Turbines	natural gas	920	MW	Particulate matter, total < 2.5 Åµ (TPM2.5)	Use of pipeline quality natural gas and good combustion practices.	11.81	TON/YR		BACT-PSD	0		
TX-0833	JACKSON COUNTY GENERATORS	TX	PSDTX1422	1/26/2018	Combustion Turbines MSS	NATURAL GAS	0		Particulate matter, total (TPM)	Minimizing duration of startup/shutdown, using good air pollution control practices and safe operating practices.	0.01	TON/YR		BACT-PSD	0		
TX-0833	JACKSON COUNTY GENERATORS	TX	PSDTX1422	1/26/2018	Combustion Turbines MSS	NATURAL GAS	0		Particulate matter, total < 10 Åµ (TPM10)	Minimizing duration of startup/shutdown, using good air pollution control practices and safe operating practices.	0.01	TON/YR		BACT-PSD	0		
TX-0833	JACKSON COUNTY GENERATORS	TX	PSDTX1422	1/26/2018	Combustion Turbines MSS	NATURAL GAS	0		Particulate matter, total < 2.5 Åµ (TPM2.5)	Minimizing duration of startup/shutdown, using good air pollution control practices and safe operating practices.	0.01	TON/YR		BACT-PSD	0		
TX-0826	MUSTANG STATION	TX	72579, PSDTX1080M1, GHGPSDTX13	8/16/2017	Simple Cycle Turbine	NATURAL GAS	162.8	MW	Particulate matter, total < 10 Åµ (TPM10)	Pipeline quality natural gas and good combustion practices	27	T/YR		BACT-PSD	0		
TX-0826	MUSTANG STATION	TX	72579, PSDTX1080M1, GHGPSDTX13	8/16/2017	Simple Cycle Turbine	NATURAL GAS	162.8	MW	Particulate matter, total < 2.5 Åµ (TPM2.5)	Pipeline quality natural gas and good combustion practices	27	T/YR		BACT-PSD	0		
TX-0819	GAINES COUNTY POWER PLANT	TX	135322, PSDTX1470, AND GHGPSDT	4/28/2017	Simple Cycle Turbine	natural gas	227.5	MW	Particulate matter, total (TPM)	Pipeline quality natural gas; limited hours; good combustion practices	8.5	T/YR		BACT-PSD	0		
TX-0819	GAINES COUNTY POWER PLANT	TX	135322, PSDTX1470, AND GHGPSDT	4/28/2017	Simple Cycle Turbine	natural gas	227.5	MW	Particulate matter, total < 10 Åµ (TPM10)	Pipeline quality natural gas; limited hours; good combustion practices	8.5	T/YR		BACT-PSD	0		
TX-0819	GAINES COUNTY POWER PLANT	TX	135322, PSDTX1470, AND GHGPSDT	4/28/2017	Simple Cycle Turbine	natural gas	227.5	MW	Particulate matter, total < 2.5 Åµ (TPM2.5)	Pipeline quality natural gas; limited hours; good combustion practices	8.5	T/YR		BACT-PSD	0		
IN-0261	VERMILLION GENERATING STATION	IN	165-36956-00022	2/28/2017	SIMPLE CYCLE, NATURAL GAS FIRED COMBUSTION TURBINES	NATURAL GAS	80	MW	Particulate matter, filterable (FPM)	GOOD COMBUSTION PRACTICES	5	LB/H	EACH TURBINE	BACT-PSD	0.5	TON/12 CONSEC. MONTH	

Table E-5
RACT/BACT/LAER Clearing House Summary for PM Emissions from Simple Cycle Natural Gas-Fired Turbines

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period
IN-0261	VERMILLION GENERATING STATION	IN	165-36956-00022	2/28/2017	SIMPLE CYCLE, NATURAL GAS FIRED COMBUSTION TURBINES	NATURAL GAS	80	MW	Particulate matter, filterable < 10 Åµ (FPM10)	GOOD COMBUSTION PRACTICES	5	LB/H	EACH TURBINE	BACT-PSD	0.5	TON/12 CONSEC. MONTH	
IN-0261	VERMILLION GENERATING STATION	IN	165-36956-00022	2/28/2017	SIMPLE CYCLE, NATURAL GAS FIRED COMBUSTION TURBINES	NATURAL GAS	80	MW	Particulate matter, total < 2.5 Åµ (TPM2.5)	GOOD COMBUSTION PRACTICES	5	LB/H	EACH TURBINE	BACT-PSD	0.5	TON/12 CONSEC. MONTH	
LA-0316	CAMERON LNG FACILITY	LA	PSD-LA-766(M3)	2/17/2017	Gas turbines (9 units)	natural gas	1069	mm btu/hr	Particulate matter, total < 10 Åµ (TPM10)	good combustion practices and fueled by natural gas	0.0076	LB/MM BTU	THREE ONE-HOUR TEST AVERAGE	BACT-PSD	0		
LA-0316	CAMERON LNG FACILITY	LA	PSD-LA-766(M3)	2/17/2017	Gas turbines (9 units)	natural gas	1069	mm btu/hr	Particulate matter, total < 2.5 Åµ (TPM2.5)	good combustion practices and fueled by natural gas	0.0076	LB/MM BTU	THREE ONE-HOUR TEST AVERAGE	BACT-PSD	0		
WV-0026	WAVERLY FACILITY	WV	R14-0034	1/23/2017	GE Model 7FA Turbine	Natural Gas	1571	mmbtu/hr	Particulate matter, total < 2.5 Åµ (TPM2.5)	Inlet Air Filtration, Use of Natural Gas, Ultra-Low Sulfur Diesel	15	LB/HR	NATURAL GAS	BACT-PSD	39	LB/HR	
IN-0264	MONTPELIER GENERATING STATION	IN	179-37209-00026	1/6/2017	PRATT & TWIN-PAC SIMPLE CYCLE TURBINES	NATURAL GAS	270.9	MMBTU/H	Particulate matter, filterable < 10 Åµ (FPM10)	USE NATURAL GAS AS PRIMARY FUEL; GOOD COMBUSTION PRACTICES	0.0066	LB/MMBTU	3-HR AVG FOR NATURAL GAS	BACT-PSD	0.012	LB/MMBTU	
IN-0264	MONTPELIER GENERATING STATION	IN	179-37209-00026	1/6/2017	PRATT & TWIN-PAC SIMPLE CYCLE TURBINES	NATURAL GAS	270.9	MMBTU/H	Particulate matter, total < 2.5 Åµ (TPM2.5)	NATURAL GAS PRIMARY FUEL; GOOD COMBUSTION PRACTICES	0.0066	LB/MMBTU	3-HR AVG FOR NATURAL GAS	BACT-PSD	0.012	LB/MMBTU	
VA-0326	DOSWELL ENERGY CENTER	VA	51018	10/4/2016	Two (2) GE 7FA simple cycle combustion turbines	Natural Gas	1961	MMBTU/HR	Particulate matter, filterable (FPM)	Good combustion, operation and maintenance practices and use of pipeline quality natural gas	10	LB	H/12 MO ROLLING TOTAL	BACT-PSD	12.5	T	
VA-0326	DOSWELL ENERGY CENTER	VA	51018	10/4/2016	Two (2) GE 7FA simple cycle combustion turbines	Natural Gas	1961	MMBTU/HR	Particulate matter, filterable < 10 Åµ (FPM10)	Good combustion, operation and maintenance practices and use of pipeline quality natural gas	12	LB	H/12 MO ROLLING TOTAL	BACT-PSD	15	T	
VA-0326	DOSWELL ENERGY CENTER	VA	51018	10/4/2016	Two (2) GE 7FA simple cycle combustion turbines	Natural Gas	1961	MMBTU/HR	Particulate matter, total < 2.5 Åµ (TPM2.5)	Good combustion, operation and maintenance practices and use of pipeline quality natural gas	12	LB	H/12 MO ROLLING TOTAL	BACT-PSD	15	T	
IL-0121	INVENERGY NELSON EXPANSION LLC	IL	15060042	9/27/2016	Two Simple Cycle Combustion Turbines	Natural Gas	190	MW	Particulate matter, filterable (FPM)	turbine design and good combustion practices	0.0038	LB/MMBTU	3-HOUR BLOCK AVERAGE	BACT-PSD	0.015	LB/MMBTU	
IL-0121	INVENERGY NELSON EXPANSION LLC	IL	15060042	9/27/2016	Two Simple Cycle Combustion Turbines	Natural Gas	190	MW	Particulate matter, total < 10 Åµ (TPM10)	turbine design and good combustion practices	0.005	LB/MMBTU	3-HOUR BLOCK AVERAGE	BACT-PSD	0.02	LB/MMBTU	
IL-0121	INVENERGY NELSON EXPANSION LLC	IL	15060042	9/27/2016	Two Simple Cycle Combustion Turbines	Natural Gas	190	MW	Particulate matter, total < 2.5 Åµ (TPM2.5)	turbine design and good combustion practices	0.005	LB/MMBTU	3-HOUR BLOCK AVERAGE	BACT-PSD	0.02	LB/MMBTU	
NY-0106	GREENIDGE STATION	NY	8-5736-00004/00017	9/7/2016	Turbine - natural gas	natural gas	107	MW	Particulate matter, filterable < 2.5 Åµ (FPM2.5)	Baghouse with leak detection system.	8.25	E-3 LB/MMBTU	1 H	BACT-PSD	0		

Table E-5
RACT/BACT/LAER Clearing House Summary for PM Emissions from Simple Cycle Natural Gas-Fired Turbines

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period
NY-0106	GREENIDGE STATION	NY	8-5736-00004/00017	9/7/2016	Turbine - natural gas	natural gas	107	MW	Particulate matter, filterable < 10 Åµ (FPM10)	Baghouse with leak detection system.	8.25	E-3 LB/MMBTU	1 H	BACT-PSD	0		
NY-0106	GREENIDGE STATION	NY	8-5736-00004/00017	9/7/2016	Turbine - natural gas	natural gas	107	MW	Particulate matter, filterable (FPM)	Baghouse with leak detection system.	0.002	LB/MMBTU	1 H	BACT-PSD	0		
NY-0106	GREENIDGE STATION	NY	8-5736-00004/00017	9/7/2016	Turbine - natural gas and wood	natural gas and up to 19% wood	107	MW	Particulate matter, filterable < 2.5 Åµ (FPM2.5)	Baghouse with leak detection system.	0.031	LB/MMBTU	1 H	BACT-PSD	0		
NY-0106	GREENIDGE STATION	NY	8-5736-00004/00017	9/7/2016	Turbine - natural gas and wood	natural gas and up to 19% wood	107	MW	Particulate matter, filterable < 10 Åµ (FPM10)	Baghouse with leak detection system.	0.031	LB/MMBTU	1 H	BACT-PSD	0		
NY-0106	GREENIDGE STATION	NY	8-5736-00004/00017	9/7/2016	Turbine - natural gas and wood	natural gas and up to 19% wood	107	MW	Particulate matter, filterable (FPM)	Baghouse with leak detection system.	0.01	LB/MMBTU	1 H	BACT-PSD	0		
NJ-0086	BAYONNNE ENERGY CENTER	NJ	12863-BOP150001	8/26/2016	Simple Cycle Stationary Turbines firing Natural gas	Natural Gas	2143980	MMBTU/YR	Particulate matter, filterable (FPM)	Use of Natural gas a clean burning fuel	5	LB/H	AV OF THREE ONE H STACK TESTS EVERY 5 YR	OTHER CASE-BY-CASE	0		
NJ-0086	BAYONNNE ENERGY CENTER	NJ	12863-BOP150001	8/26/2016	Simple Cycle Stationary Turbines firing Natural gas	Natural Gas	2143980	MMBTU/YR	Particulate matter, total < 10 Åµ (TPM10)	Use of Natural gas a clean burning fuel	5	LB/H	AV OF THREE ONE H STACK TESTS EVERY 5 YR	OTHER CASE-BY-CASE	0		
NJ-0086	BAYONNNE ENERGY CENTER	NJ	12863-BOP150001	8/26/2016	Simple Cycle Stationary Turbines firing Natural gas	Natural Gas	2143980	MMBTU/YR	Particulate matter, total < 2.5 Åµ (TPM2.5)	Use of natural gas a clean burning fuel	5	LB/H	AV OF THREE ONE H STACK TESTS EVERY 5 YR	OTHER CASE-BY-CASE	0		
NJ-0086	BAYONNNE ENERGY CENTER	NJ	12863-BOP150001	8/26/2016	Simple Cycle Stationary Turbines firing Ultra Low Sulfur Distillate Oil	Ultra Low Sulfur Distillate Oil	720	H/YR	Particulate matter, filterable (FPM)	Use of ULSD, a clean burning fuel	14	LB/H	AV OF THREE ONE H STACK TESTS EVERY 5 YR	OTHER CASE-BY-CASE	0		
NJ-0086	BAYONNNE ENERGY CENTER	NJ	12863-BOP150001	8/26/2016	Simple Cycle Stationary Turbines firing Ultra Low Sulfur Distillate Oil	Ultra Low Sulfur Distillate Oil	720	H/YR	Particulate matter, total < 10 Åµ (TPM10)	Use of ULSD a clean burning fuel	14	LB/H	AV OF THREE ONE H STACK TESTS EVERY 5 YR	OTHER CASE-BY-CASE	0		
NJ-0086	BAYONNNE ENERGY CENTER	NJ	12863-BOP150001	8/26/2016	Simple Cycle Stationary Turbines firing Ultra Low Sulfur Distillate Oil	Ultra Low Sulfur Distillate Oil	720	H/YR	Particulate matter, total < 2.5 Åµ (TPM2.5)	Use of ULSD, a clean burning fuel	14	LB/H	AV OF THREE ONE H STACK TESTS EVERY 5 YR	OTHER CASE-BY-CASE	0		
TX-0794	HILL COUNTY GENERATING FACILITY	TX	130051,PSDTX1450, GHGSPSDTX131	4/7/2016	Simple cycle turbine	natural gas	171	MW	Particulate matter, total < 10 Åµ (TPM10)	Premixing of fuel and air enhances combustion efficiency and minimizes emissions.	14	LB/H		BACT-PSD	0		
TX-0794	HILL COUNTY GENERATING FACILITY	TX	130051,PSDTX1450, GHGSPSDTX131	4/7/2016	Simple cycle turbine	natural gas	171	MW	Particulate matter, total < 2.5 Åµ (TPM2.5)	Premixing of fuel and air enhances combustion efficiency and minimizes emissions.	14	LB/H		BACT-PSD	0		
TX-0794	HILL COUNTY GENERATING FACILITY	TX	130051,PSDTX1450, GHGSPSDTX131	4/7/2016	Simple Cycle Turbine	ULTRA LOW SULFUR DIESEL	171	MW	Particulate matter, total < 10 Åµ (TPM10)	combustor designed for complete combustion and therefore minimizes emissions	9.8	LB/H		BACT-PSD	0		

Table E-5
RACT/BACT/LAER Clearing House Summary for PM Emissions from Simple Cycle Natural Gas-Fired Turbines

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period
TX-0794	HILL COUNTY GENERATING FACILITY	TX	130051, PSDTX1450, GHGSPSDTX131	4/7/2016	Simple Cycle Turbine	ULTRA LOW SULFUR DIESEL	171	MW	Particulate matter, total < 2.5 Åµ (TPM2.5)	combustor designed for complete combustion and therefore minimizes emissions	9.8	LB/H	3-HR ROLLING AVERAGE	BACT-PSD	0		
TX-0788	NECHES STATION	TX	122401, PSDTX1428, GHGSPSDTX111	3/24/2016	Large Combustion Turbines > 25 MW	natural gas	232	MW	Particulate matter, total < 10 Åµ (TPM10)	good combustion practices, low sulfur fuel	13.4	LB/H		BACT-PSD	0		
TX-0788	NECHES STATION	TX	122401, PSDTX1428, GHGSPSDTX111	3/24/2016	Large Combustion Turbines > 25 MW	natural gas	232	MW	Particulate matter, total < 2.5 Åµ (TPM2.5)	good combustion practices, low sulfur fuel	13.4	LB/H		BACT-PSD	0		
LA-0307	MAGNOLIA LNG FACILITY	LA	PSD-LA-792	3/21/2016	Gas Turbines (8 units)	natural gas	333	mm btu/hr	Particulate matter, total < 10 Åµ (TPM10)	good combustion practices and fueled by natural gas	0			BACT-PSD	0		
LA-0307	MAGNOLIA LNG FACILITY	LA	PSD-LA-792	3/21/2016	Gas Turbines (8 units)	natural gas	333	mm btu/hr	Particulate matter, filterable < 2.5 Åµ (FPM2.5)	good combustion practices and fueled by natural gas	0			BACT-PSD	0		
TX-0777	UNION VALLEY ENERGY CENTER	TX	120973 AND PSDTX1420	12/9/2015	Simple Cycle Turbine	natural gas	183	MW	Particulate matter, total < 10 Åµ (TPM10)	pipeline quality natural gas, good combustion practices	8.6	LB/H		BACT-PSD	0		
TX-0777	UNION VALLEY ENERGY CENTER	TX	120973 AND PSDTX1420	12/9/2015	Simple Cycle Turbine	natural gas	183	MW	Particulate matter, total < 2.5 Åµ (TPM2.5)	pipeline quality natural gas, good combustion practices	8.6	LB/H		BACT-PSD	0		
TX-0769	VAN ALSTYNE ENERGY CENTER (VAEC)	TX	121051 AND PSDTX1418	10/27/2015	Simple Cycle Turbine	natural gas	183	MW	Particulate matter, total < 10 Åµ (TPM10)	Pipeline Quality Natural Gas	8.6	LB/H		BACT-PSD	0		
TX-0769	VAN ALSTYNE ENERGY CENTER (VAEC)	TX	121051 AND PSDTX1418	10/27/2015	Simple Cycle Turbine	natural gas	183	MW	Particulate matter, total < 2.5 Åµ (TPM2.5)	Pipeline Quality Natural Gas	8.6	LB/H		BACT-PSD	0		
TX-0764	NACOGDOCHES POWER ELECTRIC GENERATING PLANT	TX	77679, PSDTX1061M1 & O-3455	10/14/2015	Natural Gas Simple Cycle Turbine (>25 MW)	natural gas	232	MW	Particulate matter, total (TPM)	Pipeline quality natural gas; limited hours; good combustion practices.	12.09	LB/HR		BACT-PSD	12.94	TPY	
TX-0764	NACOGDOCHES POWER ELECTRIC GENERATING PLANT	TX	77679, PSDTX1061M1 & O-3455	10/14/2015	Natural Gas Simple Cycle Turbine (>25 MW)	natural gas	232	MW	Particulate matter, total < 10 Åµ (TPM10)	Pipeline quality natural gas; limited hours; good combustion practices.	12.09	LB/HR		BACT-PSD	12.94	TPY	
TX-0764	NACOGDOCHES POWER ELECTRIC GENERATING PLANT	TX	77679, PSDTX1061M1 & O-3455	10/14/2015	Natural Gas Simple Cycle Turbine (>25 MW)	natural gas	232	MW	Particulate matter, total < 2.5 Åµ (TPM2.5)	Pipeline quality natural gas; limited hours; good combustion practices.	12.09	LB/HR		BACT-PSD	12.94	TPY	
TX-0768	SHAWNEE ENERGY CENTER	TX	PSDXT1442, 125963	10/9/2015	Simple cycle turbines greater than 25 megawatts (MW)	natural gas	230	MW	Particulate matter, total < 10 Åµ (TPM10)	Pipeline quality natural gas; limited hours; good combustion practices.	84.1	LB/HR		BACT-PSD	152.96	TPY	
TX-0768	SHAWNEE ENERGY CENTER	TX	PSDXT1442, 125963	10/9/2015	Simple cycle turbines greater than 25 megawatts (MW)	natural gas	230	MW	Particulate matter, total < 2.5 Åµ (TPM2.5)	Pipeline quality natural gas; limited hours; good combustion practices.	84.1	LB/HR		BACT-PSD	152.96	TPY	
FL-0355	FORT MYERS PLANT	FL	0710002-022-AC	9/10/2015	Combustion Turbines	Natural gas	2262.4	MMBtu/hr gas	Particulate matter, total (TPM)	Use of clean fuels, and annual VE test	2	GR S / 100 SCF GAS	FOR NATURAL GAS	BACT-PSD	0.0015	% S IN ULSD	
FL-0355	FORT MYERS PLANT	FL	0710002-022-AC	9/10/2015	Combustion Turbines	Natural gas	2262.4	MMBtu/hr gas	Particulate matter, total < 10 Åµ (TPM10)	Use of clean fuels	2	GR S / 100 SCF GAS	FOR NATURAL GAS	BACT-PSD	0.0015	% S IN ULSD	

Table E-5
RACT/BACT/LAER Clearing House Summary for PM Emissions from Simple Cycle Natural Gas-Fired Turbines

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period
FL-0355	FORT MYERS PLANT	FL	0710002-022-AC	9/10/2015	Combustion Turbines	Natural gas	2262.4	MMBtu/hr gas	Particulate matter, total < 2.5 Åµ (TPM2.5)	Use of clean fuels	2	GR S / 100 SCF GAS	FOR NATURAL GAS	BACT-PSD	0.0015	% S IN ULSD	
FL-0354	LAUDERDALE PLANT	FL	0110037-013-AC	8/25/2015	Five 200-MW combustion turbines	Natural gas	2100	MMBtu/hr (approx)	Particulate matter, total (TPM)	Clean fuel prevents PM formation	2	GR. S / 100 SCF GAS	FUEL RECORD KEEPING	BACT-PSD	0.0015	% S IN FUEL OIL	
FL-0354	LAUDERDALE PLANT	FL	0110037-013-AC	8/25/2015	Five 200-MW combustion turbines	Natural gas	2100	MMBtu/hr (approx)	Particulate matter, total < 10 Åµ (TPM10)	Clean fuel prevents PM formation	2	GR. S / 100 SCF	FUEL RECORD KEEPING	BACT-PSD	0.0015	% S IN ULSD	
FL-0354	LAUDERDALE PLANT	FL	0110037-013-AC	8/25/2015	Five 200-MW combustion turbines	Natural gas	2100	MMBtu/hr (approx)	Particulate matter, total < 2.5 Åµ (TPM2.5)	Clean fuel prevents PM formation	2	GR. S / 100 SCF	FUEL RECORD KEEPING	BACT-PSD	0.0015	% S IN ULSD	
TX-0733	ANTELOPE ELK ENERGY CENTER	TX	109148, PSDTX1358M1	5/12/2015	Simple Cycle Turbine & Generator	natural gas	202	MW	Particulate matter, total < 2.5 Åµ (TPM2.5)	Pipeline quality natural gas; limited hours; good combustion practices.	0			BACT-PSD	0		
TX-0733	ANTELOPE ELK ENERGY CENTER	TX	109148, PSDTX1358M1	5/12/2015	Simple Cycle Turbine & Generator	natural gas	202	MW	Particulate matter, total < 10 Åµ (TPM10)	Pipeline quality natural gas; limited hours; good combustion practices.	0			BACT-PSD	0		
TX-0733	ANTELOPE ELK ENERGY CENTER	TX	109148, PSDTX1358M1	5/12/2015	Simple Cycle Turbine & Generator	natural gas	202	MW	Particulate matter, total (TPM)	Pipeline quality natural gas; limited hours; good combustion practices.	0			BACT-PSD	0		
TX-0694	INDECK WHARTON ENERGY CENTER	TX	111724 PSDTX1374	2/2/2015	(3) combustion turbines	natural gas	220	MW	Particulate matter, total < 2.5 Åµ (TPM2.5)		0			BACT-PSD	0		

Table E-6
RACT/BACT/LAER Clearing House Summary for CO2e Emissions from Simple Cycle Natural Gas-Fired Turbines

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Standard Emission Limit	Standard Emission Limit Units	Standard Emission Limit Averaging Period
*TX-0986	JACK COUNTY GENERATION FACILITY	TX	PSDTX1640 GHGSPSDTX240	12/27/2024	COMBUSTION TURBINES	NATURAL GAS	180.2	MW	Carbon Dioxide Equivalent (CO2e)	JCP proposes an output-based standard of 1,400 lb/MW-hr on an annual average, or an input-based standard of 120 lb CO2/MMBtu on an annual average, achieved through energy efficient design and use of low carbon fuels. As stated above, the gas turbines are not subject to 40 CFR 60 Subpart TTTT or 40 CFR 60 Subpart TTTTa, which would require more stringent CO2e emission standards. An RBLC search was conducted to evaluate the applicant-proposed BACT, which showed that previous determinations for natural gas fired simple cycle turbines were between 800 and 1,707 lb/MW-hr, with most in the range of 1,300 and 1,450 lb/MW-hr.	0			BACT-PSD	0					
*TX-0975	FREESTONE PEAKERS PLANT	TX	173582, PSDTX1626, GHGSPSDTX233	6/13/2024	Simple Cycle Gas Turbines	NATURAL GAS	221	MW	Carbon Dioxide Equivalent (CO2e)	Good combustion practices	800	LB/MWH	BASE LOAD	BACT-PSD	0					
MI-0454	LBWL-ERICKSON STATION	MI	74-18D	12/20/2022	EUCTGSC1--A nominally rated 667 MMBTU/H natural gas-fired simple cycle CTG	Natural gas	667	MMBTU/H	Carbon Dioxide Equivalent (CO2e)	Low carbon fuel (pipeline quality natural gas), good combustion practices, and energy efficiency measures.	318404	T/YR	12-MO ROLLING TIME PERIOD	BACT-PSD	0					
*TN-0187	TENNESSEE VALLEY AUTHORITY - JOHNSONVILLE COMBUSTION TURBINE	TN	979348	8/31/2022	Ten Simple Cycle NG Turbines	Natural Gas	465.8	MMBTu/hr	Carbon Dioxide Equivalent (CO2e)	Efficient turbine operation and good combustion practices	120	LB/MMBTU		BACT-PSD	0					
AK-0088	LIQUEFACTION PLANT	AK	AQ1539CPT01	7/7/2022	Six Simle Cycle Gas-Fired Turbines	Natural Gas	1113	MMBTu/hr	Carbon Dioxide Equivalent (CO2e)	Good combustion practices and burning clean fuels (natural gas)	117.1	LB/MMBTU	3-HOURS	BACT-PSD	0					
TX-0933	NACERO PENWELL FACILITY	TX	164137 PSDTX1594 GHGSPSDTX207	11/17/2021	TURBINE	NATURAL GAS	0		Carbon Dioxide Equivalent (CO2e)	good combustion practices and the use of gaseous fuel	0			BACT-PSD	0					
LA-0383	LAKE CHARLES LNG EXPORT TERMINAL	LA	PSD-LA-838	9/3/2020	Turbines (EQT0020 - EQT0031)	Natural gas	0		Carbon Dioxide Equivalent (CO2e)	Low carbon fuels Energy efficient designs and operation	0			BACT-PSD	0					
TX-0900	ECTOR COUNTY ENERGY CENTER	TX	110423, PSDTX1366M1 GHGSPSD49M1	8/17/2020	Simple Cycle Turbines	natural gas	0		Carbon Dioxide Equivalent (CO2e)	Best management practices and good combustion practices, clean fuel	1514	LB/MWHR		BACT-PSD	0					
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	Six (6) Simple Cycle Gas-Turbines (Power Generation)	Natural Gas	386	MMBTu/hr	Carbon Dioxide Equivalent (CO2e)	Good combustion practices and clean burning fuel (NG)	117.1	LB/MMBTU	3-HOUR AVERAGE	BACT-PSD	0					
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Aeroderivative Simple Cycle Combustion Turbine	Natural Gas	263	MM BTU/h	Carbon Dioxide Equivalent (CO2e)	Combust low carbon fuel gas, good combustion practices, good operation and maintenance practices and insulation.	134907	T/YR	ANNUAL TOTAL	BACT-PSD	0					
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Simple Cycle Combustion Turbines (SCCT1 to SCCT3)	Natural Gas	927	MM BTU/h	Carbon Dioxide Equivalent (CO2e)	Exclusively combust low carbon fuel gas, good combustion practices, good operation and maintenance practices, and insulation	1426146	T/YR	ANNUAL TOTAL	BACT-PSD	0					
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG01 SUSD - Simple-Cycle Combustion Turbine 1 (Startup/Shutdown/ Maintenance/Tuning/Runback) [EQT0019]	Natural Gas	2201	MM BTU/hr	Carbon Dioxide Equivalent (CO2e)	Facility-wide energy efficiency measures , such as improved combustion measures, and use of pipeline quality natural gas.	120	LB/MM BTU	ANNUAL AVERAGE	BACT-PSD	50	KG/GJ				
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG02 SUSD - Simple-Cycle Combustion Turbine 2 (Startup/Shutdown/ Maintenance/Tuning/Runback) [EQT0020]	Natural Gas	2201	MM BTU/hr	Carbon Dioxide Equivalent (CO2e)	Facility-wide energy efficiency measures , such as improved combustion measures, and use of pipeline quality natural gas.	120	LB/MM BTU	ANNUAL AVERAGE	BACT-PSD	50	KG/GJ				
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG01 NO - Simple-Cycle Combustion Turbine 1 (Normal Operations) [EQT0017]	Natural Gas	2201	MM BTU/hr	Carbon Dioxide Equivalent (CO2e)	Facility-wide energy efficiency measures , such as improved combustion measures, and use of pipeline quality natural gas.	50	KG/GJ	ANNUAL AVERAGE	BACT-PSD	120	LB/MM BTU				

Table E-6
RACT/BACT/LAER Clearing House Summary for CO2e Emissions from Simple Cycle Natural Gas-Fired Turbines

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Standard Emission Limit	Standard Emission Limit Units	Standard Emission Limit Averaging Period
*LA-0327	WASHINGTON PARISH ENERGY CENTER	LA	PSD-LA-829	5/23/2018	CTG02 NO - Simple-Cycle Combustion Turbine 2 (Normal Operations) [EQT0018]	Natural Gas	2201	MM BTU/hr	Carbon Dioxide Equivalent (CO2e)	Facility-wide energy efficiency measures , such as improved combustion measures, and use of pipeline quality natural gas.	50	KG/GJ	ANNUAL AVERAGE	BACT-PSD	120	LB/MM BTU				
WV-0028	WAVERLY POWER PLANT	WV	R14-0034A	3/13/2018	GE 7FA.004 Turbine	Natural Gas	167.8	MW	Carbon Dioxide Equivalent (CO2e)	Use of natural gas & use of GE 7FA.004	0			BACT-PSD	0					
TX-0826	MUSTANG STATION	TX	72579, PSDTX1080M 1 GHGSPSDTX13	8/16/2017	Simple Cycle Turbine	NATURAL GAS	162.8	MW	Carbon Dioxide Equivalent (CO2e)	Pipeline quality natural gas and good combustion practices	120	LB/MMBTU		BACT-PSD	0					
TX-0819	GAINES COUNTY POWER PLANT	TX	135322, PSDTX1470, AND GHGSPSDT	4/28/2017	Simple Cycle Turbine	natural gas	227.5	MW	Carbon Dioxide Equivalent (CO2e)	Pipeline quality natural gas; limited hours; good combustion practices	1300	LB/MW H		BACT-PSD	0					
LA-0316	CAMERON LNG FACILITY	LA	PSD-LA-766(M3)	2/17/2017	Gas turbines (9 units)	natural gas	1069	mm btu/hr	Carbon Dioxide Equivalent (CO2e)	good combustion practices and fueled by natural gas; Use high thermal efficiency turbines	0			BACT-PSD	0					
VA-0326	DOSWELL ENERGY CENTER	VA	51018	10/4/2016	Two (2) GE 7FA simple cycle combustion turbines	Natural Gas	1961	MMBTU/HR	Carbon Dioxide Equivalent (CO2e)	Good combustion, maintenance and use of active combustion dynamic monitoring systems.	0			BACT-PSD	0					
IL-0121	INVENERGY NELSON EXPANSION LLC	IL	15060042	9/27/2016	Two Simple Cycle Combustion Turbines	Natural Gas	190	MW	Carbon Dioxide Equivalent (CO2e)	Turbine-generator design and proper operation	0			BACT-PSD	0					
TX-0794	HILL COUNTY GENERATING FACILITY	TX	130051,PSDT X1450, GHGSPSDTX13 1	4/7/2016	Simple cycle turbine	natural gas	171	MW	Carbon Dioxide Equivalent (CO2e)		1434	LB/MWH		BACT-PSD	0					
TX-0794	HILL COUNTY GENERATING FACILITY	TX	130051,PSDT X1450, GHGSPSDTX13 1	4/7/2016	Simple Cycle Turbine	LTRA LOW SULFUR DIES	171	MW	Carbon Dioxide Equivalent (CO2e)		1434	LB/MWH		BACT-PSD	0					
TX-0788	NECHES STATION	TX	122401, PSDTX1428, GHGSPSDTX11 1	3/24/2016	Large Combustion Turbines > 25 MW	natural gas	232	MW	Carbon Dioxide Equivalent (CO2e)	good combustion practiceS	1341	LB/MW H		BACT-PSD	0					
LA-0307	MAGNOLIA LNG FACILITY	LA	PSD-LA-792	3/21/2016	Gas Turbines (8 units)	natural gas	333	mm btu/hr	Carbon Dioxide Equivalent (CO2e)	good combustion/operating/maintenance practices and fueled by natural gas; use intake air chiller	0			BACT-PSD	0					
FL-0355	FORT MYERS PLANT	FL	0710002-022-AC	9/10/2015	Combustion Turbines	Natural gas	2262.4	MMBTu/hr gas	Carbon Dioxide Equivalent (CO2e)	Use of low-emitting fuel and efficient turbine	1374	LB CO2E / MWH	FOR NATURAL GAS OPERATION	BACT-PSD	1874	LB CO2E / MWH				

Table E-7
RACT/BACT/LAER Clearing House Summary for NOx Emissions from Simple Cycle Diesel-Fired Turbines

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Standard Emission Limit	Standard Emission Limit Units	Standard Emission Limit Averaging Period	Pollutant Compliance Notes
NJ-0086	BAYONNNE ENERGY CENTER	NJ	12863-BOP150001	8/26/2016	Simple Cycle Stationary Turbines firing Ultra Low Sulfur Distillate Oil	Ultra Low Sulfur Distillate Oil	720	H/YR	Nitrogen Oxides (NOx)	SCR and water injection	5	PPMVD@ 15% O2	3 H ROLLING AV BASED ON ONE H BLOCK AV	LAER	10.37	LB/H	AV OF THREE ONE H STACK TESTS EVERY 5 YR				
*PA-0316	RENOVO ENERGY CENTER, LLC	PA	18-00033A	1/26/2018	Combustion Turbine firing ULSD	ULSD	0		Nitrogen Oxides (NOx)	SCR	4	PPMDV	CORRECTED TO 15% O2	LAER	56.9	TPY					
TX-0794	HILL COUNTY GENERATING FACILITY	TX	130051,PSD TX1450, GHGPSDTX 131	4/7/2016	Simple Cycle Turbine	ULTRA LOW SULFUR DIESEL	171	MW	Nitrogen Oxides (NOx)	DLN, WATER INJECTION	42	PPMVD @ 15% O2	3-HR ROLLING AVERAGE	BACT-PSD	0						

Table E-8
RACT/BACT/LAER Clearing House Summary for CO Emissions from Simple Cycle Diesel-Fired Turbines

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
NJ-0086	BAYONNNE ENERGY CENTER	NJ	12863-BOP150001	8/26/2016	Simple Cycle Stationary Turbines firing Ultra Low Sulfur Distillate Oil	Ultra Low Sulfur Distillate Oil	720	H/YR	Carbon Monoxide	Oxidation Catalyst	5	PPMVD@15% O2	3 H ROLLING AV BASED ON ONE H BLOCK AV	OTHER CASE-BY-CASE	6.31	LB/H	AV OF THREE ONE H STACK TESTS EVERY 5 YR	
TX-0794	HILL COUNTY GENERATING FACILITY	TX	130051.PSDTX1450, GHGSPSDTX131	4/7/2016	Simple Cycle Turbine	ULTRA LOW SULFUR DIESEL	171	MW	Carbon Monoxide	combustor designed for complete combustion and therefore minimizes emissions	20	PPMVD @ 15% O2	3-HR ROLLING AVERAGE	BACT-PSD	0			

Table E-9
RACT/BACT/LAER Clearing House Summary for VOC Emissions from Simple Cycle Diesel-Fired Turbines

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Pollutant Compliance Notes
NJ-0086	BAYONNNE ENERGY CENTER	NJ	12863-BOP150001	8/26/2016	Simple Cycle Stationary Turbines firing Ultra Low Sulfur Distillate Oil	Ultra Low Sulfur Distillate Oil	720	H/YR	Volatile Organic Compounds (VOC)	Oxidation catalyst	4.5	PPMVD@15%O2	3 H ROLLING AV BASED ON ONE H BLOCK AV	LAER	3.25	LB/H	
*PA-0316	RENOVO ENERGY CENTER, LLC	PA	18-00033A	1/26/2018	Combustion Turbine firing ULSD	ULSD	0		Volatile Organic Compounds (VOC)		2	PPMDV	CORRECTED TO 15% O2	LAER	9.89	TPY	
TX-0794	HILL COUNTY GENERATING FACILITY	TX	130051.PSDTX1450, GHGPSDTX131	4/7/2016	Simple Cycle Turbine	ULTRA LOW SULFUR DIESEL	171	MW	Volatile Organic Compounds (VOC)	combustor designed for complete combustion and therefore minimizes emissions	3.3	LB/H		BACT-PSD	0		

Table E-10
RACT/BACT/LAER Clearing House Summary for SO2 Emissions from Simple Cycle Diesel-Fired Turbines

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
NJ-0086	BAYONNNE ENERGY CENTER	NJ	12863-BOP150001	8/26/2016	Simple Cycle Stationary Turbines firing Ultra Low Sulfur Distillate Oil	Ultra Low Sulfur Distillate Oil	720	H/YR	Sulfur Dioxide (SO ₂)	Use of ULSD a very low sulfur fuel	0.8	LB/H	AV OF THREE ONE H STACK TESTS EVERY 5 YR	OTHER CASE-BY-CASE	0			

Table E-11
RACT/BACT/LAER Clearing House Summary for PM Emissions from Simple Cycle Diesel-Fired Turbines

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
NJ-0086	BAYONNNE ENERGY CENTER	NJ	12863-BOP150001	8/26/2016	Simple Cycle Stationary Turbines firing Ultra Low Sulfur Distillate Oil	Ultra Low Sulfur Distillate Oil	720	H/YR	Particulate matter, total <10	Use of ULSD, a clean burning fuel	14	LB/H	AV OF THREE ONE H STACK TESTS EVERY 5 YR	OTHER CASE-BY-CASE	0			
NJ-0086	BAYONNNE ENERGY CENTER	NJ	12863-BOP150001	8/26/2016	Simple Cycle Stationary Turbines firing Ultra Low Sulfur Distillate Oil	Ultra Low Sulfur Distillate Oil	720	H/YR	Particulate matter, total <10	Use of ULSD, a clean burning fuel	14	LB/H	AV OF THREE ONE H STACK TESTS EVERY 5 YR	OTHER CASE-BY-CASE	0			
NJ-0086	BAYONNNE ENERGY CENTER	NJ	12863-BOP150001	8/26/2016	Simple Cycle Stationary Turbines firing Ultra Low Sulfur Distillate Oil	Ultra Low Sulfur Distillate Oil	720	H/YR	Particulate matter, filterable	Use of ULSD, a clean burning fuel	14	LB/H	AV OF THREE ONE H STACK TESTS EVERY 5 YR	OTHER CASE-BY-CASE	0			
TX-0794	HILL COUNTY GENERATING FACILITY	TX	130051.PSDTX1450, GHGSPSDTX131	4/7/2016	Simple Cycle Turbine	ULTRA LOW SULFUR DIESEL	171	MW	Particulate matter, total	combustor designed for complete combustion and therefore minimizes emissions	9.8	LB/H		BACT-PSD	0			
TX-0794	HILL COUNTY GENERATING FACILITY	TX	130051.PSDTX1450, GHGSPSDTX131	4/7/2016	Simple Cycle Turbine	ULTRA LOW SULFUR DIESEL	171	MW	Particulate matter, total	combustor designed for complete combustion and therefore minimizes emissions	9.8	LB/H	3-HR ROLLING AVERAGE	BACT-PSD	0			

Table E-12
RACT/BACT/LAER Clearing House Summary for CO2e Emissions from Simple Cycle Diesel-Fired Turbines

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Standard Emission Limit	Standard Emission Limit Units	Standard Emission Limit Averaging Period	Pollutant Compliance Notes
TX-0794	HILL COUNTY GENERATING	TX	130051,PS DTX1450	4/7/2016	Simple Cycle Turbine	ULTRA LOW SULFUR DIES	171	MW	Carbon Dioxide Equivalent (CO2e)		1434	LB/MWH		BACT-PSD	0						

Table E-13
RACT/BACT/LAER Clearing House Summary for NOx Emissions from Heaters

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
*IN-0371	WABASH VALLEY RESOURCES, LLC	IN	167-45208-00091	01/11/2024	Ammonia Catalyst Startup Heater	Natural Gas	29.01	MMBtu/hr	NOx	Low NOx Burners	50	LB/MMSCF		BACT-PSD	14.22	MMCF	PER TWELVE (12) CONSECUTIVE MONTH PERIOD	
*IN-0371	WABASH VALLEY RESOURCES, LLC	IN	167-45208-00091	01/11/2024	Dewpoint Heater	Natural Gas	1.44	MMBtu/hr	NOx	Low NOx burners and good combustion practices	50	LB/MMSCF		BACT-PSD	0			
*IL-0134	CRONUS CHEMICALS	IL	19110020	12/21/2023	Startup Heater	Natural Gas	47.7	mmBtu/hr	NOx	LNB, good burner design, and GCP	0.07	LB/MMBTU	3-HR AVG	BACT-PSD	0			Compliance demonstrated by stack testing
*LA-0398	CAMERON LNG FACILITY	LA	PSD-LA-766(M4)	9/19/2023	Hot Oil Heaters	natural gas	90	mm btu/hr	Nitrogen Oxides (NOx)	Ultra-low NOx burners	0.01	LB/MM BTU	ANNUAL	BACT-PSD	0			
IN-0324	MIDWEST FERTILIZER COMPANY LLC	IN	129-44510-00059	5/6/2022	Startup Heater	natural gas	33.34	MMBtu/hr	NOx	shall combust natural gas, shall be controlled by good combustion practices	200	HR/YR	TWELVE CONSECUTIVE MONTH PERIOD	BACT-PSD	6.007	LB/HR		
AL-0329	COLBERT COMBUSTION TURBINE PLANT	AL	701-0010	9/21/2021	Three Gas Heaters	Natural Gas	10	MMBtu/hr	NOx		0.011	LB/MMBTU	3 HOUR AVG	BACT-PSD	0			
TX-0908	NEWMAN POWER STATION	TX	N284, PSDTX1090M1, GHGPSDTX199	8/27/2021	LINE HEATER	NATURAL GAS	0		NOx	Low NOx burner, pipeline natural gas and goo combustion practices.	0.03	LB/MMBTU		BACT-PSD	0			
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Natural Gas-Fired Heater (P04)	Natural Gas	10	MMBTU/H	NOx	Low-NOx burners, only use pipeline quality natural gas, maintain and operate according to manufacturer's recommendations.	0.049	LB/MMBTU		BACT-PSD	0			The permittee shall tune P04 within 120 days of the initial operation of P04, and within 24-months of each preceding tune-up.
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Natural Gas-Fired Heater (P05)	Natural Gas	10	MMBTU/H	NOx	Low-NOx burners, only combust pipeline quality natural gas, and operate and maintain the heater according to the manufacturer's recommendations.	0.049	LB/MMBTU		BACT-PSD	0			Tune the heater within 120 days of the initial operation, and within 24-months of each preceding tune-up.
WI-0299	WPL- RIVERSIDE ENERGY CENTER	WI	19-POY-151	8/20/2020		Natural Gas	15.5	MMBTU/H	Nitrogen Oxides (NOx)	Only use natural gas in each heater.	0.098	LB/MMBTU		BACT-PSD	0			(a) Only combust natural gas in each heater; (b) Good combustion practices defined as maintaining the heaters according to the manufacturer's recommendations; and (c) NOx emissions may not exceed 0.098 pounds per MMBtu heat input.
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020		Natural Gas	275	MMBtu/hr	Nitrogen Oxides (NOx)	Low NOx Burners and Good Combustion Practices	0.036	LB/MMBTU	3-HOUR AVERAGE	BACT-PSD	0			EUs 31 - 33 have potential NOx emissions of 43.32 tpy each.
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020		Natural Gas	32	MMBtu/hr	Nitrogen Oxides (NOx)	Low NOx Burners, Good Combustion Practices, Limited Operation of 500 hours per year per heater.	0.036	LB/MMBTU	3-HOUR AVERAGE	BACT-PSD	0			EUs 34 and 35 have 500 hour per year limit per heater, EUs 36 -38 have no hour limit.
LA-0364	FG LA COMPLEX	LA	PSD-LA-812	1/6/2020		Natural Gas	277	mm btu/h	Nitrogen Oxides (NOx)	SCR and LNB	0.01	LB/MMBTU	12-MONTH ROLLING AVERAGE	BACT-PSD	0			
LA-0364	FG LA COMPLEX	LA	PSD-LA-812	1/6/2020	Hot Oil Heaters 1 and 2	Natural Gas	0		NOx	LNB	0.06	LB/MMBTU		BACT-PSD	0			
*MI-0445	INDECK NILES, LLC	MI	75-16B	11/26/2019		Natural gas	27	MMBTU/H	Nitrogen Oxides (NOx)	Good combustion practices	1.32	LB/H	HOURLY; EACH FUEL HEATER	BACT-PSD	0			SCR and Low NOx burners are each greater than \$18,000/ton for NOx, factoring in the redundancy of the heaters (limited joint operation).
MI-0442	THOMAS TOWNSHIP ENERGY, LLC	MI	210-18	8/21/2019	FGPREHEAT	natural gas	7	MMBTU/H	NOx	Good combustion practices and low NOx burners	0.036	LB/MMBTU	HOURLY; EACH UNIT	BACT-PSD	0			SNCR and NSCR are not technically feasible. SCR and flue gas recirculation are all considered to be not economically feasible.
VA-0332	CHICKAHOMINY POWER LLC	VA	52610-1	6/24/2019		Natural Gas	103	MMCF/YR	Nitrogen Oxides (NOx)	: Low NOx burners	0.011	LBS/MMBTU		BACT-PSD	0.6	T/YR	12 MO ROLLING TOTAL	Compliance is based on stack testing and records of annual fuel throughput.
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018		Natural Gas	115	MM BTU/H	Nitrogen Oxides (NOx)	Ultra Low NOx Burners and Good Combustion Practices	0.038	LB/MM BTU	3-HOUR AVERAGE	BACT-PSD	0			Subject to 40 CFR 60 Subpart Db
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	MI	19-18	7/16/2018		Natural gas	20.8	MMBTU/H	Nitrogen Oxides (NOx)	Low NOx burner	0.75	LB/H	HOURLY	BACT-PSD	0			
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	MI	19-18	7/16/2018	EUFUELHTR2: Natural gas fired fuel heater	Natural gas	3.8	MMBTU/H	NOx	Low NOx burner	0.14	LB/H	HOURLY	BACT-PSD	0			
VA-0328	C4GT, LLC	VA	52588	4/26/2018		natural gas	140	MMCF/YR	Nitrogen Oxides (NOx)	Ultra Low NOx burners	0.8	T/YR		BACT-PSD	0			
FL-0363	DANIA BEACH ENERGY CENTER	FL	0110037-017-AC	12/4/2017	Two natural gas heaters	Natural gas	9.9	MMBtu/hr	NOx	Manufacturer certification	0.1	LB/MMBTU	DESIGN VALUE	BACT-PSD	0			No testing required; design spec only
OH-0374	GUERNEY POWER STATION LLC	OH	P0122594	10/23/2017		Natural gas	15	MMBTU/H	Nitrogen Oxides (NOx)	Low-NOx gas burner	0.3	LB/H		BACT-PSD	1.31	T/YR	PER ROLLING 12 MONTH PERIOD	

Table E-13
RACT/BACT/LAER Clearing House Summary for NOx Emissions from Heaters

*PA-0315	HILLTOP ENERGY CENTER, LLC	PA	30-00233B	4/12/2017	6.4 MMBtu/hr Flue Gas Heater		0		NOx	good combustion and operating practices	0.011	LB	MMBTU		0			
MI-0423	INDECK NILES, LLC	MI	75-16	1/4/2017		Natural gas	27	MMBTU/H	Nitrogen Oxides (NOx)	Good combustion practices.	2.65	LB/H	HOURLY; EACH UNIT	BACT-PSD	0			The emission limit of 2.65 lb/hr is for each unit. SCR and low NOx burners are each greater than \$18,000/ton for NOx, factoring in the redundancy of the heaters (limited operation).
MI-0424	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13C	12/5/2016	EUFUELHTR (Fuel pre-heater)	Natural gas	3.7	MMBTU/H	NOx	Good combustion practices.	0.55	LB/H	TEST PROTOCOL WILL SPECIFY AVG TIME.	BACT-PSD	0			Low NOx burners are greater than \$31,000/ton for NOx.
FL-0356	OKEECHOBEE CLEAN ENERGY CENTER	FL	0930117-001-AC	3/9/2016	Two natural gas heaters	Natural gas	10	MMBTu/hr	NOx	Must have NOx emission design value less than 0.1 lb/MMBTu	0.1	LB/MMBTU		BACT-PSD	0			Design standard only. No testing required.
MD-0045	MATTAWOMAN ENERGY CENTER	MD	PSC CASE. NO. 9330	11/13/2015		NATURAL GAS	13.8	MMBTU/H	Nitrogen Oxides (NOx)	USE OF PIPELINE QUALITY NATURAL GAS AND GOOD COMBUSTION PRACTICES	0.035	LB/MMBTU	3-HOUR BLOCK AVERAGE	BACT-PSD	0			
IA-0107	MARSHALLTOWN GENERATING STATION	IA	13-A-499-P	4/14/2014		natural gas	13.32	mmBtu/hr	Nitrogen Oxides (NOx)		0.013	LB/MMBTU	3-HOUR AVERAGE	BACT-PSD	0			
PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE	PA	06-05150A	12/17/2013	Fuel Preheater	Natural Gas	8.5	MMBTU/H	NOx		0.035	LB/MMBTU		OTHER CASE-BY-CASE	0			
MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13	12/4/2013	Fuel pre-heater (EUFUELHTR)	natural gas	3.7	MMBTU/H	NOx	Good combustion practices.	0.55	LB/H	TEST PROTOCOL	BACT-PSD	0			Low NOx burners are greater than \$23,000/ton for NOx.
MI-0410	THETFORD GENERATING STATION	MI	191-12	7/25/2013		Natural gas	12	heat input each	Nitrogen Oxides (NOx)	Low NOx burners	0.06	LB/MMBTU	30-D ROLL AVG EACH DAY IN OPERATION	BACT-PSD	0			The NOx limit is 0.06 LB/MMBTU heat input based on a 30-day rolling average as determined each day in operation for EACH heater.
PA-0288	SUNBURY GENERATION LP/SUNBURY SES	PA	55-00001E	4/1/2013		Natural Gas	15	MMBTU/H	Nitrogen Oxides (NOx)		0.085	LB/MMBTU		OTHER CASE-BY-CASE	5.25	T/YR	IN ANY 12 CONSECUTIVE MONTH PERIOD	

Table E-14
RACT/BACT/LAER Clearing House Summary for CO Emissions from Heaters

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
TX-0939	ORANGE COUNTY ADVANCED POWER STATION	TX	166032 PSDTX1598 GHGPSDTX210	3/13/2023		NATURAL GAS	16.8	MMBTU/HR	Carbon Monoxide	Good combustion practices	50	PPMVD	3% O2	BACT-PSD	0			
*IL-0134	CRONUS CHEMICALS	IL	19110020	12/21/2023	Startup Heater	Natural Gas	47.7	mmBtu/hr	CO	GCP and good burner design	0.0194	LB/MMBTU	3-HR AVG	BACT-PSD	0			Compliance demonstrated by stack testing
*LA-0398	CAMERON LNG FACILITY	LA	PSD-LA-766(M4)	9/19/2023	Hot Oil Heaters	natural gas	90	mm btu/hr	CO	Proper burner design and operations Good combustion practices Compliance with 40 CFR 63 Subpart DDDDD	0.037	LB/MM BTU	ANNUAL	BACT-PSD	0			
IN-0324	MIDWEST FERTILIZER COMPANY LLC	IN	129-44510-00059	5/6/2022	Startup Heater	natural gas	33.34	MMBTu/hr	CO	shall combust natural gas, shall be controlled by good combustion practices	200	HR/YR	TWELVE CONSECUTIVE MONTH PERIOD	BACT-PSD	1.217	LB/HR		
AL-0329	COLBERT COMBUSTION TURBINE PLANT	AL	701-0010	9/21/2021	Three Gas Heaters	Natural Gas	10	MMBTu/hr	CO		0.08	LB/MMBTU	3 HOUR AVG	BACT-PSD	0			
TX-0908	NEWMAN POWER STATION	TX	N284, PSDTX1090M1, GHGPSDTX199	8/27/2021	LINE HEATER	NATURAL GAS	0		CO	Good combustions practices and pipeline natural gas	50	PPMVD		BACT-PSD	0			
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Natural Gas-Fired Heater (P04)	Natural Gas	10	MMBTU/H	CO	Only combust pipeline quality natural gas and operate and maintain the process according to manufacturer's recommendations.	0.08	LB/MMBTU		BACT-PSD	0			Tune-up heater within 120 days of the initial operation, and within 24-months of each preceding tune-up.
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Natural Gas-Fired Heater (P05)	Natural Gas	10	MMBTU/H	CO	Only combust pipeline quality natural gas and operate and maintain heater according to the manufacturer's recommendations.	0.08	LB/MMBTU		BACT-PSD	0			Tune the heater within 120 days of the initial operation, and within 24-months of each preceding tune-up.
WI-0299	WPL- RIVERSIDE ENERGY CENTER	WI	19-POY-151	8/20/2020		Natural Gas	15.5	MMBTU/H	Carbon Monoxide	Only combust natural gas in each heater.	0.082	LB/MMBTU		BACT-PSD	0			(a) Only combust natural gas in each heater; (b) Good combustion practices, defined as maintaining the heaters according to the manufacturer's recommendations; and (c) CO emissions may not exceed 0.082 pounds per MMBtu heat input.
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020		Natural Gas	275	MMBTu/hr	Carbon Monoxide	Oxidation Catalyst and Good Combustion Practices	0.007	LB/MMBTU	3-HOUR AVERAGE	BACT-PSD	0			EUs 31 - 33 have potential CO emissions of 8.42 tpy each.
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020		Natural Gas	32	MMBTu/hr	Carbon Monoxide	Good Combustion Practices, Clean Fuels, and Limited Operation of 500 hours per year per heater.	0.087	LB/MMBTU	3-HOUR AVERAGE	BACT-PSD	0			EUs 34 and 35 have 500 hour per year limit per heater, EUs 36 -38 have no hour limit.

Table E-14
RACT/BACT/LAER Clearing House Summary for CO Emissions from Heaters

LA-0364	FG LA COMPLEX	LA	PSD-LA-812	1/6/2020		Natural Gas	277	mm btu/h	Carbon Monoxide	Good combustion practices and compliance with the applicable provisions of 40 CFR 63 Subpart DDDDD.	0.037	LB/MMBTU		BACT-PSD	0			
LA-0364	FG LA COMPLEX	LA	PSD-LA-812	1/6/2020	Hot Oil Heaters 1 and 2	Natural Gas	0		CO	Good combustion practices and compliance with the applicable provisions of 40 CFR 63 Subpart DDDDD.	0.037	LB/MMBTU		BACT-PSD	0			
*MI-0445	INDECK NILES, LLC	MI	75-16B	11/26/2019		Natural gas	27	MMBTU/H	Carbon Monoxide	Good combustion practices	1.11	LB/H	HOURLY; EACH FUEL HEATER	BACT-PSD	0			An oxidation catalyst is greater than \$40,000/ton for CO and VOC together, factoring in the redundancy of the heaters (limited joint operation).
MI-0442	THOMAS TOWNSHIP ENERGY, LLC	MI	210-18	8/21/2019	FGPREHEAT	natural gas	7	MMBTU/H	CO	Good combustion practices	0.037	LB/MMBTU	HOURLY; EACH UNIT	BACT-PSD	0			Thermal oxidation is not considered a technically feasible control alternative for this project.
VA-0332	CHICKAHOMINY POWER LLC	VA	52610-1	6/24/2019		Natural Gas	103	MMCF/YR	Carbon Monoxide	good combustion practices, operator training, and proper emissions unit design, construction and maintenance.	0.037	LB/MMBTU		BACT-PSD	0.5	LB/HR		Additional emission limit: 2.0 tons/year 12 mo rolling total. Compliance is based on stack testing and records of annual fuel throughput.
IL-0130	JACKSON ENERGY CENTER	IL	17040013	12/31/2018		Natural Gas	13	mmBtu/hour	Carbon Monoxide	Good combustion practice	0.08	LB/MMBTU		BACT-PSD	0			
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018		Natural Gas	115	MM BTU/h	Carbon Monoxide	Exclusive Combustion of Fuel Gas and Good Combustion Practices.	0.082	LB/ MM BTU	3 HOUR AVERAGE	BACT-PSD	0			Subject to 40 CFR 60 Subpart Db
IL-0129	CPV THREE RIVERS ENERGY CENTER	IL	16060032	7/30/2018		Natural Gas	12.8	mmBtu/hr	Carbon Monoxide	Good combustion practice	0.08	LB/HR		BACT-PSD	0			Permit limits are 1.02 lb/hr and 4.5 ton/yr
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	MI	19-18	7/16/2018		Natural gas	20.8	MMBTU/H	Carbon Monoxide	Good combustion controls.	0.77	LB/H	HOURLY	BACT-PSD	0			
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	MI	19-18	7/16/2018	EUFUELHTR2: Natural gas fired fuel heater	Natural gas	3.8	MMBTU/H	CO	Good combustion controls	0.14	LB/H	HOURLY	BACT-PSD	0			
VA-0328	C4GT, LLC	VA	52588	4/26/2018		natural gas	140	MMCF/YR	Carbon Monoxide	good combustion practices	2.6	T/YR		BACT-PSD	0			
OH-0374	GUERNSEY POWER STATION LLC	OH	P0122594	10/23/2017		Natural gas	15	MMBTU/H	Carbon Monoxide	Combustion control	0.83	LB/H		BACT-PSD	3.64	T/YR	PER ROLLING 12 MONTH PERIOD	
*PA-0315	HILLTOP ENERGY CENTER, LLC	PA	30-00233B	4/12/2017	6.4 MMBtu/hr Flue Gas Heater		0		CO		0.037	LB	MMBTU		0			
MI-0423	INDECK NILES, LLC	MI	75-16	1/4/2017		Natural gas	27	MMBTU/H	Carbon Monoxide	Good combustion practices.	2.22	LB/H	HOURLY; EACH UNIT	BACT-PSD	0			The emission limit of 2.22 lb/hr is for each fuel heater. An oxidation catalyst is greater than \$40,000/ton for CO and VOC together, factoring in the redundancy of the heaters (limited joint operation).
MI-0424	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13C	12/5/2016	EUFUELHTR (Fuel pre-heater)	Natural gas	3.7	MMBTU/H	CO	Good combustion practices.	0.41	LB/H	TEST PROTOCOL WILL SPECIFY AVG TIME	BACT-PSD	0			An oxidation catalyst is greater than \$90,000/ton for CO and VOC together.
PA-0310	CPV FAIRVIEW ENERGY CENTER	PA	11-00536A	9/2/2016	13.8 MMBtu/hr Due Point Heater		0		CO		0.08	LB/MMBTU		BACT-PSD	0			
PA-0310	CPV FAIRVIEW ENERGY CENTER	PA	11-00536A	9/2/2016	3.2 MMBTtu/hr Dew Point Heater	Natrual Gas	3.2	MMBTu/hr	CO		0.08	LB/MMBTU		BACT-PSD	0			

Table E-14
RACT/BACT/LAER Clearing House Summary for CO Emissions from Heaters

VA-0325	GREENSVILLE POWER STATION	VA	52525	6/17/2016		NATURAL GAS	185	MMBTU/HR	Carbon Monoxide	Clean fuel and good combustion practices	0.035	LB/MMBTU		N/A	6.6	LB/H		
MD-0045	MATTAWOMAN ENERGY CENTER	MD	PSC CASE. NO. 9330	11/13/2015		NATURAL GAS	13.8	MMBTU/H	Carbon Monoxide	GOOD COMBUSTION PRACTICES	0.021	LB/MMBTU	3-HOUR BLOCK AVERAGE	BACT-PSD	0			
PA-0311	MOXIE FREEDOM GENERATION PLANT	PA	40-00129A	9/1/2015	Fuel Gas Heater		0		CO		0.037	LB/MMBTU		BACT-PSD	2.37	TPY	12-MONTH ROLLING BASIS	
TX-0678	FREEPORT LNG PRETREATMENT FACILITY	TX	104840 N170 PSDTX1302	7/16/2014		natural gas	130	MMBTU/H	Carbon Monoxide	ultra-low NOx burners	25	PPMVD	@3% O2 AND 1 HOUR BASED ON STACK TEST	BACT-PSD	0			
MD-0041	CPV ST. CHARLES	MD	PSC CASE NO. 9280	4/23/2014	FUEL GAS HEATER	NATURAL GAS	9.5	MMBTU/H	CO	GOOD COMBUSTION PRACTICES	0.08	LB/MMBTU		BACT-PSD	0			
IA-0107	MARSHALLTOWN GENERATING STATION	IA	13-A-499-P	4/14/2014		natural gas	13.32	mmBtu/hr	Carbon Monoxide		0.041	LB/MMBTU	3-HOUR AVERAGE	BACT-PSD	0			
MD-0042	WILDCAT POINT GENERATION FACILITY	MD	CPCN CASE NO. 9327	4/8/2014	DEW POINT HEATER	NATURAL GAS	5	MMBTU/H	CO	USE OF EFFICIENT DESIGN OF THE HEATER, EXCLUSIVE USE OF PIPELINE QUALITY NATURAL GAS ONLY, AND APPLICATION OF GOOD COMBUSTION PRACTICES	0.083	LB/MMBTU	3-HOUR BLOCK AVERAGE	BACT-PSD	0			
PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE	PA	06-05150A	12/17/2013	Fuel Preheater	Natural Gas	8.5	MMBTU/H	CO		0.05	LB/MMBTU		N/A	0			
MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13	12/4/2013	Fuel pre-heater (EUFUELHTR)	natural gas	3.7	MMBTU/H	CO	Good combustion practices	0.41	LB/H	TEST PROTOCOL	BACT-PSD	0			An oxidation catalyst is greater than \$90,000/ton for CO and VOC together.
MI-0406	RENAISSANCE POWER LLC	MI	51-13	11/1/2013		Natural gas	20	MMBTU/H	Carbon Monoxide	Good combustion practices	0.09	LB/MMBTU	TEST PROTOCOL	BACT-PSD	0			Test protocol will specify averaging time.
NY-0104	CPV VALLEY ENERGY CENTER	NY	3-335600136/00001	8/1/2013	Gas heater	natural gas	0		CO	Good combustion practice.	0.084	LB/MMBTU	1 H	BACT-PSD	0			
MI-0410	THETFORD GENERATING STATION	MI	191-12	7/25/2013		Natural gas	12	/H heat input each fuel	Carbon Monoxide	Efficient combustion	0.11	LB/MMBTU	TEST PROTOCOL WILL SPECIFY AVG. TIME.	BACT-PSD	0			The CO limit is 0.11 LB/MMBTU heat input for EACH heater.
PA-0288	SUNBURY GENERATION LP/SUNBURY SES	PA	55-00001E	4/1/2013		Natural Gas	15	MMBTU/H	Carbon Monoxide		0.037	LB/MMBTU		OTHER CASE-BY-CASE	2.28	T/YR	IN ANY 12 CONSECUTIVE MONTH PERIOD	

Table E-15
RACT/BACT/LAER Clearing House Summary for VOC Emissions from Heaters

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
TX-0939	ORANGE COUNTY ADVANCED POWER STATION	TX	166032 PSDTX1598 GHGSPSDTX210	3/13/2023		NATURAL GAS	16.8	MMBTU/HR	ile Organic Compounds (	Good combustion practices	0.005	LB/MMBTU		BACT-PSD	0			
*IL-0134	CRONUS CHEMICALS	IL	19110020	12/21/2023	Startup Heater	Natural Gas	47.7	mmBtu/hr	VOC	GCP and good burner design	0.0014	LB/MMBTU	3-HR AVG	BACT-PSD	0			Compliance demonstrated by stack testing
*LA-0398	CAMERON LNG FACILITY	LA	PSD-LA-766(M4)	9/19/2023	Hot Oil Heaters	natural gas	90	mm btu/hr	VOC	Proper burner design and operations Good combustion practices Compliance with 40 CFR 63 Subpart DDDDD	0.0054	LB/MM BTU	ANNUAL	BACT-PSD	0			
IN-0324	MIDWEST FERTILIZER COMPANY LLC	IN	129-44510-00059	5/6/2022	Startup Heater	natural gas	33.34	MMBTu/hr	VOC	shall combust natural gas, good combustion practices	200	HR/YR	TWELVE CONSECUTIVE MONTH PERIOD	BACT-PSD	0.18	LB/HR		
TX-0908	NEWMAN POWER STATION	TX	N284, PSDTX1090M1, GHGSPSDTX199	8/27/2021	LINE HEATER	NATURAL GAS	0		VOC	Good combustions practices and pipeline natural gas	0			BACT-PSD	0			
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Natural Gas-Fired Heater (P04)	Natural Gas	10	MMBTU/H	VOC	Only combust pipeline quality natural gas, operate and maintain process according to manufacturer's recommendations.	0.005	LB/MMBTU		BACT-PSD	0			Tune heater within 120 days of the initial operation, and within 24-months of each preceding tune-up.
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Natural Gas-Fired Heater (P05)	Natural Gas	10	MMBTU/H	VOC	Only combust pipeline quality natural gas and operate and maintain according to manufacturer's recommendations.	0.005	LB/MMBTU		BACT-PSD	0			Tune heater within 120 days of the initial operation, and within 24-months of each preceding tune-up.
WI-0299	WPL- RIVERSIDE ENERGY CENTER	WI	19-POY-151	8/20/2020		Natural Gas	15.5	MMBTU/H	ile Organic Compounds (	Only combust natural gas in each heater.	0.0054	LB/MMBTU		BACT-PSD	0			(a) Only combust natural gas in each heater; (b) Good combustion practices, defined as maintaining the heaters according to the manufacturer's recommendations; and (c) VOC emissions may not exceed 0.0054 pounds per MMBtu heat input.
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020		Natural Gas	275	MMBTu/hr	ile Organic Compounds (	Oxidation Catalyst and Good Combustion Practices	0.0029	LB/MMBTU	3-HOUR AVERAGE	BACT-PSD	0			EUs 31 - 33 have potential VOC emissions of 3.43 tpy each.
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020		Natural Gas	32	MMBTu/hr	ile Organic Compounds (	Good Combustion Practices, Clean Fuels, and Limited Operation of 500 hours per year per heater.	0.0057	LB/MMBTU	3-HOUR AVERAGE	BACT-PSD	0			EUs 34 and 35 have 500 hour per year limit per heater, EUs 36 -38 have no hour limit.
*MI-0445	INDECK NILES, LLC	MI	75-168	11/26/2019		Natural gas	27	MMBTU/H	ile Organic Compounds (	Good combustion practices	0.07	LB/H	HOURLY; EACH FUEL HEATER	BACT-PSD	0			An oxidation catalyst is greater than \$40,000/ton for CO and VOC together, factoring in the redundancy of the heaters (limited joint operation).
MI-0442	THOMAS TOWNSHIP ENERGY, LLC	MI	210-18	8/21/2019	FGPREHEAT	natural gas	7	MMBTU/H	VOC	Good combustion practices	0.025	LB/MMBTU	HOURLY; EACH UNIT	BACT-PSD	0			
VA-0332	CHICKAHOMINY POWER LLC	VA	52610-1	6/24/2019		Natural Gas	103	MMCF/YR	ile Organic Compounds (	good combustion practices, operator training, and proper emissions unit design, construction and maintenance.	0.3	T/YR	12 MO ROLLING AVG	BACT-PSD	0.005	LB/MMBTU		

Table E-15 RACT/BACT/LAER Clearing House Summary for VOC Emissions from Heaters																		
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	MI	19-18	7/16/2018		Natural gas	20.8	MMBTU/H	ile Organic Compounds (	Good combustion controls	0.17	LB/H	HOURLY	BACT-PSD	0			
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	MI	19-18	7/16/2018	EUFUELHTR2: Natural gas fired fuel heater	Natural gas	3.8	MMBTU/H	VOC	Good combustion controls.	0.03	LB/H	HOURLY	BACT-PSD	0			
VA-0328	C>, LLC	VA	52588	4/26/2018		natural gas	140	MMCF/YR	ile Organic Compounds (	good combustion practices	0			BACT-PSD	0			
FL-0364	SEMINOLE GENERATING STATION	FL	1070025-028-AC / PSD-FL-443	3/21/2018	Two natural gas heaters (10 MMBtu/hr each)	Natural gas	9.9	MMBTu/hr	VOC		0.005	LB/MMBTU		BACT-PSD	0			Design specification only. No testing required.
OH-0374	GUERNSEY POWER STATION LLC	OH	P0122594	10/23/2017		Natural gas	15	MMBTU/H	ile Organic Compounds (	Combustion control	0.075	LB/H		BACT-PSD	0.33	T/YR	PER ROLLING 12 MONTH PERIOD	
MI-0423	INDECK NILES, LLC	MI	75-16	1/4/2017		Natural gas	27	MMBTU/H	ile Organic Compounds (	Good combustion practices.	0.15	LB/H	HOURLY; EACH FUEL HEATER	BACT-PSD	0			An oxidation catalyst is greater than \$40,000/ton for CO and VOC together, factoring in the redundancy of the heaters (limited joint operation).
MI-0424	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13C	12/5/2016	EUFUELHTR (Fuel pre-heater)	Natural gas	3.7	MMBTU/H	VOC	Good combustion practices.	0.03	LB/H	TEST PROTOCOL WILL SPECIFY AVG TIME	BACT-PSD	0			An oxidation catalyst is greater than \$90,000/ton for CO and VOC together.
TX-0756	CCI CORPUS CHRISTI CONDENSATE SPLITTER FACILITY	TX	116072 AND PSDTX1388	6/19/2015		natural gas	153	MMBTu/hr (max)	ile Organic Compounds (	Good combustion practices will limit VOC emissions to 0.005 lb per 1000 scf. Fuel flow will be measured.	0.005	LB/ 100 SCF	EACH HEATER	BACT-PSD	0			40CFR60 Subparts A and Ja Emission limits are for each heater.
TX-0678	FREEPORT LNG PRETREATMENT FACILITY	TX	104840 N170 PSDTX1302	7/16/2014		natural gas	130	MMBTU/H	ile Organic Compounds (	good combustion practices	0.26	LB/H	1 HOUR	BACT-PSD	0			
PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE	PA	06-05150A	12/17/2013	Fuel Preheater	Natural Gas	8.5	MMBTU/H	VOC		0.05	LB/MMBTU		OTHER CASE-BY-CASE	0			
MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13	12/4/2013	Fuel pre-heater (EUFUELHTR)	natural gas	3.7	MMBTU/H	VOC	Good combustion practices	0.03	LB/H	TEST PROTOCOL	BACT-PSD	0			An oxidation catalyst is greater than \$90,000/ton for CO and VOC together.
MI-0410	THETFORD GENERATING STATION	MI	191-12	7/25/2013		Natural gas	12	H heat input each h	ile Organic Compounds (	Efficient combustion; natural gas fuel.	0.008	LB/MMBTU	TEST PROTOCOL WILL SPECIFY AVG. TIME	BACT-PSD	0			The VOC limit is 0.008 LB/MMBTU heat input for EACH heater.
PA-0288	SUNBURY GENERATION LP/SUNBURY SES	PA	55-00001E	4/1/2013		Natural Gas	15	MMBTU/H	ile Organic Compounds (VOC)		0.006	LB/MMBTU		OTHER CASE-BY-CASE	0.34	T/YR	IN ANY 12 CONSECUTIVE MONTH PERIOD	

Table E-16
RACT/BACT/LAER Clearing House Summary for SO2 Emissions from Heaters

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
TX-0908	NEWMAN POWER STATION	TX	N284, PSDTX1090M1, GHGPSDTX199	8/27/2021	LINE HEATER	NATURAL GAS	0		SO2	Good combustions practices and pipeline natural gas. Fuel to contain less than 5 grains of sulfur per dscf	5	GR/DSCF		BACT-PSD	0			
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	Three (3) Building Heat Medium Heaters	Natural Gas	275	MMBtu/hr	SO2	Good Combustion Practices and Clean Fuel (NG)	96	PPMV SULFUR IN FUEL	PRIOR TO COMPLETING TREATMENT TRAINS	BACT-PSD	16	PPMV SULFUR IN FUEL	AFTER COMPLETING TREATMENT TRAINS	Potential SO2 emissions of 4.13 tpy and 0.69 tpy per heater @ 96ppmv and 16 ppmv total sulfur in fuel respectively.
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	Two (2) Buyback Gas Bath Heaters and Three (3) Operations Camp Heaters	Natural Gas	32	MMBtu/hr	SO2	Good Combustion Practices, Clean Fuels (NG), and Limited Operation of 500 hours per year per heater.	96	PPMV SULFUR IN FUEL	PRIOR TO COMPLETING TREATMENT TRAINS	BACT-PSD	16	PPMV SULFUR IN FUEL	AFTER COMPLETING TREATMENT TRAINS	EUs 34 and 35 have 500 hour per year limit per heater, EUs 36 -38 have no hour limit.
*MI-0445	INDECK NILES, LLC	MI	75-16B	11/26/2019	FGFUELHTR (2 fuel pre-heaters)	Natural gas	27	MMBTU/H	SO2	Good combustion practices and the use of pipeline quality natural gas.	2000	GR/MMSCF	BASED UPON FUEL RECEIPT RECORDS	BACT-PSD	0			The emission limit above is 2,000 grains of sulfur per MMscf based upon fuel receipt records. The natural gas material limit of 2,000 grains of sulfur per MMscf is what the emission factor is based upon.
VA-0332	CHICKAHOMINY POWER LLC	VA	52610-1	6/24/2019	Three (3) Fuel Gas Heaters	Natural Gas	103	MMCF/YR	SO2	Pipeline quality natural gas with a maximum sulfur content of 0.4 gr/100 scf	0			BACT-PSD	0			Compliance is based on compliance with fuel sulfur content.
VA-0328	C4GT, LLC	VA	52588	4/26/2018	Dew Point Heater	natural gas	140	MMCF/YR	SO2	Pipeline quality natural gas with a maximum sulfur content of 0.4 gr/100 scf	0			OTHER CASE-BY-CASE	0			Compliance is based on compliance with fuel sulfur content
FL-0363	DANIA BEACH ENERGY CENTER	FL	0110037-017-AC	12/4/2017	Two natural gas heaters	Natural gas	9.9	MMBtu/hr	SO2	Clean fuel	2	GRAINS S / 100 SCF		BACT-PSD	0			Natural gas only, with sulfur content less than 2 grains per 100 scf of gas
OH-0374	GUERNSEY POWER STATION LLC	OH	P0122594	10/23/2017	Fuel Gas Heaters (2 identical, P007 and P008)	Natural gas	15	MMBTU/H	SO2	Pipeline natural gas fuel	0.023	LB/H		BACT-PSD	0.1	T/YR	PER ROLLING 12 MONTH PERIOD	
MI-0423	INDECK NILES, LLC	MI	75-16	1/4/2017	FGFUELHTR (Two fuel pre-heaters identified as EUFUELHTR1 & EUFUELHTR2)	Natural gas	27	MMBTU/H	SO2	Good combustion practices and the use of pipeline quality natural gas.	2000	GR/MMSCF	BASED UPON FUEL RECEIPT RECORDS.	BACT-PSD	0			NOTE: The limit is 2,000 grains of sulfur per MMscf. The natural gas material limit of 2000 grains of sulfur per MMscf is what the emission factor is based upon.
FL-0356	OKEECHOBEE CLEAN ENERGY CENTER	FL	0930117-001-AC	3/9/2016	Two natural gas heaters	Natural gas	10	MMBtu/hr	SO2	Use of low-sulfur fuel	2	GR. S/100 SCF GAS		BACT-PSD	0			
TX-0678	FREEPORT LNG PRETREATMENT FACILITY	TX	104840 N170 PSDTX1302	7/16/2014	Heating Medium Heaters	natural gas	130	MMBTU/H	SO2		0.01	LB/H	1 HOUR	BACT-PSD	0			low sulfur natural gas is the fuel
MD-0042	WILDCAT POINT GENERATION FACILITY	MD	CPCN CASE NO. 9327	4/8/2014	DEW POINT HEATER	NATURAL GAS	5	MMBTU/H	SO2	USE OF EFFICIENT DESIGN OF THE HEATER, EXCLUSIVE USE OF PIPELINE QUALITY NATURAL GAS ONLY, AND APPLICATION OF GOOD COMBUSTION PRACTICES	0.0006	LB/MMBTU	3-HOUR BLOCK AVERAGE	BACT-PSD	0			
PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE	PA	06-05150A	12/17/2013	Fuel Preheater	Natural Gas	8.5	MMBTU/H	SO2		0.002	LB/MMBTU		OTHER CASE-BY-CASE	0			

Table E-16
RACT/BACT/LAER Clearing House Summary for SO2 Emissions from Heaters

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
NY-0104	CPV VALLEY ENERGY CENTER	NY	3-335600136/00001	8/1/2013	Gas heater	natural gas	0		SO2	Natural gas.	0.0022	LB/MMBTU	1 H	BACT-PSD	0			
PA-0288	SUNBURY GENERATION LP/SUNBURY SES	PA	55-00001E	4/1/2013	DEW POINT HEATER	Natural Gas	15	MMBTU/H	SOx		0.003	LB/MMBTU		OTHER CASE-BY-CASE	0.17	T/YR	IN ANY 12 CONSECUTIVE MONTH PERIOD	

Table E-17
RACT/BACT/LAER Clearing House Summary for PM Emissions from Heaters

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
TX-0939	ORANGE COUNTY ADVANCED POWER STATION	TX	166032 PSDTX1598 GHGSPSDTX210	3/13/2023		NATURAL GAS	16.8	MMBTU/HR	Particulate matter, filterable (FPM)	Good combustion practices	0.007	LB/MMBTU		BACT-PSD	0			
TX-0939	ORANGE COUNTY ADVANCED POWER STATION	TX	166032 PSDTX1598 GHGSPSDTX210	3/13/2023		NATURAL GAS	16.8	MMBTU/HR	Particulate matter, filterable; 10 µg (FPM10)	Good combustion practices	0.007	LB/MMBTU		BACT-PSD	0			
TX-0939	ORANGE COUNTY ADVANCED POWER STATION	TX	166032 PSDTX1598 GHGSPSDTX210	3/13/2023		NATURAL GAS	16.8	MMBTU/HR	Particulate matter, filterable; 2.5 µg (FPM2.5)	Good combustion practices	0.007	LB/MMBTU		BACT-PSD	0			
*IL-0134	CRONUS CHEMICALS	IL	19110020	12/21/2023	Startup Heater	Natural Gas	47.7	mmBtu/hr	TPM10	GCP and good burner design	0.0024	LB/MMBTU	3-HR AVG	BACT-PSD	0			Compliance demonstrated by stack testing
*IL-0134	CRONUS CHEMICALS	IL	19110020	12/21/2023	Startup Heater	Natural Gas	47.7	mmBtu/hr	TPM2.5	GCP and good burner design	0.0024	LB/MMBTU	3-HR AVG	BACT-PSD	0			Compliance demonstrated by stack testing
*LA-0398	CAMERON LNG FACILITY	LA	PSD-LA-766(M4)	9/19/2023	Hot Oil Heaters	natural gas	90	mm btu/hr	TPM10	Proper burner design and operations Good combustion practices Compliance with 40 CFR 63 Subpart DDDDD Fueled by natural gas	0.0075	LB/MM BTU		BACT-PSD	0			
*LA-0398	CAMERON LNG FACILITY	LA	PSD-LA-766(M4)	9/19/2023	Hot Oil Heaters	natural gas	90	mm btu/hr	FPM2.5	Proper burner design and operations Good combustion practices Compliance with 40 CFR 63 Subpart DDDDD Fueled by natural gas	0.0075	LB/MM BTU		BACT-PSD	0			
IN-0324	MIDWEST FERTILIZER COMPANY LLC	IN	129-44510-00059	5/6/2022	Startup Heater	natural gas	33.34	MMBTu/hr	TPM10	shall combust natural gas, shall be controlled by good combustion practices	200	HR/YR	TWELVE CONSECUTIVE MONTH PERIOD	BACT-PSD	0.249	LB/HR		
IN-0324	MIDWEST FERTILIZER COMPANY LLC	IN	129-44510-00059	5/6/2022	Startup Heater	natural gas	33.34	MMBTu/hr	TPM2.5	shall combust natural gas, shall be controlled by good combustion practices	200	HR/YR	TWELVE CONSECUTIVE MONTH PERIOD	BACT-PSD	0.249	LB/HR		
AL-0329	COLBERT COMBUSTION TURBINE PLANT	AL	701-0010	9/21/2021	Three Gas Heaters	Natural Gas	10	MMBTu/hr	FPM10		0.008	LB/MMBTU	3 HOUR AVG	BACT-PSD	0			
AL-0329	COLBERT COMBUSTION TURBINE PLANT	AL	701-0010	9/21/2021	Three Gas Heaters	Natural Gas	10	MMBTu/hr	FPM2.5		0.008	LB/MMBTU	3 HOUR AVG	BACT-PSD	0			
TX-0908	NEWMAN POWER STATION	TX	N284, PSDTX1090M1, GHGSPSDTX199	8/27/2021	LINE HEATER	NATURAL GAS	0		FPM	Good combustions practices and pipeline natural gas to limit opacity to 5%	0			BACT-PSD	0			
TX-0908	NEWMAN POWER STATION	TX	N284, PSDTX1090M1, GHGSPSDTX199	8/27/2021	LINE HEATER	NATURAL GAS	0		FPM2.5	Good combustions practices and pipeline natural gas to limit opacity to 5%	0			BACT-PSD	0			
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Natural Gas-Fired Heater (P04)	Natural Gas	10	MMBTU/H	TPM	Operate and maintain heaters according to manufacturer's recommendations. Only combust pipeline quality natural gas.	0.01	LB/MMBTU		BACT-PSD	0			The permittee shall tune heater within 120 days of the initial operation of heater, and within 24-months of each preceding tune-up
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Natural Gas-Fired Heater (P04)	Natural Gas	10	MMBTU/H	TPM10	Operate and maintain according to manufacturer's recommendations. Only combust pipeline quality natural gas.	0.01	LB/MMBTU		BACT-PSD	0			The permittee shall tune heater within 120 days of the initial operation of heater, and within 24-months of each preceding tune-up.
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Natural Gas-Fired Heater (P04)	Natural Gas	10	MMBTU/H	TPM2.5	Operate and maintain heater according to manufacturer's recommendations. Only combust pipeline quality natural gas.	0.01	LB/MMBTU		BACT-PSD	0			The permittee shall tune heater within 120 days of the initial operation of heater, and within 24-months of each preceding tune-up.
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Natural Gas-Fired Heater (P05)	Natural Gas	10	MMBTU/H	TPM	Operate and maintain heater according to the manufacturer's recommendations and only combust pipeline quality natural gas.	0.01	LB/MMBTU		BACT-PSD	0			The permittee shall tune heater within 120 days of the initial operation and within 24-months of each preceding tune-up.
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Natural Gas-Fired Heater (P05)	Natural Gas	10	MMBTU/H	TPM10	Operate and maintain heater according to the manufacturer's recommendations and only combust pipeline quality natural gas.	0.01	LB/MMBTU		BACT-PSD	0			The permittee shall tune heater within 120 days of the initial operation and within 24-months of each preceding tune-up.
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Natural Gas-Fired Heater (P05)	Natural Gas	10	MMBTU/H	TPM2.5	Operate and maintain heater according to the manufacturer's recommendations and only combust pipeline quality natural gas.	0.01	LB/MMBTU		BACT-PSD	0			The permittee shall tune heater within 120 days of the initial operation and within 24-months of each preceding tune-up.
WI-0299	WPL- RIVERSIDE ENERGY CENTER	WI	19-POY-151	8/20/2020		Natural Gas	15.5	MMBTU/H	Particulate matter, total (TPM)	Only combust natural gas in each heater.	0.0075	LB/MMBTU		BACT-PSD	0			(a) Only combust natural gas in each heater; (b) Good combustion practices, defined as maintaining the heaters according to the manufacturer's recommendations; (c) PM emissions may not exceed 0.0075 pounds per MMBtu heat input.
WI-0299	WPL- RIVERSIDE ENERGY CENTER	WI	19-POY-151	8/20/2020		Natural Gas	15.5	MMBTU/H	Particulate matter, total; 10 µg (TPM10)	Only combust natural gas in each heater.	0.0075	LB/MMBTU		BACT-PSD	0			(a) Only combust natural gas in each heater; (b) Good combustion practices, defined as maintaining the heaters according to the manufacturer's recommendations; (c) PM10 emissions may not exceed 0.0075 pounds per MMBtu heat input.

Table E-17
RACT/BACT/LAER Clearing House Summary for PM Emissions from Heaters

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
WI-0299	WPL- RIVERSIDE ENERGY CENTER	WI	19-POY-151	8/20/2020		Natural Gas	15.5	MMBTU/H	Particulate matter, total; 2.5 µg (TPM2.5)	Only combust natural gas in each heater.	0.0075	LB/MMBTU		BACT-PSD	0			(a) Only combust natural gas in each heater; (b) Good combustion practices. Good combustion practices are defined as maintaining the heaters according to the manufacturer's recommendations; (c) PM2.5 emissions may not exceed 0.0075 pounds per MMBtu heat input.
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020		Natural Gas	275	MMBTu/hr	Particulate matter, total (TPM)	Good Combustion Practices and Clean Fuel (NG)	0.0079	LB/MMBTU	3-HOUR AVERAGE	BACT-PSD	0			EUs 31 - 33 have potential particulate matter emissions of 9.47 tpy each.
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020		Natural Gas	275	MMBTu/hr	Particulate matter, total; 10 µg (TPM10)	Good Combustion Practices and Clean Fuel (NG)	0.0079	LB/MMBTU	3-HOUR AVERAGE	BACT-PSD	0			EUs 31 - 33 have potential particulate matter emissions of 9.47 tpy each.
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020		Natural Gas	275	MMBTu/hr	Particulate matter, total; 2.5 µg (TPM2.5)	Good Combustion Practices and Clean Fuel (NG)	0.0079	LB/MMBTU	3-HOUR AVERAGE	BACT-PSD	0			EUs 31 - 33 have potential particulate matter emissions of 9.47 tpy each.
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020		Natural Gas	32	MMBTu/hr	Particulate matter, total (TPM)	Good Combustion Practices, Clean Fuels, and Limited Operation of 500 hours per year per heater.	0.0079	LB/MMBTU	3-HOUR AVERAGE	BACT-PSD	0			EUs 34 and 35 have 500 hour per year limit per heater, EUs 36 -38 have no hour limit.
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020		Natural Gas	32	MMBTu/hr	Particulate matter, total; 10 µg (TPM10)	Good Combustion Practices, Clean Fuels, and Limited Operation of 500 hours per year per heater.	0.0079	LB/MMBTU	3-HOUR AVERAGE	BACT-PSD	0			EUs 34 and 35 have 500 hour per year limit per heater, EUs 36 -38 have no hour limit.
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020		Natural Gas	32	MMBTu/hr	Particulate matter, total; 2.5 µg (TPM2.5)	Good Combustion Practices, Clean Fuels, and Limited Operation of 500 hours per year per heater.	0.0079	LB/MMBTU	3-HOUR AVERAGE	BACT-PSD	0			EUs 34 and 35 have 500 hour per year limit per heater, EUs 36 -38 have no hour limit.
*MI-0445	INDECK NILES, LLC	MI	75-168	11/26/2019		Natural gas	27	MMBTU/H	Particulate matter, filterable (FPM)	Good combustion practices	0.002	LB/MMBTU	HOURLY; EACH FUEL HEATER	BACT-PSD	0			At greater than \$40,000 for the least expensive option, none of the control technologies are economically feasible. Control technologies evaluated were a venture scrubber and various types of fabric filters and ESPs
*MI-0445	INDECK NILES, LLC	MI	75-168	11/26/2019		Natural gas	27	MMBTU/H	Particulate matter, total; 10 µg (TPM10)	Good combustion practices	0.1	LB/H	HOURLY; EACH FUEL HEATER	BACT-PSD	0			At greater than \$40,000 for the least expensive option, none of the control technologies are economically feasible. Control technologies evaluated were a venture scrubber and various types of fabric filters and ESPs.
*MI-0445	INDECK NILES, LLC	MI	75-168	11/26/2019		Natural gas	27	MMBTU/H	Particulate matter, total; 2.5 µg (TPM2.5)	Good combustion practices	0.1	LB/H	HOURLY; EACH FUEL HEATER	BACT-PSD	0			At greater than \$40,000 for the least expensive option, none of the control technologies are economically feasible. Control technologies evaluated were a venture scrubber and various types of fabric filters and ESPs.
MI-0442	THOMAS TOWNSHIP ENERGY, LLC	MI	210-18	8/21/2019	FGPREHEAT	natural gas	7	MMBTU/H	TPM	Low sulfur fuel (natural gas) and good combustion practices (efficient combustion).	1.9	LB/MMSCF	HOURLY; EACH UNIT	BACT-PSD	0			
MI-0442	THOMAS TOWNSHIP ENERGY, LLC	MI	210-18	8/21/2019	FGPREHEAT	natural gas	7	MMBTU/H	TPM10	Low sulfur fuel (natural gas) and good combustion practices (efficient combustion)	7.6	LB/MMSCF	HOURLY; EACH UNIT	BACT-PSD	0			
MI-0442	THOMAS TOWNSHIP ENERGY, LLC	MI	210-18	8/21/2019	FGPREHEAT	natural gas	7	MMBTU/H	TPM2.5	Low sulfur fuel (natural gas) and good combustion practices (efficient combustion).	7.6	LB/MMSCF	HOURLY; EACH UNIT	BACT-PSD	0			
VA-0332	CHICKAHOMINY POWER LLC	VA	52610-1	6/24/2019		Natural Gas	103	MMCF/YR	Particulate matter, total; 2.5 µg (TPM2.5)	: Good combustion practices and the use of pipeline quality natural gas with a maximum sulfur content of 0.4 gr/100 scf on a 12-month rolling average.	0.5	T/YR (EACH)		BACT-PSD	0			
VA-0332	CHICKAHOMINY POWER LLC	VA	52610-1	6/24/2019		Natural Gas	103	MMCF/YR	Particulate matter, total; 10 µg (TPM10)	Good combustion practices and the use of pipeline quality natural gas with a maximum sulfur content of 0.4 gr/100 scf on a 12-month rolling average.	0.4	T/YR		BACT-PSD	0			
IL-0130	JACKSON ENERGY CENTER	IL	17040013	12/31/2018		Natural Gas	13	mmBtu/hour	Particulate matter, total (TPM)	Good combustion practice	0.0075	LB/MMBTU		BACT-PSD	0			Emission Limit 1 applies for PM, PM10 and PM2.5
IL-0129	CPV THREE RIVERS ENERGY CENTER	IL	16060032	7/30/2018		Natural Gas	12.8	mmBtu/hr	Particulate matter, total (TPM)	Good combustion practice	0.0075	LB/MMBTU		BACT-PSD	0			The issued permit addresses TPM as PM, PM10 and PM2.5.
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	MI	19-18	7/16/2018		Natural gas	20.8	MMBTU/H	Particulate matter, filterable (FPM)	Low sulfur fuel	0.15	LB/H	HOURLY	BACT-PSD	0			
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	MI	19-18	7/16/2018		Natural gas	20.8	MMBTU/H	Particulate matter, total; 10 µg (TPM10)	Low sulfur fuel	0.15	LB/H	HOURLY	BACT-PSD	0			An oxidation catalyst is \$39,500/ton for PM10, CO and VOC together.
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	MI	19-18	7/16/2018		Natural gas	20.8	MMBTU/H	Particulate matter, total; 2.5 µg (TPM2.5)	Low sulfur fuel	0.15	LB/H	HOURLY	BACT-PSD	0			
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	MI	19-18	7/16/2018	EUFUELHTR2: Natural gas fired fuel heater	Natural gas	3.8	MMBTU/H	FPM	Low sulfur fuel	0.03	LB/H	HOURLY	BACT-PSD	0			
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	MI	19-18	7/16/2018	EUFUELHTR2: Natural gas fired fuel heater	Natural gas	3.8	MMBTU/H	TPM10	Low sulfur fuel	0.03	LB/H	HOURLY	BACT-PSD	0			An oxidation catalyst is \$39,500/ton for PM10, CO and VOC together.
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	MI	19-18	7/16/2018	EUFUELHTR2: Natural gas fired fuel heater	Natural gas	3.8	MMBTU/H	TPM2.5	Low sulfur fuel	0.03	LB/H	HOURLY	BACT-PSD	0			
VA-0328	CAGT, LLC	VA	52588	4/26/2018		natural gas	140	MMCF/YR	Particulate matter, total; 10 µg (TPM10)	Good combustion practices and the use of pipeline quality natural gas with a maximum sulfur content of 0.4 gr/100 scf on a 12 mo rolling av.	0.5	T/YR		BACT-PSD	0			
VA-0328	CAGT, LLC	VA	52588	4/26/2018		natural gas	140	MMCF/YR	Particulate matter, total; 2.5 µg (TPM2.5)	Good combustion practices and the use of pipeline quality natural gas with a maximum sulfur content of 0.4 gr/100 scf on a 12 mo rolling av.	0.5	T/YR		BACT-PSD	0			
OH-0374	GUERNSEY POWER STATION LLC	OH	P0122594	10/23/2017		Natural gas	15	MMBTU/H	Particulate matter, total (TPM)	Combustion control	0.075	LB/H		BACT-PSD	0.033	T/YR	PER ROLLING 12 MONTH PERIOD	
OH-0374	GUERNSEY POWER STATION LLC	OH	P0122594	10/23/2017		Natural gas	15	MMBTU/H	Particulate matter, total; 10 µg (TPM10)	Combustion control	0.075	LB/H		BACT-PSD	0.33	T/YR	PER ROLLING 12 MONTH PERIOD	
OH-0374	GUERNSEY POWER STATION LLC	OH	P0122594	10/23/2017		Natural gas	15	MMBTU/H	Particulate matter, total; 2.5 µg (TPM2.5)	Combustion control	0.075	LB/H		BACT-PSD	0.033	T/YR	PER ROLLING 12 MONTH PERIOD	

Table E-17
RACT/BACT/LAER Clearing House Summary for PM Emissions from Heaters

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
MI-0423	INDECK NILES, LLC	MI	75-16	1/4/2017		Natural gas	27	MMBTU/H	Particulate matter, filterable (FPM)	Good combustion practices.	0.002	LB/MMBTU	TEST PROTOCOL WILL SPECIFY AVG TIME.	BACT-PSD	0			The emission limit above of 0.002 LB/MMBTU is for each fuel heater. At greater than \$40,000 for the least expensive option, none of the control technologies are economically feasible. Control technologies evaluated were a scrubber and various types of fabric filters and ESPs.
MI-0423	INDECK NILES, LLC	MI	75-16	1/4/2017		Natural gas	27	MMBTU/H	Particulate matter, total; 10 µg (TPM10)	Good combustion practices.	0.2	LB/H	HOURLY; EACH FUEL HEATER	BACT-PSD	0			At greater than \$40,000 for the least expensive option, none of the control technologies are economically feasible. Control technologies evaluated were a scrubber and various types of fabric filters and ESPs.
MI-0423	INDECK NILES, LLC	MI	75-16	1/4/2017		Natural gas	27	MMBTU/H	Particulate matter, total; 2.5 µg (TPM2.5)	Good combustion practices.	0.2	LB/H	HOURLY; EACH FUEL HEATER	BACT-PSD	0			At greater than \$40,000 for the least expensive option, none of the control technologies are economically feasible. Control technologies evaluated were a scrubber and various types of fabric filters and ESPs.
MI-0424	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13C	12/5/2016	EUFUELHTR (Fuel pre-heater)	Natural gas	3.7	MMBTU/H	FPM	Good combustion practices.	0.007	LB/MMBTU	TEST PROTOCOL WILL SPECIFY AVG TIME	BACT-PSD	0			
MI-0424	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13C	12/5/2016	EUFUELHTR (Fuel pre-heater)	Natural gas	3.7	MMBTU/H	TPM10	Good combustion practices.	0.0075	LB/MMBTU	TEST PROTOCOL WILL SPECIFY AVG TIME	BACT-PSD	0			
MI-0424	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13C	12/5/2016	EUFUELHTR (Fuel pre-heater)	Natural gas	3.7	MMBTU/H	TPM2.5	Good combustion practices.	0.0075	LB/MMBTU	TEST PROTOCOL WILL SPECIFY AVG TIME.	BACT-PSD	0			
MD-0045	MATTAWOMAN ENERGY CENTER	MD	PSC CASE. NO. 9330	11/13/2015		NATURAL GAS	13.8	MMBTU/H	Particulate matter, filterable (FPM)	USE OF PIPELINE QUALITY NATURAL GAS AND GOOD COMBUSTION PRACTICES	0.0019	LB/MMBTU		BACT-PSD	0			
MD-0045	MATTAWOMAN ENERGY CENTER	MD	PSC CASE. NO. 9330	11/13/2015		NATURAL GAS	13.8	MMBTU/H	Particulate matter, total; 10 µg (TPM10)	USE OF PIPELINE QUALITY NATURAL GAS AND GOOD COMBUSTION PRACTICES	0.0075	LB/MMBTU	3-HOUR BLOCK AVERAGE	BACT-PSD	0			
MD-0045	MATTAWOMAN ENERGY CENTER	MD	PSC CASE. NO. 9330	11/13/2015		NATURAL GAS	13.8	MMBTU/H	Particulate matter, total; 2.5 µg (TPM2.5)	USE OF PIPELINE QUALITY NATURAL GAS AND GOOD COMBUSTION PRACTICES	0.0075	LB/MMBTU	3-HOUR BLOCK AVERAGE	BACT-PSD	0			
PA-0311	MOXIE FREEDOM GENERATION PLANT	PA	40-00129A	9/1/2015	Fuel Gas Heater		0		TPM		0.007	LB/MMBTU		BACT-PSD	0.45	TPY	12-MONTH ROLLING BASIS	
PA-0311	MOXIE FREEDOM GENERATION PLANT	PA	40-00129A	9/1/2015	Fuel Gas Heater		0		TPM2.5		0.007	LB/MMBTU		BACT-PSD	0.45	TPY	12-MONTH ROLLING BASIS	
PA-0311	MOXIE FREEDOM GENERATION PLANT	PA	40-00129A	9/1/2015	Fuel Gas Heater		0		TPM10		0.007	LB/MMBTU		BACT-PSD	0.45	TPY	12-MONTH ROLLING BASIS	
TX-0678	FREEPORT LNG PRETREATMENT FACILITY	TX	104840 N170 PSDTX1302	7/16/2014		natural gas	130	MMBTU/H	Particulate matter, total; 2.5 µg (TPM2.5)		0.91	LB/H	1 HOUR	BACT-PSD	0			Natural gas is the fuel
MD-0041	CPV ST. CHARLES	MD	PSC CASE NO. 9280	4/23/2014	FUEL GAS HEATER	NATURAL GAS	9.5	MMBTU/H	FPM	USE OF PIPELINE QUALITY NATURAL GAS AND GOOD COMBUSTION PRACTICES	0.007	LB/MMBTU		BACT-PSD	0			
MD-0041	CPV ST. CHARLES	MD	PSC CASE NO. 9280	4/23/2014	FUEL GAS HEATER	NATURAL GAS	9.5	MMBTU/H	TPM10	USE OF PIPELINE QUALITY NATURAL GAS AND GOOD COMBUSTION PRACTICES	0.007	LB/MMBTU		BACT-PSD	0			
IA-0107	MARSHALLTOWN GENERATING STATION	IA	13-A-499-P	4/14/2014		natural gas	13.32	mmBtu/hr	Particulate matter, total (TPM)		0.008	LB/MMBTU	3-HOUR AVERAGE	BACT-PSD	0			
MD-0042	WILDCAT POINT GENERATION FACILITY	MD	CPCN CASE NO. 9327	4/8/2014	DEW POINT HEATER	NATURAL GAS	5	MMBTU/H	FPM	EXCLUSIVE USE OF PIPELINE QUALITY NATURAL GAS AND GOOD COMBUSTION PRACTICES	0.0075	LB/MMBTU	3-HOUR AVERAGE BASIS	BACT-PSD	0			
MD-0042	WILDCAT POINT GENERATION FACILITY	MD	CPCN CASE NO. 9327	4/8/2014	DEW POINT HEATER	NATURAL GAS	5	MMBTU/H	TPM10	EXCLUSIVE USE OF PIPELINE QUALITY NATURAL GAS AND GOOD COMBUSTION PRACTICES	0.0075	LB/MMBTU	3-HOUR BLOCK AVERAGE	BACT-PSD	0			
MD-0042	WILDCAT POINT GENERATION FACILITY	MD	CPCN CASE NO. 9327	4/8/2014	DEW POINT HEATER	NATURAL GAS	5	MMBTU/H	TPM2.5	EXCLUSIVE USE OF PIPELINE QUALITY NATURAL GAS AND GOOD COMBUSTION PRACTICES	0.0075	LB/MMBTU	3-HOUR BLOCK AVERAGE	BACT-PSD	0			

Table E-17
RACT/BACT/LAER Clearing House Summary for PM Emissions from Heaters

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE	PA	06-05150A	12/17/2013	Fuel Preheater	Natural Gas	8.5	MMBTU/H	FPM10		0.007	LB/MMBTU		OTHER CASE-BY-CASE	0			
MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13	12/4/2013	Fuel pre-heater (EUFUELHTR)	natural gas	3.7	MMBTU/H	FPM	Good combustion practices.	0.007	LB/MMBTU	TEST PROTOCOL	BACT-PSD	0			
MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13	12/4/2013	Fuel pre-heater (EUFUELHTR)	natural gas	3.7	MMBTU/H	TPM10	Good combustion practices	0.0075	LB/MMBTU	TEST PROTOCOL	BACT-PSD	0			
MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13	12/4/2013	Fuel pre-heater (EUFUELHTR)	natural gas	3.7	MMBTU/H	TPM2.5	Good combustion practices.	0.0075	LB/MMBTU	TEST PROTOCOL	BACT-PSD	0			
MI-0406	RENAISSANCE POWER LLC	MI	51-13	11/1/2013		Natural gas	20	MMBTU/H	Particulate matter, filterable (FPM)	Good combustion practices	0.009	LB/MMBTU	TEST PROTOCOL	BACT-PSD	0			Test protocol will specify averaging time.
MI-0406	RENAISSANCE POWER LLC	MI	51-13	11/1/2013		Natural gas	20	MMBTU/H	Particulate matter, total; 10 µg (TPM10)	Good combustion practices	0.009	LB/MMBTU	TEST PROTOCOL	BACT-PSD	0			Test protocol will specify averaging time.
MI-0406	RENAISSANCE POWER LLC	MI	51-13	11/1/2013		Natural gas	20	MMBTU/H	Particulate matter, total; 2.5 µg (TPM2.5)	Good combustion practices	0.009	LB/MMBTU	TEST PROTOCOL	BACT-PSD	0			Test protocol will specify averaging time.
NY-0104	CPV VALLEY ENERGY CENTER	NY	3-335600136/00001	8/1/2013	Gas heater	natural gas	0		FPM	Natural gas.	0.0076	LB/MMBTU	1 H	BACT-PSD	0			Also PM-10.
MI-0410	THETFORD GENERATING STATION	MI	191-12	7/25/2013		Natural gas	12	BTU/H heat input each fuel heater	Particulate matter, total; 10 µg (TPM10)	Efficient combustion; natural gas fuel.	0.007	LB/MMBTU	TEST PROTOCOL WILL SPECIFY AVG. TIME	BACT-PSD	0			The PM10 limit is 0.007 LB/MMBTU heat input for EACH heater.
MI-0410	THETFORD GENERATING STATION	MI	191-12	7/25/2013		Natural gas	12	BTU/H heat input each fuel heater	Particulate matter, total; 2.5 µg (TPM2.5)	Efficient combustion; natural gas fuel.	0.007	LB/MMBTU	TEST PROTOCOL WILL SPECIFY AVG. TIME	BACT-PSD	0			The PM2.5 limit is 0.007 LB/MMBTU heat input for EACH heater.
MI-0410	THETFORD GENERATING STATION	MI	191-12	7/25/2013		Natural gas	12	BTU/H heat input each fuel heater	Particulate matter, filterable (FPM)	Efficient combustion; natural gas fuel.	0.0018	LB/MMBTU	TEST PROTOCOL WILL SPECIFY AVG. TIME	BACT-PSD	0			The PM limit is 0.0018 LB/MMBTU heat input for EACH heater.
PA-0288	SUNBURY GENERATION LP/SUNBURY SES	PA	55-00001E	4/1/2013		Natural Gas	15	MMBTU/H	Particulate matter, total (TPM)		0.008	LB/MMBTU		OTHER CASE-BY-CASE	0.46	T/YR	IN ANY 12 CONSECUTIVE MONTH PERIOD	

Table E-18
RACT/BACT/LAER Clearing House Summary for CO2e Emissions from Heaters

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
TX-0939	ORANGE COUNTY ADVANCED POWER STATION	TX	166032 PSDTX1598 GHGPSDTX210	3/13/2023		NATURAL GAS	16.8	mmBtu/hour	Dioxide Equivalent	Good combustion practices	0			BACT-PSD	0			
*IN-0371	WABASH VALLEY RESOURCES, LLC	IN	167-45208-00091	01/11/2024	Ammonia Catalyst Startup Heater	Natural Gas	29.01	MMBtu/hr	CO2e	Good Combustion Practices	117	LB/MMBTU		BACT-PSD	14.22	MMCF	PER TWELVE (12) CONSECUTIVE MONTH PERIOD	
*IN-0371	WABASH VALLEY RESOURCES, LLC	IN	167-45208-00091	01/11/2024	Dewpoint Heater	Natural Gas	1.44	MMBtu/hr	CO2e	Good Combustion Practices	117	LB/MMBTU		BACT-PSD	0			
*IL-0134	CRONUS CHEMICALS	IL	19110020	12/21/2023	Startup Heater	Natural Gas	47.7	mmBtu/hr	CO2e		604	TONS/YEAR	12-MONTH ROLLING AVG	BACT-PSD	604	TONS/BI-MONTH PERIOD	DURING COMMISSIONING/ SHAKEDOWN PERIOD	
*LA-0398	CAMERON LNG FACILITY	LA	PSD-LA-766(M4)	9/19/2023	Hot Oil Heaters	natural gas	90	mm btu/hr	CO2e	Use of low carbon fuels Good combustion/operation/main tenance practices Efficient design	0			BACT-PSD	0			
IN-0324	MIDWEST FERTILIZER COMPANY LLC	IN	129-44510-00059	5/6/2022	Startup Heater	natural gas	33.34	MMBtu/hr	CO2e	shall combust natural gas, shall be controlled by good combustion practices	200	HR/YR	TWELVE CONSECUTIVE MONTH PERIOD	BACT-PSD	3898	LB/HR		
AL-0329	COLBERT COMBUSTION TURBINE PLANT	AL	701-0010	9/21/2021	Three Gas Heaters	Natural Gas	10	MMBtu/hr	CO2e		117.1	LB/MMBTU		BACT-PSD	0			
TX-0908	NEWMAN POWER STATION	TX	N284, PSDTX1090M1, GHGPSDTX199	8/27/2021	LINE HEATER	NATURAL GAS	0		CO2e	Good combustions practices and properly maintaining the unit	0			BACT-PSD	0			
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Natural Gas-Fired Heater (P04)	Natural Gas	10	MMBTU/H	CO2e	Low-NOx burners, only combust pipeline quality natural gas, and operate and maintain heater according to manufacturer's recommendations.	0			BACT-PSD	0			Tune heater within 120 days of the initial operation of P04, and within 24-months of each preceding tune-up.
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Natural Gas-Fired Heater (P05)	Natural Gas	10	MMBTU/H	CO2e	Low-NOx burners, only combust pipeline quality natural gas, and operate and maintain according to manufacturer's recommendations.	0			BACT-PSD	0			Tune heater within 120 days of the initial operation, and within 24-months of each preceding tune-up.
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020		Natural Gas	275	MMBtu/hr	Dioxide Equivalent	Good combustion practices and clean burning fuel (NG)	117.1	LB/MMBTU	3-HOUR AVERAGE	BACT-PSD	0			Potential CO2e emissions of 140,914 tpy per heater. The 117.1 lb/MMBtu emission rate is the carbon dioxide equivalent (CO2e) emissions rates for burning natural gas in 40 CFR Part 98: Mandatory Greenhouse Gas Reporting. The total CO2e emissions rate is calculated with the equation CO2(1) + CH4(25) + N2O(298).
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020		Natural Gas	32	MMBtu/hr	Dioxide Equivalent	Good Combustion Practices, Clean Fuels, and Limited Operation of 500 hours per year per heater.	117.1	LB/MMBTU	3-HOUR AVERAGE	BACT-PSD	0			EUs 34 and 35 have 500 hour per year limit per heater, EUs 36 -38 have no hour limit. The 117.1 lb/MMBtu emission rate is the carbon dioxide equivalent (CO2e) emissions rates for burning natural gas in 40 CFR Part 98: Mandatory Greenhouse Gas Reporting. The total CO2e emissions rate is calculated with the equation CO2(1) + CH4(25) + N2O(298).
*MI-0445	INDECK NILES, LLC	MI	75-168	11/26/2019		Natural gas	27	mmBtu/hour	Dioxide Equivalent	Energy Efficiency Measures and the use of a low carbon fuel (pipeline quality natural gas)	13848	T/YR	12-MO ROLLING TIME PERIOD	BACT-PSD	0			The CO2e limit is for both units combined.

Table E-18
RACT/BACT/LAER Clearing House Summary for CO2e Emissions from Heaters

MI-0442	THOMAS TOWNSHIP ENERGY, LLC	MI	210-18	8/21/2019	FGPREHEAT	natural gas	7	MMBTU/H	CO2e	Energy efficiency	3590	T/YR	12-MO ROLLING TIME PERIOD; EACH UNIT	BACT-PSD	0			
VA-0332	CHICKAHOMINY POWER LLC	VA	52610-1	6/24/2019		Natural Gas	103	MMCF/YR	Dioxide Equivalent	use of natural gas and high efficiency design and operation	6261	T/YR		BACT-PSD	0			
IL-0130	JACKSON ENERGY CENTER	IL	17040013	12/31/2018		Natural Gas	13	mmBtu/hour	Dioxide Equivalent	Good combustion practice	6700	TONS/YEAR	12-MONTH ROLLING AVERAGE	BACT-PSD	0			
IL-0129	CPV THREE RIVERS ENERGY CENTER	IL	16060032	7/30/2018		Natural Gas	12.8	mmBtu/hr	Dioxide Equivalent	Good combustion practice	6600	TON/YR	12-MONTH ROLLING AVERAGE	BACT-PSD	0			
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	MI	19-18	7/16/2018		Natural gas	20.8	mmBtu/hour	Dioxide Equivalent	Natural gas fuel	6310	T/YR	12-MO ROLLING TIME PERIOD	BACT-PSD	0			The emission limit above is the Total for EUFUELHTR1 & EUFUELHTR2.
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	MI	19-18	7/16/2018	EUFUELHTR2: Natural gas fired fuel heater	Natural gas	3.8	mmBtu/hour	CO2e	Natural gas fuel	6310	T/YR	12-MONTH ROLLING TIME PERIOD	BACT-PSD	0			
VA-0328	C4GT, LLC	VA	52588	4/26/2018		natural gas	140	MMCF/YR	Dioxide Equivalent	use of natural gas and high efficiency design and operation	8208	T/YR		BACT-PSD	0			
OH-0374	GUERNSEY POWER STATION LLC	OH	P0122594	10/23/2017		Natural gas	15	mmBtu/hour	Dioxide Equivalent	Natural gas, low-emitting fuel	7695	T/YR	PER ROLLING 12 MONTH PERIOD	BACT-PSD	0			
MI-0423	INDECK NILES, LLC	MI	75-16	1/4/2017		Natural gas	27	mmBtu/hour	Dioxide Equivalent	Energy efficiency measures and the use of a low carbon fuel (pipeline quality natural gas).	13848	T/YR	12-MO ROLLING TIME PERIOD; COMBINED LIMIT	BACT-PSD	0			The CO2e limit is for both units combined.
MI-0424	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13C	12/5/2016	EUFUELHTR (Fuel pre-heater)	Natural gas	3.7	mmBtu/hour	CO2e	Good combustion practices.	1934	T/YR	12-MO ROLLING TIME PERIOD	BACT-PSD	0			
PA-0311	MOXIE FREEDOM GENERATION PLANT	PA	40-00129A	9/1/2015	Fuel Gas Heater		0		CO2e		7845	TPY	12-MONTH ROLLING BASIS	BACT-PSD	0			
IA-0107	MARSHALLTOWN GENERATING STATION	IA	13-A-499-P	4/14/2014		natural gas	13.32	mmBtu/hr	Dioxide Equivalent (CO2e)		6860	TONS	12-MONTH ROLLING TOTAL	BACT-PSD	0			
IA-0107	MARSHALLTOWN GENERATING STATION	IA	13-A-499-P	4/14/2014		natural gas	13.32	mmBtu/hr	Dioxide Equivalent (CO2e)		6860	TONS	12-MONTH ROLLING TOTAL	BACT-PSD	0			
MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13	12/4/2013	Fuel pre-heater (EUFUELHTR)	natural gas	3.7	mmBtu/hour	CO2e	Good combustion practices	1934	T/YR	12-MO ROLLING TIME PERIOD	BACT-PSD	0			
MI-0410	THETFORD GENERATING STATION	MI	191-12	7/25/2013		Natural gas	12	mmBtu/hour	Dioxide Equivalent	Efficient combustion; energy efficiency.	6156	T/YR	12-MO ROLL TIME PERIOD	BACT-PSD	0			The CO2e limit is 6.156 T/YR based on a 12-month rolling time period as determined at the end of each calendar month for EACH heater.

Table E-19
RACT/BACT/LAER Clearing House Summary for NOx Emissions from Generators

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
FL-0367	SHADY HILLS COMBINED CYCLE FACILITY	FL	1010524-001-AC	7/27/2018		ULSD	14.82	MMBtu/hour	Nitrogen Oxides (NOx)	Operate and maintain the engine according to the manufacturer's written instructions	6.4	G/KW-HOUR		BACT-PSD	0			Standard equals Subpart IIII limit. Limit is for NOX and Non-Methane Hydrocarbons
*IN-0371	WABASH VALLEY RESOURCES, LLC	IN	167-45208-00091	1/11/2024	Emergency generator	Diesel	500	kw	NOx	Good Combustion Practices and meeting NSPS Subpart IIII requirements.	4.8	G/HP-HR		BACT-PSD	0			
*IN-0371	WABASH VALLEY RESOURCES, LLC	IN	167-45208-00091	1/11/2024	Emergency generator	Diesel	619	hp	NOx	Good Combustion Practices and meeting NSPS Subpart IIII requirements.	2.29	G/HP-HR		BACT-PSD	0			
*IN-0371	WABASH VALLEY RESOURCES, LLC	IN	167-45208-00091	1/11/2024	Emergency generator	Diesel	1000	kw	NOx	Good Combustion Practices and meeting NSPS Subpart IIII requirements.	3.81	G/HP-HR		BACT-PSD	0			
*IN-0371	WABASH VALLEY RESOURCES, LLC	IN	167-45208-00091	1/11/2024	Emergency generator	Diesel	2000	kw	NOx	Good Combustion Practices and meeting NSPS Subpart IIII requirements.	3.81	G/HP-HR		BACT-PSD	0			
*IL-0134	CRONUS CHEMICALS, LLC	IL	19110020	12/21/2023	Emergency generator engine	Diesel	3985	hp	NOx		6.4	G/KW-HR	3-HR AVG	BACT-PSD	75	HR/YR		
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Emergency generator	Diesel	3634	hp	NOx	Compliance with 40 CFR 60 Subpart IIII	38.24	LB/HR		BACT-PSD	0			
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Emergency generator	Diesel	2923	hp	NOx	Compliance with the requirements of 40 CFR 60 Subpart IIII	28.48	LB/HR		BACT-PSD	0			
*LA-0394	GEISMAR PLANT	LA	PSD-LA-647(M-9)	12/12/2023	Emergency generator	Diesel	670	hp	NOx	Use of good combustion practices and compliance with NSPS Subpart IIII	4.24	LB/HR	HOURLY MAXIMUM	BACT-PSD	0			
*IN-0365	MAPLE CREEK ENERGY LLC	IN	T153-45909-00056	6/19/2023	Emergency generator	ULSD	2012	hp	NOx		4.8	G/HP-HR		BACT-PSD	0			NOx and NMHC limited to 4.8 g/hp-hr
LA-0308	MORGAN CITY POWER PLANT	LA	PSD-LA-767	9/26/2013		Diesel	20.4	MMBTU/hr	Nitrogen Oxides (NOx)	Good combustion and maintenance practices, and compliance with NSPS 40 CFR 60 Subpart IIII	33.07	LB/H	HOURLY MAXIMUM	BACT-PSD	1.38	T/YR	ANNUAL MAXIMUM	
LA-0313	ST. CHARLES POWER STATION	LA	PSD-LA-804	8/31/2016		Diesel	2584	HP	Nitrogen Oxides (NOx)	Compliance with NESHAP 40 CFR 63 Subpart ZZZZ and NSPS 40 CFR 60 Subpart IIII, and good combustion practices (use of ultra-low sulfur diesel fuel).	27.34	LB/H	HOURLY MAXIMUM	BACT-PSD	6.84	T/YR	ANNUAL MAXIMUM	BACT Limit = 4.8 G/BHP-HR (NMHC + NOx)
IN-0359	NUCOR STEEL	IN	107-45480-00038	3/30/2023	Emergency Generator (CC-GEN1)	diesel	3000	hp	NOx	certified engine	4.8	G/HP-HR		BACT-PSD	0			
IN-0359	NUCOR STEEL	IN	107-45480-00038	03/30/2023	Emergency generator	Diesel	500	hp	NOx	certified engine	3	G/HP-HR		BACT-PSD	0			
*LA-0324	COMMONWEALTH LNG FACILITY	LA	PSD-LA-841	3/28/2023	Emergency generator	Diesel	4290	kW	NOx	Compliance with 40 CFR 60 Subpart IIII and operating engines per manufacturers' instructions and written procedures designed to maximize combustion efficiency and minimize fuel usage.	8.46	G/KW-HR		BACT-PSD	0			

Table E-19
RACT/BACT/LAER Clearing House Summary for NOx Emissions from Generators

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
LA-0364	FG LA COMPLEX	LA	PSD-LA-812	1/6/2020	Emergency Generator Diesel Engines	Diesel Fuel	550	hp	NOx	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0			BACT-PSD	0			Engines are limited to 100 hours of non-emergency use.
LA-0391	MAGNOLIA POWER GENERATING STATION UNIT 1	LA	PSD-LA-839	6/3/2022	Emergency Diesel Generator Engine	Diesel	2937	hp	NOx	Compliance with 40 CFR 60 Subpart IIII, good combustion practices, and use of ultra-low sulfur diesel fuel.	4.8	G/HP-HR		BACT-PSD	0			BACT limit is 4.8 g/BHP-hr (NOx + NMHC). Compliance with 40 CFR 60 Subpart IIII (Tier 2 non-road engines) standards, good combustion practices, and the use of ultra-low sulfur diesel fuel.
MD-0042	WILDCAT POINT GENERATION FACILITY	MD	CPCN CASE NO. 9327	4/8/2014		ULTRA LOW SULFU DIESEL	2250	KW	Nitrogen Oxides (NOx)	LIMITED OPERATING HOURS, USE OF ULTRA-LOW SULFUR FUEL AND GOOD COMBUSTION PRACTICES	4.8	G/HP-H		LAER	6.4	G/KW-H		COMBINED NOX AND NMHC
MD-0045	MATTAWOMAN ENERGY CENTER	MD	PSC CASE. NO. 9330	11/13/2015		ULTRA-LOW SULFUR DIESEL	1490	HP	Nitrogen Oxides (NOx)	EXCLUSIVE USE OF ULTRA LOW SULFUR FUEL AND GOOD COMBUSTION PRACTICES	6.4	G/KW-H		BACT-PSD	0			INCLUDES NITROGEN OXIDES (NOx) AND NON-METHANE HYDROCARBONS (NMHC). NSPS SUBPART IIII.
NJ-0085	MIDDLESEX ENERGY CENTER, LLC	NJ	19149/PCP150001	7/19/2016		DIESEL OIL	0	100 H/YR	Nitrogen Oxides (NOx)	Use of Ultra Low Sulfur Diesel (ULSD) Oil a clean burning fuel and limited hours of operation	20.6	LB/H		LAER	0			
OH-0352	OREGON CLEAN ENERGY CENTER	OH	P0110840	6/18/2013		diesel	2250	KW	Nitrogen Oxides (NOx)	Purchased certified to the standards in NSPS Subpart IIII	27.8	LB/H		BACT-PSD	6.95	T/YR	PER ROLLING 12- MONTHS	Additional limits: 5.61 g NOx/kW-H; and 6.4 g NMHC + NOx/kW-hr, the standard from Subpart IIII. Method 7E if required.
OH-0360	CARROLL COUNTY ENERGY	OH	P0113762	11/5/2013		diesel	1112	KW	Nitrogen Oxides (NOx)	Purchased certified to the standards in NSPS Subpart IIII	13.74	LB/H		BACT-PSD	3.44	T/YR	PER ROLLING 12 MONTH PERIOD	Additional limits: 5.61 g NOx/kW-H; and 6.4 g NMHC + NOx/kW-hr, the standard from Subpart IIII.
OH-0363	NTE OHIO, LLC	OH	P0116610	11/5/2014		Diesel fuel	1100	KW	Nitrogen Oxides (NOx)	Emergency operation only, < 500 hours/year each for maintenance checks and readiness testing designed to meet NSPS Subpart IIII	29.01	LB/H		BACT-PSD	7.25	T/YR	PER ROLLING 12 MONTH PERIOD	
OH-0366	CLEAN ENERGY FUTURE LORDSTOWN, LLC	OH	P0117655	8/25/2015		Diesel fuel	2346	HP	Nitrogen Oxides (NOx)	State-of-the-art combustion design	21.6	LB/H		BACT-PSD	5.41	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 5.61 g/kW-hr and Non-methane hydrocarbon (NMHC) + NOx emissions shall not exceed 6.4 g/kW-hr.

Table E-19
RACT/BACT/LAER Clearing House Summary for NOx Emissions from Generators

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
OH-0367	SOUTH FIELD ENERGY LLC	OH	P0119495	9/23/2016		Diesel fuel	2947	HP	Nitrogen Oxides (NOx)	State-of-the-art combustion design	27.18	LB/H		BACT-PSD	6.8	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 5.61 g/kW-hr. NSPS: Non-methane hydrocarbon (NMHC) + NOx emissions shall not exceed 6.4 g/kW-hr.
OH-0370	TRUMBULL ENERGY CENTER	OH	P0122331	9/7/2017		Diesel fuel	1529	HP	Nitrogen Oxides (NOx)	State-of-the-art combustion design	16.07	LB/H		BACT-PSD	4.02	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 6.4 g/kW-hr. NSPS limit is Non-methane hydrocarbon (NMHC) + NOx emissions shall not exceed 6.4 g/kW-hr.
OH-0372	OREGON ENERGY CENTER	OH	P0121049	9/27/2017		Diesel fuel	1529	HP	Nitrogen Oxides (NOx)	State-of-the-art combustion design	16.1	LB/H		BACT-PSD	4.02	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 6.4 g/kW-hr (4.8 g/hp-hr). NSPS: Non-methane hydrocarbon (NMHC) + NOx emissions shall not exceed 6.4 g/kW-hr.
OH-0374	GUERNSEY POWER STATION LLC	OH	P0122594	10/23/2017		Diesel fuel	2206	HP	Nitrogen Oxides (NOx)	Certified to the meet the emissions standards in 40 CFR 89.112 and 89.113 pursuant to 40 CFR 60.4205(b) and 60.4202(a)(2). Good combustion practices per the manufacturer's operating manual.	23.21	LB/H	NMHC+NOX. SEE NOTES.	BACT-PSD	1.16	T/YR	NMHC+NOX. SEE NOTES.	Non-methane hydrocarbon plus nitrogen oxides (NMHC+NOx) emissions shall not exceed 6.40 g/kW-hour (4.77 G/BHP-H), 23.21 pounds per hour and 1.16 tons per rolling, 12-month period.
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	OH	P0122829	11/7/2017		Diesel fuel	2206	HP	Nitrogen Oxides (NOx)	Good combustion design	24.71	LB/H	NMHC+NOX. SEE NOTES.	BACT-PSD	1.24	T/YR	NMHC+NOX. SEE NOTES.	Non-methane hydrocarbon plus nitrogen oxides (NMHC+NOx) emissions shall not exceed 6.40 g/kW-h (4.8 g/hp-h), 24.71 lb/h and 1.24 t/yr per rolling, 12-month period.
OH-0377	HARRISON POWER	OH	P0122266	4/19/2018		Diesel fuel	1860	HP	Nitrogen Oxides (NOx)	Good combustion practices (ULSD) and compliance with 40 CFR Part 60, Subpart IIII	19.68	LB/H	NMHC+NOX. SEE NOTES.	BACT-PSD	0.98	T/YR	NMHC+NOX. SEE NOTES.	All emissions limits are for Non-methane hydrocarbon (NMHC) + NOX emissions. 0.98 t/yr per rolling, 12-month period. NSPS: Non-methane hydrocarbon (NMHC) + NOX emissions shall not exceed 6.4 g/kW-hr (4.8 g/hp-hr).
OK-0154	MOORELAND GENERATING STA	OK	2008-302-C(M-1)PSD	7/2/2013		DIESEL	1341	HP	Nitrogen Oxides (NOx)	COMBUSTION CONTROL	0.011	LB/HP-HR		BACT-PSD	0			
PA-0291	HICKORY RUN ENERGY STATION	PA	37-337A	4/23/2013		Ultra Low sulfur Distillate	7.8	MMBTU/H	Nitrogen Oxides (NOx)		9.89	LB/H		OTHER CASE-BY-CASE	0.49	T/YR	12-MONTH ROLLING TOTAL	
PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE	PA	06-05150A	12/17/2013		Ultra Low Sulfur Distillate	60	Gal/hr	Nitrogen Oxides (NOx)		0.53	T/YR	BASED ON 12-MONTH ROLLING TOTAL	OTHER CASE-BY-CASE	0			
VA-0332	CHICKAHOMINY POWER LLC	VA	52610-1	6/24/2019	Emergency Diesel Generator - 300 kW	ULSD	500	H/YR	NOx	good combustion practices, high efficiency design, and the use of ultra low sulfur diesel (\$15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	4.8	G/HP-H		BACT-PSD	11.7	T/YR	12 MO ROLLING AVG	Emission Limit 3: 4.8 G/HP - HR
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Emergency Diesel Generator (P07)	Diesel	1490	HP	NOx	Operation limited to 500 hours/year and operate and maintain according to the manufacturer's recommendations.	4.8	G/HP-H		BACT-PSD	0			
WV-0025	MOUNDSVILLE COMBINED CYCLE POWER PLANT	WV	R14-0030	11/21/2014		Diesel	2015.7	HP	Nitrogen Oxides (NOx)		0			BACT-PSD	0			
*WV-0033	MAIDSVILLE	WV	R14-0038	1/5/2022	Emergency Generator	ULSD	2100	hp	NOx	Combustion Control (retarded timing and/or lean burn)	24.6	LB/HR		BACT-PSD	6.4	G/BKW	G/BKW	Certified Engine
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	One (1) Black Start Generator Engine	ULSD	186.6	gph	NOx	Good combustion practices, limit operation to 500 hours per year.	3.3	G/HP-HR	3-HOUR AVERAGE	BACT-PSD	0			EU 39 is an EPA Tier 4 Final Engine. 3.3 g/hp-hr limit includes 25% not to exceed factor of safety.

Table E-19
RACT/BACT/LAER Clearing House Summary for NOx Emissions from Generators

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	Three (3) Firewater Pump Engines and two (2) Emergency Diesel Generators	ULSD	19.4	gph	NOx	Good combustion practices, limit operation to 500 hours per year per engine	3.6	G/HP-HR	3-HOUR AVERAGE	BACT-PSD	0			EUs 40 - 44 are required to achieve EPA Tier 3 emission status. 3.6 g/hp-hr limit is 95% of the total for NMHC + NOx and includes a 25% not to exceed factor of safety.
VA-0328	C4GT, LLC	VA	52588	4/26/2018		Ultra Low Sulfur Diesel	500	H/YR	Nitrogen Oxides (NOx)	good combustion practices and the use of ultra low sulfur diesel (S15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	4.8	G/HP H		BACT-PSD	9.6	T/YR	12 MO ROLLING AV	NOx + NMHC
IL-0133	LINCOLN LAND ENERGY CENTER	IL	18040008	7/29/2022	Emergency Engines	ULSD	1250	KW	NOx		6.4	GRAMS	KILOWATT-HOUR	BACT-PSD	0			Limit 1 includes non-methane hydrocarbons (NMHC), i.e. NOx + NMHC, consistent with the NSPS, 40 CFR 60 Subpart IIII.
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018		Diesel Fuel	5364	HP	Nitrogen Oxides (NOx)	Good Combustion and Operating Practices	5.6	G/KW-H		BACT-PSD	0			Comply with 40 CFR 60 Subpart IIII and limiting normal operations to 100 hr/yr.
MD-0046	KEYS ENERGY CENTER	MD	PSC CASE NO. 9297	10/31/2014		ULTRA-LOW SULFUR DIESEL	1500	KW	Nitrogen Oxides (NOx)	EXCLUSIVE USE OF ULTRA LOW SULFUR FUEL AND GOOD COMBUSTION PRACTICES	6.4	G/KW-H		BACT-PSD	0			FOR COMBINED NON-METHANE HYDROCARBONS (NMHC) AND NITROGEN OXIDES (NOX), NSPS SUBPART IIII.
MI-0441	LBWL--ERICKSON STATION	MI	74-18	12/21/2018		Diesel	1500	HP	Nitrogen Oxides (NOx)	Good combustion practices and will be NSPS compliant.	6.4	G/KW-H	HOURLY	BACT-PSD	0			Emission limit is for NMHC+NOx. Did not consider the additional control to be technically feasible since many controls don't function properly for small emitters and intermittent sources.
MI-0454	LBWL-ERICKSON STATION	MI	74-18D	12/20/2022	EUEMGD	Diesel	4474.2	KW	NOx	Good combustion practices and will be NSPS compliant.	6.4	G/KW-H	HOURLY	BACT-PSD	0			Emission limit is for NMHC + NOx. Did not consider the additional control to be technically feasible since many controls don't function properly for small emitters and intermittent sources.
LA-0308	MORGAN CITY POWER PLANT	LA	PSD-LA-767	9/26/2013		Diesel	20.4	MMBTU/hr	Nitrous Oxide (N2O)	Good combustion practices	0			BACT-PSD	0			BACT Limit: N2O = 0.0013 lb/MMBTU (12 month average)

Table E-20
RACT/BACT/LAER Clearing House Summary for CO Emissions from Generators

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
*IL-0134	CRONUS CHEMICALS, LLC	IL	19110020	12/21/2023	Emergency generator engine	diesel fuel	3985	hp	CO		3.5	G/KW-HR	3-HR AVG	BACT-PSD	75	HR/YR		
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Emergency generator	Diesel	3634	hp	CO	Compliance with 40 CFR 60 Subpart IIII	20.91	LB/HR		BACT-PSD	0			
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Emergency generator	Diesel	2923	hp	CO	Compliance with the requirements of 40 CFR 60 Subpart IIII	2.9	LB/HR		BACT-PSD	0			
*LA-0394	GEISMAR PLANT	LA	PSD-LA-647(M-9)	12/12/2023	Emergency generator	Diesel	670.5	hp	CO	Use of good combustion practices, compliance with NSPS Subpart IIII	3.81	LB/HR	HOURLY MAXIMUM	BACT-PSD	0			
*IN-0365	MAPLE CREEK ENERGY LLC	IN	T153-45909-00056	6/19/2023	Emergency generator	ULSD	2012	hp	CO		2.6	G/HP-HR		BACT-PSD	0			
IN-0359	NUCOR STEEL	IN	107-45480-00038	3/30/2023	Emergency Generator (CC-GEN1)	diesel	3000	hp	CO	oxidation catalyst and certified engine	2.61	G/HP-HR		BACT-PSD	0			
IN-0359	NUCOR STEEL	IN	107-45480-00038	03/30/2023	Emergency generator	Diesel	500	hp	CO	oxidation catalyst and certified engine	2.61	G/HP-HR		BACT-PSD	0			
*LA-0324	COMMONWEALTH LNG FACILITY	LA	PSD-LA-841	3/28/2023	Emergency generator	Diesel	4290	kW	CO	ufacturers' instructions and written procedures	1.21	G/KW-HR		BACT-PSD	0			
TX-0939	ORANGE COUNTY ADVANCED POWER STATION	TX	166032 PSDTX1598 GHGPSDTX210	3/13/2023	EMERGENCY GENERATOR	DIESEL	18.7	MMBTU/HR	CO	GOOD COMBUSTION PRACTICES, LIMITED TO 100 HR/YR	0.006	LB/HP HR		BACT-PSD	0			
MI-0454	LBWL-ERICKSON STATION	MI	74-18D	12/20/2022	EUEMGD	Diesel	4474.2	KW	CO	Good combustion practices and will be NSPS compliant.	3.5	G/KW-H	HOURLY	BACT-PSD	0			Catalytic oxidation was the control considered technically feasible. However, it was not considered economically feasible.
IL-0133	LINCOLN LAND ENERGY CENTER	IL	18040008	7/29/2022	Emergency Engines	ULSD	1250	kW	CO		3.5	GRAMS	KILOWATT-HOUR	BACT-PSD	0			Emission Limit 1 is consistent with the NSPS, 40 CFR 60 Subpart IIII.
LA-0391	MAGNOLIA POWER GENERATING STATION UNIT 1	LA	PSD-LA-839	6/3/2022	Emergency Diesel Generator Engine	ULSD	2937	hp	CO	Compliance with 40 CFR 60 Subpart IIII, good combustion practices, and the use of ultra-low sulfur diesel fuel.	2.6	G/HP-HR		BACT-PSD	0			BACT limit is 2.6 g/BHP-hr. Compliance with 40 CFR 60 Subpart IIII (Tier 2 non-road engines) standards, good combustion practices, and the use of ultra-low sulfur diesel fuel.
*WV-0033	MAIDSVILLE	WV	R14-0038	1/5/2022	Emergency Generator	ULSD	2100	hp	CO	Good Combustion Practices w/ OxCat. Applicant did not justify why an oxcat is infeasible for an emergency engine	1.94	LB/HR		BACT-PSD	0.41	G/BKW	NMHC+NOX	Certified Engine
FL-0371	SHADY HILLS COMBINED CYCLE FACILITY	FL	1010524-003-AC (PSD-FL-444A)	6/7/2021	1,500 kW Emergency Diesel Generator	ULSD	14.82	MMBtu/hour	CO		3.5	G/KW-HOUR		BACT-PSD	0			
TX-0915	UNIT 5	TX	160538, PSDTX1528, GHGPSDTX204	3/17/2021	DIESEL GENERATOR	DIESEL	0		CO	LIMITED 500 HR/YR OPERATION	2.61	G/HPHR		BACT-PSD	0			
MI-0447	LBWL--ERICKSON STATION	MI	74-18A	1/7/2021	EUEMGD--emergency engine	diesel fuel	4474.2	KW	CO	Good combustion practices and will be NSPS compliant.	3.5	G/KW-H	HOURLY	BACT-PSD	0			Catalytic oxidation was the control considered technically feasible. However, it was not considered economically feasible.
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Emergency Diesel Generator (P07)	Diesel	1490	HP	CO	Operation limited to 500 hours/year, and operate and maintain generator according to the manufacturer's recommendations.	2.6	G/HP-H		BACT-PSD	0			
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	One (1) Black Start Generator Engine	ULSD	186.6	gph	CO	Oxidation Catalyst, Good Combustion Practices, and 500 hour limit per year.	3.3	G/HP-HR	3-HOUR AVERAGE	BACT-PSD	0			EU 39 is an EPA Tier 4 Final Engine. 3.3 g/hp-hr limit includes 25% not to exceed factor of safety.

Table E-20
RACT/BACT/LAER Clearing House Summary for CO Emissions from Generators

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	Three (3) Firewater Pump Engines and two (2) Emergency Diesel Generators	ULSD	19.4	gph	CO	Good combustion practices, limit operation to 500 hours per year per engine	3.3	G/HP-HR	3-HOUR AVERAGE	BACT-PSD	0			EUs 40 - 44 are required to achieve EPA Tier 3 emission status. 3.3 g/hp-hr limit includes a 25% not to exceed factor of safety.
LA-0364	FG LA COMPLEX	LA	PSD-LA-812	1/6/2020	Emergency Generator Diesel Engines	Diesel Fuel	550	hp	CO	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0			BACT-PSD	0			Engines are limited to 100 hours of non-emergency use.
VA-0332	CHICKAHOMINY POWER LLC	VA	52610-1	6/24/2019	Emergency Diesel Generator - 300 kW	ULSD	500	H/YR	CO	good combustion practices, high efficiency design, and the use of ultra low sulfur diesel (S15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	2.6	G/HP-H		BACT-PSD	6.4	T/YR	12 MO ROLLING AVG	
IL-0130	JACKSON ENERGY CENTER	IL	17040013	12/31/2018	Emergency Engine	ULSD	1500	kW	CO		3.5	G/KW-HR		BACT-PSD	0			NSPS Subpart IIII limit of 3.5 g/kW-hr is BACT
MI-0441	LBWL--ERICKSON STATION	MI	74-18	12/21/2018	EUEMGD1--A 1500 HP diesel fueled emergency engine	Diesel	1500	HP	CO	Good combustion practices and will be NSPS compliant.	3.5	G/KW-H	HOURLY	BACT-PSD	0			Catalytic oxidation was the control considered technically feasible. However, it was not considered economically feasible.
MI-0441	LBWL--ERICKSON STATION	MI	74-18	12/21/2018	EUEMGD2--A 6000 HP diesel fuel fired emergency engine	Diesel	6000	HP	CO	Good combustion practices and will be NSPS compliant.	3.5	G/KW-H	HOURLY	BACT-PSD	0			Catalytic oxidation was the control considered technically feasible. However, it was not considered economically feasible.
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Large Emergency Engines (>50kW)	Diesel Fuel	5364	HP	CO	Good Combustion and Operating Practices.	3.5	G/KW-H		BACT-PSD	0			Comply with 40 CFR 60 Subpart IIII and limiting normal operations to 100 hr./yr.
IL-0129	CPV THREE RIVERS ENERGY CENTER	IL	16060032	7/30/2018	Emergency Engines	ULSD	0		CO		0			BACT-PSD	0			Limits of the NSPS, 40 CFR 60 Subpart IIII, are BACT for CO. For the large engine: 3.5 g/kW-hr For the small engine: 5.0 g/kW-hr Permit limits are as follows: For the large engine: 12.5 lb/hr and 0.9 ton/yr For the small engine 1.5 lb/hr and 0.11 ton/yr
FL-0367	SHADY HILLS COMBINED CYCLE FACILITY	FL	1010524-001-AC	7/27/2018	1,500 kW Emergency Diesel Generator	ULSD	14.82	MMBtu/hour	CO	Operate and maintain the engine according to the manufacturer's written instructions	3.5	G/KW-HOUR		BACT-PSD	0			Equals Subpart IIII limit
VA-0328	C4GT, LLC	VA	52588	4/26/2018	Emergency Diesel GEN	ULSD	500	H/YR	CO	good combustion practices and the use of ultra low sulfur diesel (S15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	2.6	G/HP H		BACT-PSD	5.2	T/YR	12 MO ROLLING TOTAL	
FL-0363	DANIA BEACH ENERGY CENTER	FL	0110037-017-AC	12/4/2017	Two 3300 kW emergency generators	ULSD	0		CO	Certified engine	3.5	GRAMS PER KWH		BACT-PSD	0			Equals Subpart IIII limit
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	OH	P0122829	11/7/2017	Emergency Diesel Generator Engine (P001)	Diesel fuel	2206	HP	CO	Good combustion design	12.64	LB/H		BACT-PSD	0.63	T/YR	PER ROLLING 12 MONTH PERIOD	CO Standard limit is 3.5 g/kW-hr (2.6 g/hp-hr).
OH-0374	GUERNSEY POWER STATION LLC	OH	P0122594	10/23/2017	Emergency Generators (2 Identical, P004 and P005)	Diesel fuel	2206	HP	CO	Certified to the meet the emissions standards in 40 CFR 89.112 and 89.113 pursuant to 40 CFR 60.4205(b) and 60.4202(a)(2). Good combustion practices per the manufacturer's operating manual.	12.69	LB/H		BACT-PSD	0.63	T/YR	PER ROLLING 12 MONTH PERIOD	CO Standard limit is 3.5 g/kW-hr (2.6 g/hp-hr).
OH-0372	OREGON ENERGY CENTER	OH	P0121049	9/27/2017	Emergency generator (P003)	Diesel fuel	1529	HP	CO	State-of-the-art combustion design	8.8	LB/H		BACT-PSD	2.2	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit is 3.5 g/kW-hr (2.6 g/hp-hr).

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RACT/BACT/LAER Clearing House Summary for CO Emissions from Generators

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
OH-0370	TRUMBULL ENERGY CENTER	OH	P0122331	9/7/2017	Emergency generator (P003)	Diesel fuel	1529	HP	CO	State-of-the-art combustion design	8.8	LB/H		BACT-PSD	2.2	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 3.5 g/kW-hr.
OH-0367	SOUTH FIELD ENERGY LLC	OH	P0119495	9/23/2016	Emergency generator (P003)	Diesel fuel	2947	HP	CO	State-of-the-art combustion design	16.96	LB/H		BACT-PSD	4.24	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 3.5 g/kW-hr.
PA-0310	CPV FAIRVIEW ENERGY CENTER	PA	11-00536A	9/2/2016	Emergency Generator Engines	ULSD	0		CO		2.61	G/BHP-HR		BACT-PSD	0			
LA-0313	ST. CHARLES POWER STATION	LA	PSD-LA-804	8/31/2016	SCPS Emergency Diesel Generator 1	ULSD	2584	HP	CO	Compliance with NESHAP 40 CFR 63 Subpart ZZZZ and NSPS 40 CFR 60 Subpart IIII, and good combustion practices (use of ultra-low sulfur diesel fuel)	14.81	LB/H	HOURLY MAXIMUM	BACT-PSD	3.7	T/YR	ANNUAL MAXIMUM	BACT Limit = 2.6 G/BHP-HR
NJ-0085	MIDDLESEX ENERGY CENTER, LLC	NJ	19149/PCP150001	7/19/2016	EMERGENCY GENERATOR DIESEL	ULSD	0	100 H/YR	CO	Use of Ultra Low Sulfur Diesel (ULSD) Oil a clean burning fuel and limited hours of operation (<= 100 H/YR)	11.6	LB/H		BACT-PSD	0			
VA-0325	GREENSVILLE POWER STATION	VA	52525	6/17/2016	DIESEL-FIRED EMERGENCY GENERATOR 3000 kW (1)	DIESEL FUEL	0		CO	Good Combustion Practices/Maintenance	3.5	G/KW	PER HR	N/A	5.8	T/YR	12 MO ROLLING TOTAL	
FL-0356	OKEECHOBEE CLEAN ENERGY CENTER	FL	0930117-001-AC	3/9/2016	Three 3300-kW ULSD emergency generators	ULSD	0		CO	Use of clean engine	3.5	G / KW-HR		BACT-PSD	0			
PA-0309	LACKAWANNA ENERGY CTR/JESSUP	PA	35-00069A	12/23/2015	2000 kW Emergency Generator	ULSD	0		CO		0.6	GM/HP-HR		BACT-PSD	0.089	TONS	12-MONTH ROLLING BASIS	
MD-0045	MATTAWOMAN ENERGY CENTER	MD	PSC CASE. NO. 9330	11/13/2015	EMERGENCY GENERATOR	ULSD	1490	HP	CO	EXCLUSIVE USE OF ULTRA LOW SULFUR FUEL AND GOOD COMBUSTION PRACTICES	3.5	G/KW-H		BACT-PSD	0			NSPS SUBPART IIII.
OH-0366	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	OH	P0117655	8/25/2015	Emergency generator (P003)	Diesel fuel	2346	HP	CO	State-of-the-art combustion design	13.5	LB/H		BACT-PSD	3.37	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 3.5 g/kW-hr.
WV-0025	MOUNDSVILLE COMBINED CYCLE POWER PLANT	WV	R14-0030	11/21/2014	Emergency Generator	Diesel	2015.7	HP	CO		0			BACT-PSD	0			
OH-0363	NTE OHIO, LLC	OH	P0116610	11/5/2014	Emergency generator (P002)	Diesel fuel	1100	KW	CO	Emergency operation only, < 500 hours/year each for maintenance checks and readiness testing designed to meet NSPS Subpart IIII	8.49	LB/H		BACT-PSD	2.12	T/YR	PER ROLLING 12 MONTH PERIOD	
MD-0046	KEYS ENERGY CENTER	MD	PSC CASE NO. 9297	10/31/2014	DIESEL-FIRED AUXILIARY (EMERGENCY) ENGINES (TWO)	ULSD	1500	KW	CO	EXCLUSIVE USE OF ULTRA LOW SULFUR FUEL AND GOOD COMBUSTION PRACTICES	3.5	G/KW-H		BACT-PSD	0			NSPS SUBPART IIII
MD-0041	CPV ST. CHARLES	MD	PSC CASE NO. 9280	4/23/2014	EMERGENCY GENERATOR	ULSD	1500	KW	CO	USE OF ULTRA LOW SULFUR DIESEL AND GOOD COMBUSTION PRACTICES	2.6	G/HP-H	N/A	BACT-PSD	0			
MD-0042	WILDCAT POINT GENERATION FACILITY	MD	CPCN CASE NO. 9327	4/8/2014	EMERGENCY GENERATOR 1	ULSD	2250	KW	CO	USE OF ULSD FUEL. GOOD COMBUSTION PRACTICES AND HOURS OF OPERATION LIMITED TO 100 HOURS PER YEAR	2.6	G/HP-H		BACT-PSD	3.49	G/KW-H		NSPS 40 CFR 60 SUBPART IIII

Table E-20
RACT/BACT/LAER Clearing House Summary for CO Emissions from Generators

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
MA-0039	SALEM HARBOR STATION REDEVELOPMENT	MA	NE-12-022	1/30/2014	Emergency Engine/Generator	ULSD	7.4	MMBTU/H	CO		2.6	GM/BHP-H	1 HR BLOCK AVG INCLUDING SS	OTHER CASE-BY-CASE	6.34	LB/H	1 HR BLOCK AVG INCLUDING SS	
PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE	PA	06-05150A	12/17/2013	Emergency Generator	ULSD	60	Gal/hr	CO		0.29	T/YR	BASED ON 12-MONTH ROLLING TOTAL	OTHER CASE-BY-CASE	0			
OH-0360	CARROLL COUNTY ENERGY	OH	P0113762	11/5/2013	Emergency generator (P003)	diesel	1112	KW	CO	Purchased certified to the standards in NSPS Subpart IIII	8.57	LB/H		BACT-PSD	2.14	T/YR	PER ROLLING 12 MONTH PERIOD	Additional limit: 3.5 g CO/KW-H, standard from Subpart IIII.
NY-0104	CPV VALLEY ENERGY CENTER	NY	3-335600136/00001	8/1/2013	Emergency generator	ULSD	0		CO	Good combustion practice.	0.45	G/BHP-H	1 H	BACT-PSD	0			
OK-0154	MOORELAND GENERATING STA	OK	2008-302-C(M-1)PSD	7/2/2013	DIESEL-FIRED EMERGENCY GENERATOR ENGINE	DIESEL	1341	HP	CO	COMBUSTION CONTROL.	0.001	LB/HR		BACT-PSD	0			
OH-0352	OREGON CLEAN ENERGY CENTER	OH	P0110840	6/18/2013	Emergency generator	diesel	2250	KW	CO	Purchased certified to the standards in NSPS Subpart IIII	17.35	LB/H		BACT-PSD	4.34	T/YR	PER ROLLING 12-MONTHS	Additional limit: 3.5 g CO/KW-H, standard from Subpart IIII. Method 10 if required.
PA-0291	HICKORY RUN ENERGY STATION	PA	37-337A	4/23/2013	EMERGENCY GENERATOR	ULSD	7.8	MMBTU/H	CO		5.79	LB/H		OTHER CASE-BY-CASE	0.29	T/YR	12-MONTH ROLLING TOTAL	
VA-0321	BRUNSWICK COUNTY POWER STATION	VA	52404	3/12/2013	Emergency diesel generator- 2200 kW	ULSD	500	hrs/yr	CO	good combustion practices	3.5	G/KW-HR		BACT-PSD	4.3	TONS/YR	12 MO ROLLING AVG	Emergency use only, operate according to mfr instructions or procedures, Fuel monitoring, and non-resettable hour meter
PA-0286	MOXIE ENERGY LLC/PATRIOT GENERATION PLT	PA	41-00084A	1/31/2013	EMERGENCY GENERATOR-ENGINE	Diesel	0		CO		0.13	GM/B-HP-H		OTHER CASE-BY-CASE	0.42	LB/H	EACH UNIT	

Table E-21
RACT/BACT/LAER Clearing House Summary for VOC Emissions from Generators

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
*IL-0134	CRONUS CHEMICALS, LLC	IL	19110020	12/21/2023	Emergency generator engine	Diesel	3985	hp	VOC		6.4	G/KW-HR	3-HR AVG	BACT-PSD	75	HR/YR		
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Emergency generator	Diesel	3634	hp	VOC	Compliance with 40 CFR 60 Subpart IIII	2.29	LB/HR		BACT-PSD	0			
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Emergency generator	Diesel	2923	hp	VOC	Compliance with the requirements of 40 CFR 60 Subpart IIII	2.06	LB/HR		BACT-PSD	0			
*LA-0394	GEISMAR PLANT	LA	PSD-LA-647(M-9)	12/12/2023	Emergency generator	Diesel	670	hp	VOC	Use of good combustion practices and compliance with NSPS Subpart IIII	0.11	LB/HR	HOURLY MAXIMUM	BACT-PSD	0			
IN-0359	NUCOR STEEL	IN	107-45480-00038	03/30/2023	Emergency generator	Diesel	3000	hp	VOC	certified engine	0.32	G/HP-HR		BACT-PSD	0			
IN-0359	NUCOR STEEL	IN	107-45480-00038	03/30/2023	Emergency generator	Diesel	500	hp	VOC	certified engine	0.15	G/HP-H		BACT-PSD	0			
*LA-0324	COMMONWEALTH LNG FACILITY	LA	PSD-LA-841	3/28/2023	Emergency generator	Diesel	4290	kW	VOC	Compliance with 40 CFR 60 Subpart IIII and operating engines per manufacturers' instructions and written procedures designed to maximize combustion efficiency and minimize fuel use.	0.322	G/KW-HR		BACT-PSD	0			
TX-0939	ORANGE COUNTY ADVANCED POWER STATION	TX	166032 PSDTX1598 GHGSPSDTX210	3/13/2023	EMERGENCY GENERATOR	DIESEL	18.7	MMBTU/HR	VOC	GOOD COMBUSTION PRACTICES, LIMITED TO 100 HR/YR	0.001	LB/HP HR		BACT-PSD	0			
LA-0391	MAGNOLIA POWER GENERATING STATION UNIT 1	LA	PSD-LA-839	6/3/2022	Emergency Diesel Generator Engine	ULSD	2937	hp	VOC	Compliance with 40 CFR 60 Subpart IIII standards, good combustion practices, and the use of ultra-low sulfur diesel fuel.	4.8	G/HP-HR		BACT-PSD	0			BACT limit is 4.8 g/BHP-hr (NOx + NMHC). Compliance with 40 CFR 60 Subpart IIII (Tier 2 non-road engines) standards, good combustion practices, and the use of ultra-low sulfur diesel fuel.
*WV-0033	MAIDSVILLE	WV	R14-0038	1/5/2022	Emergency Generator	ULSD	2100	hp	VOC	Good Combustion Practices w/ OxCat. Applicant did not justify why an oxcat is infeasible for an emergency engine	0.46	LB/HR		BACT-PSD	6.4	G/BKW	NMHC+NOX	Certified Engine
TX-0915	UNIT 5	TX	160538, PSDTX1528, GHGSPSDTX204	3/17/2021	DIESEL GENERATOR	DIESEL	0		VOC	LIMITED 500 HR/YR OPERATION	0.5	G/HPHR		BACT-PSD	0			
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Emergency Diesel Generator (P07)	Diesel	1490	HP	VOC	Operation limited to 500 hours/year and operate and maintain generator according to the manufacturer's recommendations	0.32	G/HP-H		BACT-PSD	0			
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	One (1) Black Start Generator Engine	ULSD	186.6	gph	VOC	Oxidation Catalyst, Good combustion practices, and limit operation to 500 hours per year.	0.18	G/HP-HR	3-HOUR AVERAGE	BACT-PSD	0			EU 39 is required to achieve EPA Tier 4 emission status. The 0.18 g/hp-hr limit includes a 25% not to exceed factor of safety.
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	Three (3) Firewater Pump Engines and two (2) Emergency Diesel Generators	ULSD	19.4	gph	VOC	Good combustion practices, ULSD, and limit operation to 500 hours per year.	0.19	G/HP-HR	3-HOUR AVERAGE	BACT-PSD	0			EUs 40 - 44 are required to achieve EPA Tier 3 emission status. The 0.19 g/hp-hr limit includes a 25% not to exceed factor of safety.

Table E-21
RACT/BACT/LAER Clearing House Summary for VOC Emissions from Generators

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
LA-0364	FG LA COMPLEX	LA	PSD-LA-812	1/6/2020	Emergency Generator Diesel Engines	Diesel Fuel	550	hp	VOC	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0			BACT-PSD	0			Engines are limited to 100 hours of non-emergency use.
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Large Emergency Engines (50kW)	Diesel Fuel	5364	HP	VOC	Good combustion and operating practices.	0.79	G/KW-H		BACT-PSD	0			Comply with 40 CFR 60 Subpart IIII and limiting normal operations to 100 hr/yr.
OH-0377	HARRISON POWER	OH	P0122266	4/19/2018	Emergency Diesel Generator (P003)	Diesel fuel	1860	HP	VOC	Good combustion practices (ULSD) and compliance with 40 CFR Part 60, Subpart IIII	19.68	LB/H	NMHC+NOX. SEE NOTES.	BACT-PSD	0.98	T/YR	NMHC+NOX. SEE NOTES.	All emissions limits are for Non-methane hydrocarbon (NMHC) + NOX emissions. 0.98 t/yr per rolling, 12-month period. NSPS: Non-methane hydrocarbon (NMHC) + NOX emissions shall not exceed 6.4 g/kW-hr (4.8 g/hp-hr).
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	OH	P0122829	11/7/2017	Emergency Diesel Generator Engine (P001)	Diesel fuel	2206	HP	VOC	Good combustion design	24.71	LB/H	NMHC+NOX. SEE NOTES.	BACT-PSD	1.24	T/YR	NMHC+NOX. SEE NOTES.	Non-methane hydrocarbon plus nitrogen oxides (NMHC+NOx) emissions shall not exceed 6.40 g/kW-h (4.8 g/hp-h), 24.71 lb/h and 1.24 t/yr per rolling, 12-month period.
OH-0374	GUERNSEY POWER STATION LLC	OH	P0122594	10/23/2017	Emergency Generators (2 identical, P004 and P005)	Diesel fuel	2206	HP	VOC	Certified to the meet the emissions standards in 40 CFR 89.112 and 89.113 pursuant to 40 CFR 60.4205(b) and 60.4202(a)(2). Good combustion practices per the manufacturer's operating manual.	23.21	LB/H	NMHC+NOX. SEE NOTES.	BACT-PSD	1.16	T/YR	NMHC+NOX. SEE NOTES.	Non-methane hydrocarbon plus nitrogen oxides (NMHC+NOx) emissions shall not exceed 6.40 g/kW-hour (4.77 G/BHP-H), 23.21 pounds per hour and 1.16 tons per rolling, 12-month period.
OH-0372	OREGON ENERGY CENTER	OH	P0121049	9/27/2017	Emergency generator (P003)	Diesel fuel	1529	HP	VOC	State-of-the-art combustion design	2	LB/H		BACT-PSD	0.5	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 0.79 g/kW-hr (0.59 g/hp-hr). NSPS: Non-methane hydrocarbon (NMHC) + NOX emissions shall not exceed 6.4 g/kW-hr.
OH-0370	TRUMBULL ENERGY CENTER	OH	P0122331	9/7/2017	Emergency generator (P003)	Diesel fuel	1529	HP	VOC	State-of-the-art combustion design	2	LB/H		BACT-PSD	0.5	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 0.79 g/kW-hr. Non-methane hydrocarbon (NMHC) + NOx emissions shall not exceed 6.4 g/kW-hr.
OH-0367	SOUTH FIELD ENERGY LLC	OH	P0119495	9/23/2016	Emergency generator (P003)	Diesel fuel	2947	HP	VOC	State-of-the-art combustion design	3.84	LB/H		BACT-PSD	0.96	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 0.79 g/kW-hr. NSPS: Non-methane hydrocarbon (NMHC) + NOx emissions shall not exceed 6.4 g/kW-hr.
LA-0313	ST. CHARLES POWER STATION	LA	PSD-LA-804	8/31/2016	SCPS Emergency Diesel Generator 1	Diesel	2584	HP	VOC	Good combustion practices	27.34	LB/H	HOURLY MAXIMUM	BACT-PSD	6.84	T/YR	ANNUAL MAXIMUM	BACT Limit = 4.8 G/BHP-HR (NMHC + NOx)
VA-0325	GREENSVILLE POWER STATION	VA	52525	6/17/2016	DIESEL-FIRED EMERGENCY GENERATOR 3000 kW (1)	DIESEL FUEL	0		VOC	Good Combustion Practices/Maintenance	6.4	G/KW	PER HR	N/A	0			The diesel generator (EG-1) will have a combined NOx+NMHC limit of 6.4 g/kW-hr
OH-0366	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	OH	P0117655	8/25/2015	Emergency generator (P003)	Diesel fuel	2346	HP	VOC		3.1	LB/H		BACT-PSD	0.76	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 0.79 g/kW-hr. Non-methane hydrocarbon (NMHC) + NOx emissions shall not exceed 6.4 g/kW-hr.
WV-0025	MOUNDSVILLE COMBINED CYCLE POWER PLANT	WV	R14-0030	11/21/2014	Emergency Generator	Diesel	2015.7	HP	VOC		1.24	LB/H		BACT-PSD	0			
PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE	PA	06-05150A	12/17/2013	Emergency Generator	ULSD	60	Gal/hr	VOC		0.03	T/YR	BASED ON 12-MONTH ROLLING TOTAL	OTHER CASE-BY-CASE	0			
OH-0360	CARROLL COUNTY ENERGY	OH	P0113762	11/5/2013	Emergency generator (P003)	diesel	1112	KW	VOC	Purchased certified to the standards in NSPS Subpart IIII	1.93	LB/H		BACT-PSD	0.48	T/YR	PER ROLLING 12 MONTH PERIOD	Additional limit: 0.79 g VOC/kW-h; and 6.4 g NMHC + NOx/kW-h Subpart IIII standard.
OK-0154	MOORELAND GENERATING STA	OK	2008-302-C(M-1)PSD	7/2/2013	DIESEL-FIRED EMERGENCY GENERATOR ENGINE	DIESEL	1341	HP	VOC	COMBUSTION CONTROL.	0.0007	LB/HP-HR		BACT-PSD	0			

Table E-21
RACT/BACT/LAER Clearing House Summary for VOC Emissions from Generators

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
OH-0352	OREGON CLEAN ENERGY CENTER	OH	P0110840	6/18/2013	Emergency generator	diesel	2250	KW	VOC	Purchased certified to the standards in NSPS Subpart IIII	3.93	LB/H		BACT-PSD	0.98	T/YR	PER ROLLING 12-MONTHS	Additional limit: 0.79 g VOC/kW-h; and 6.4 g NMHC + NOx/kW-h Subpart IIII standard. Method 25A if required
PA-0291	HICKORY RUN ENERGY STATION	PA	37-337A	4/23/2013	EMERGENCY GENERATOR	ULSD	7.8	MMBTU/H	VOC		0.7	LB/H		OTHER CASE-BY-CASE	0.03	12-MONTH ROLLING TOT		
PA-0286	MOXIE ENERGY LLC/PATRIOT GENERATION PLT	PA	41-00084A	1/31/2013	EMERGENCY GENERATOR-ENGINE	Diesel	0		VOC		0.01	GM/B-HP-H	EXPRESSED AS THC	OTHER CASE-BY-CASE	0.03	LB/H		

Table E-22
RACT/BACT/LAER Clearing House Summary for SO2 Emissions from Generators

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Standard Emission Limit	Standard Emission Limit Units	Standard Emission Limit Averaging Period	Pollutant Compliance Notes
*IN-0365	MAPLE CREEK ENERGY LLC	IN	T153-45909-00056	6/19/2023	Emergency generator	ULSD	2012	hp	SO2		0.0016	LB PER MMBTU		BACT-PSD	0			0			The sulfur content of diesel fuel burned in the emergency generator shall not exceed 0.0015%. Emergency generator shall use good combustion design.
IN-0359	NUCOR STEEL	IN	107-45480-00038	3/30/2023	Emergency Generator (CC-GEN1)	diesel	3000	hp	SO2	ultra-low sulfur diesel fuel (0.0015%)	0			BACT-PSD	0						
IN-0359	NUCOR STEEL	IN	107-45480-00038	03/30/2023	Emergency generator	Diesel	500	hp	SO2	ultra-low sulfur diesel fuel (0.0015%)	0			BACT-PSD	0						
*LA-0324	COMMONWEALTH LNG FACILITY	LA	PSD-LA-841	3/28/2023	Emergency generator	Diesel	4290	kW	SO2	Compliance with 40 CFR 60 Subpart IIII and operating engines per manufacturers' instructions and written procedures designed to maximize combustion efficiency and minimize fuel usage	0.0015	LB/MM BTU		BACT-PSD	0						
AR-0177	NUCOR STEEL ARKANSAS	AR		11/21/2022	Emergency generator	Diesel	3634	hp	SO2	Fuel Specification	15	PPM FUEL		BACT-PSD	0			0			
IL-0133	LINCOLN LAND ENERGY CENTER	IL	18040008	7/29/2022	Emergency Engines	ULSD	1250	kW	SO2	Use of ultra-low sulfur diesel, with a sulfur content < 15 ppm sulfur.	0			BACT-PSD	0			0			Use of ultra-low sulfur diesel represents BACT.
FL-0371	SHADY HILLS COMBINED CYCLE FACILITY	FL	1010524-003-AC (PSD-FL-444A)	6/7/2021	1,500 kW Emergency Diesel Generator	ULSD	14.82	MMBtu/hour	SO2		15	PPM S IN FUEL		BACT-PSD	0			0			Fueled by ULSD only
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	One (1) Black Start Generator Engine	ULSD	186.6	gph	SO2	Good combustion practices, ULSD, and limit operation to 500 hours per year.	15	PPMW SULFUR IN FUEL		BACT-PSD	0			0			EU 39 is required to burn ULSD.
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	Three (3) Firewater Pump Engines and two (2) Emergency Diesel Generators	ULSD	19.4	gph	SO2	Good combustion practices, ULSD, and limit operation to 500 hours per year.	15	PPMW SULFUR IN FUEL		BACT-PSD	0			0			EUs 40 - 44 are required to burn ULSD.
LA-0364	FG LA COMPLEX	LA	PSD-LA-812	1/6/2020	Emergency Generator Diesel Engines	Diesel Fuel	550	hp	SO2	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0			BACT-PSD	0			0			Engines are limited to 100 hours of non-emergency use.
VA-0332	CHICKAHOMINY POWER LLC	VA	52610-1	6/24/2019	Emergency Diesel Generator - 300 kW	ULSD	500	H/YR	SO2	good combustion practices, high efficiency design, and the use of ultra low sulfur diesel (\$15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0.0015	LB/MMBTU		BACT-PSD	0			0			Certify sulfur content of fuel.
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Large Emergency Engines (50kW)	ULSD	5364	HP	SO2	Ultra-low sulfur diesel fuel with sulfur content of 15 ppmv.	0	LB/HP-H		BACT-PSD	0			0			Comply with 40 CFR 60 Subpart IIII and limiting normal operations to 100 hr/yr.
FL-0367	SHADY HILLS COMBINED CYCLE FACILITY	FL	1010524-001-AC	7/27/2018	1,500 kW Emergency Diesel Generator	ULSD	14.82	MMBtu/hour	SO2	Clean fuel	15	PPM S IN FUEL		BACT-PSD	0			0			ULSD only
VA-0328	C4GT, LLC	VA	52588	4/26/2018	Emergency Diesel GEN	ULSD	500	H/YR	SO2	good combustion practices and the use of ultra low sulfur diesel (\$15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0			BACT-PSD	0			0			
OH-0377	HARRISON POWER	OH	P0122266	4/19/2018	Emergency Diesel Generator (P003)	ULSD	1860	HP	SO2	ultra-low sulfur diesel (ULSD) fuel with a sulfur content of less than 15 ppm (0.0015 percent by weight)	0.0015	LB/MMBTU		BACT-PSD	0.023	LB/H		0			0.001 t/yr per rolling, 12-month period.
FL-0363	DANIA BEACH ENERGY CENTER	FL	0110037-017-AC	12/4/2017	Two 3300 kW emergency generators	ULSD	0		SO2	Clean fuel	15	PPM S IN FUEL		BACT-PSD	0			0			ULSD only
OH-0374	GUERNSEY POWER STATION LLC	OH	P0122594	10/23/2017	Emergency Generators (2 identical, P004 and P005)	ULSD	2206	HP	SO2	ultra-low sulfur diesel (ULSD) fuel with a sulfur content of less than 15 ppm (0.0015 percent by weight)	0.0015	LB/MMBTU		BACT-PSD	0.022	LB/H		0			0.0011 t/yr per rolling 12 month period.
OH-0372	OREGON ENERGY CENTER	OH	P0121049	9/27/2017	Emergency generator (P003)	ULSD	1529	HP	SO2	Ultra low sulfur diesel fuel	0.016	LB/H		BACT-PSD	4	X10-3 T/YR	PER ROLLING 12 MONTH PERIOD	0		PER ROLLING 12 MONTH PERIOD	
OH-0370	TRUMBULL ENERGY CENTER	OH	P0122331	9/7/2017	Emergency generator (P003)	ULSD	1529	HP	SO2	Ultra low sulfur diesel fuel	0.016	LB/H		BACT-PSD	4	X10-3 T/YR	PER ROLLING 12 MONTH PERIOD	0		PER ROLLING 12 MONTH PERIOD	

Table E-22 RACT/BACT/LAER Clearing House Summary for SO2 Emissions from Generators																					
OH-0367	SOUTH FIELD ENERGY LLC	OH	P0119495	9/23/2016	Emergency generator (P003)	ULSD	2947	HP	SO2	Ultra low sulfur diesel fuel	0.03	LB/H		BACT-PSD	0.01	T/YR	PER ROLLING 12 MONTH PERIOD	0		PER ROLLING 12 MONTH PERIOD	
FL-0356	OKEECHOBEE CLEAN ENERGY CENTER	FL	0930117-001-AC	2/9/2016	Three 3300-kW ULSD emergency generators	ULSD	0		SO2	Use of ULSD	0.0015	% \$ IN ULSD		BACT-PSD	0			0			
MD-0042	WILDCAT POINT GENERATION FACILITY	MD	CPCN CASE NO. 9327	4/8/2014	EMERGENCY GENERATOR 1	ULSD	2250	KW	SO2	USE OF ULTRA-LOW DIESEL SULFUR FUEL, LIMITED HOURS OF OPERATION AND DESIGNED TO MEET NSPS SUBPART IIII LIMITS	0.006	G/B-HP-H	3-HOUR BLOCK AVERAGE	BACT-PSD	0			0			
NY-0104	CPV VALLEY ENERGY CENTER	NY	3-335600136/00001	8/1/2013	Emergency generator	ULSD	0		SO2	Ultra low sulfur diesel with maximum sulfur content 0.0015 percent.	0.0014	LB/MMBTU	1 H	BACT-PSD	0			0			
PA-0286	MOXIE ENERGY LLC/PATRIOT GENERATION PLT	PA	41-00084A	1/31/2013	EMERGENCY GENERATOR-ENGINE	ULSD	0		SOx	The permittee shall only use diesel fuel that is classified as ULTRA-LOW SULFUR NON-HIGHWAY DIESEL FUEL (15 ppm Sulfur Maximum).	0.005	GM/B-HP-H	EXPRESSED AS SO2	BACT-PSD	0.02	LB/H		0.01	T/YR		

Table E-23
RACT/BACT/LAER Clearing House Summary for PM Emissions from Generators

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
*IL-0134	CRONUS CHEMICALS, LLC	IL	19110020	12/21/2023	Emergency generator engine	Diesel	3985	hp	TPM2.5		0.2	G/KW-HR	3-HR AVG	BACT-PSD	75	HR/YR		
*IL-0134	CRONUS CHEMICALS, LLC	IL	19110020	12/21/2023	Emergency generator engine	Diesel	3985	hp	TPM10		0.2	G/KW-HR	3-HR AVG	BACT-PSD	75	HR/YR		
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Emergency generator	Diesel	3634	hp	TPM2.5	Compliance with 40 CFR 60 Subpart IIII	1.19	LB/HR		BACT-PSD	0			
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Emergency generator	Diesel	3634	hp	TPM10	Compliance with 40 CFR 60 Subpart IIII	1.19	LB/HR		BACT-PSD	0			
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Emergency generator	Diesel	2923	hp	TPM2.5	Compliance with the requirements of 40 CFR 60 Subpart IIII	0.84	LB/HR		BACT-PSD	0			
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Emergency generator	Diesel	2923	hp	TPM10	Compliance with the requirements of 40 CFR 60 Subpart IIII	0.84	LB/HR		BACT-PSD	0			
*LA-0394	GEISMAR PLANT	LA	PSD-LA-647(M-9)	12/12/2023	Emergency generator	Diesel	670	hp	TPM2.5	Use of good combustion practices and compliance with NSPS Subpart IIII	0.22	LB/HR	HOURLY MAXIMUM	BACT-PSD	0			
*LA-0394	GEISMAR PLANT	LA	PSD-LA-647(M-9)	12/12/2023	Emergency generator	Diesel	670	hp	TPM10	Use of good combustion practices and compliance with NSPS Subpart IIII	0.22	LB/HR	HOURLY MAXIMUM	BACT-PSD	0			
*IN-0365	MAPLE CREEK ENERGY LLC	IN	T153-45909-00056	6/19/2023	Emergency generator	ULSD	2012	hp	TPM		0.15	G PER HP-HR		BACT-PSD	0			
*IN-0365	MAPLE CREEK ENERGY LLC	IN	T153-45909-00056	6/19/2023	Emergency generator	ULSD	2012	hp	TPM10		0.15	G PER HP-HR		BACT-PSD	0			
*IN-0365	MAPLE CREEK ENERGY LLC	IN	T153-45909-00056	6/19/2023	Emergency generator	ULSD	2012	hp	TPM2.5		0.15	G/HP-HR		BACT-PSD	0			
IN-0359	NUCOR STEEL	IN	107-45480-00038	3/30/2023	Emergency Generator (CC-GEN1)	diesel	3000	hp	TPM10	certified engine	0.15	G/HP-HR		BACT-PSD	0			
IN-0359	NUCOR STEEL	IN	107-45480-00038	3/30/2023	Emergency generator	diesel	3000	hp	TPM2.5	certified engine	0.15	G/HP-HR		BACT-PSD	0			
IN-0359	NUCOR STEEL	IN	107-45480-00038	3/30/2023	Emergency generator	diesel	500	hp	TPM10	certified engine	0.15	G/HP-HR		BACT-PSD	0			
IN-0359	NUCOR STEEL	IN	107-45480-00038	3/30/2023	Emergency generator	diesel	500	hp	TPM2.5	certified engine	0.15	G/HP-HR		BACT-PSD	0			
*LA-0324	COMMONWEALTH LNG FACILITY	LA	PSD-LA-841	3/28/2023	Emergency generator	diesel	4290	kW	FPM10	Compliance with 40 CFR 60 Subpart IIII and operating engines per manufacturers' instructions and written procedures designed to maximize combustion efficiency and minimize fuel usage.	0.067	G/KW-HR		BACT-PSD	0			
*LA-0324	COMMONWEALTH LNG FACILITY	LA	PSD-LA-841	3/28/2023	Emergency generator	diesel	4290	kW	FPM2.5	Compliance with 40 CFR 60 Subpart IIII and operating engines per manufacturers' instructions and written procedures designed to maximize combustion efficiency and minimize fuel usage.	0.067	G/KW-HR		BACT-PSD	0			
TX-0939	ORANGE COUNTY ADVANCED POWER STATION	TX	166032 PSDTX1598 GHGPSDTX210	3/13/2023	EMERGENCY GENERATOR	DIESEL	18.7	MMBTU/HR	FPM	GOOD COMBUSTION PRACTICES, LIMITED TO 100 HR/YR	0.0003	LB/HP HR		BACT-PSD	0			
TX-0939	ORANGE COUNTY ADVANCED POWER STATION	TX	166032 PSDTX1598 GHGPSDTX210	3/13/2023	EMERGENCY GENERATOR	DIESEL	18.7	MMBTU/HR	FPM10	GOOD COMBUSTION PRACTICES, LIMITED TO 100 HR/YR	0.0003	LB/HP HR		BACT-PSD	0			
TX-0939	ORANGE COUNTY ADVANCED POWER STATION	TX	166032 PSDTX1598 GHGPSDTX210	3/13/2023	EMERGENCY GENERATOR	DIESEL	18.7	MMBTU/HR	FPM2.5	GOOD COMBUSTION PRACTICES, LIMITED TO 100 HR/YR	0.003	LB/HP HR		BACT-PSD	0			
MI-0454	LBWL-ERICKSON STATION	MI	74-18D	12/20/2022	EUEMGD	ULSD	4474.2	KW	TPM10	Good combustion practices, burn ultra-low diesel fuel, and be NSPS compliant.	1	LB/H	HOURLY	BACT-PSD	0			The control considered technically feasible was burning ultra-low sulfur diesel fuel.
MI-0454	LBWL-ERICKSON STATION	MI	74-18D	12/20/2022	EUEMGD	ULSD	4474.2	KW	TPM2.5	Ultra-low sulfur diesel fuel	1	LB/H	HOURLY	BACT-PSD	0			The control considered technically feasible was burning ultra-low sulfur diesel fuel.
IL-0133	LINCOLN LAND ENERGY CENTER	IL	18040008	7/29/2022	Emergency Engines	ULSD	1250	kW	TPM		0.2	GRAMS	KILOWATT-HOUR	BACT-PSD	0			Emission Limit 1 includes PM10 and PM2.5, i.e., PM/PM10/PM2.5.
LA-0391	MAGNOLIA POWER GENERATING STATION UNIT 1	LA	PSD-LA-839	6/3/2022	Emergency Diesel Generator Engine	ULSD	2937	hp	TPM10	Compliance with 40 CFR 60 Subpart IIII, good combustion practices, and use of ultra-low sulfur diesel fuel.	0.15	G/HP-HR		BACT-PSD	0			BACT limit is 0.15 g/BHP-hr. Compliance with 40 CFR 60 Subpart IIII (Tier 2 non-road engines) standards, good combustion practices, and the use of ultra-low sulfur diesel fuel.
LA-0391	MAGNOLIA POWER GENERATING STATION UNIT 1	LA	PSD-LA-839	6/3/2022	Emergency Diesel Generator Engine	ULSD	2937	hp	TPM2.5	Compliance with 40 CFR 60 Subpart IIII (Tier 2 non-road engines) standards, good combustion practices, and the use of ultra-low sulfur diesel fuel.	0.15	G/HP-HR		BACT-PSD	0			BACT limit is 0.15 g/BHP-hr. Compliance with 40 CFR 60 Subpart IIII (Tier 2 non-road engines) standards, good combustion practices, and the use of ultra-low sulfur diesel fuel.
*WV-0033	MAIDSVILLE	WV	R14-0038	1/5/2022	Emergency Generator	ULSD	2100	hp	TPM	Clean Fuels and Good Combustion Practices.	0.23	LB/HR		BACT-PSD	0			Certified Engine. Assumed to be PM2.5 or less including condensables.
FL-0371	SHADY HILLS COMBINED CYCLE FACILITY	FL	1010524-003-AC (PSD-FL-444A)	6/7/2021	1,500 kW Emergency Diesel Generator	ULSD	14.82	MMBTu/hour	TPM		0.2	G/KW-HOUR		BACT-PSD	0			
TX-0915	UNIT 5	TX	160538, PSDTX1528, GHGPSDTX204	3/17/2021	DIESEL GENERATOR	DIESEL	0		FPM	LIMITED 500 HR/YR OPERATION	0.022	G/HPHR		BACT-PSD	0			

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RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
TX-0915	UNIT 5	TX	160538, PSDTX1528, GHGPSDTX204	3/17/2021	DIESEL GENERATOR	DIESEL	0		FPM10	LIMITED 500 HR/YR OPERATION	0.022	G/HPHR		BACT-PSD	0			
MI-0447	LBWL--ERICKSON STATION	MI	74-18A	1/7/2021	EUEMGD--emergency engine	ULSD	4474.2	KW	TPM10	Good combustion practices, burn ultra-low diesel fuel and be NSPS compliant.	1	LB/H	HOURLY	BACT-PSD	0			The control considered technically feasible was burning ultra-low sulfur diesel fuel. The underlying applicable requirements for the emission limit are state rules R336.1205(1)(a)&(b), R336.1331(1)(c). Also NSPS 40 CFR 60.4205(c).
MI-0447	LBWL--ERICKSON STATION	MI	74-18A	1/7/2021	EUEMGD--emergency engine	ULSD	4474.2	KW	TPM2.5	ultra-low sulfur diesel fuel	1	LB/H	HOURLY	BACT-PSD	0			The control considered technically feasible was burning ultra-low sulfur diesel fuel.
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Emergency Diesel Generator (P07)	Diesel	1490	HP	TPM	Limited to operate 500 hours/year, sulfur content of the diesel fuel oil fired may not exceed 15 ppm, and operate and maintain according to the manufacturer's recommendations.	0.15	G/HP-H		BACT-PSD	0			
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Emergency Diesel Generator (P07)	Diesel	1490	HP	TPM10	Limited to operate 500 hours/year, sulfur content of the diesel fuel oil fired may not exceed 15 ppm, and operate and maintain according to the manufacturer's recommendations.	0.15	G/HP-H		BACT-PSD	0			
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Emergency Diesel Generator (P07)	Diesel	1490	HP	TPM2.5	Limited to operate 500 hours/year, sulfur content of the diesel fuel oil fired may not exceed 15 ppm, and operate and maintain according to the manufacturer's recommendations.	0.15	G/HP-H		BACT-PSD	0			
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	One (1) Black Start Generator Engine	ULSD	186.6	gph	TPM	Good combustion practices, ULSD, and limit operation to 500 hours per year.	0.045	G/HP-HR	3-HOUR AVERAGE	BACT-PSD	0			EU 39 is required to achieve EPA Tier 4 emission status. The 0.045 g/hp-hr limit includes a 50% not to exceed factor of safety.
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	One (1) Black Start Generator Engine	ULSD	186.6	gph	TPM10	Good combustion practices, ULSD, and limit operation to 500 hours per year.	0.045	G/HP-HR	3-HOUR AVERAGE	BACT-PSD	0			EU 39 is required to achieve EPA Tier 4 emission status. The 0.045 g/hp-hr limit includes a 50% not to exceed factor of safety.
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	One (1) Black Start Generator Engine	ULSD	186.6	gph	TPM2.5	Good combustion practices, ULSD, and limit operation to 500 hours per year.	0.045	G/HP-HR	3-HOUR AVERAGE	BACT-PSD	0			EU 39 is required to achieve EPA Tier 4 emission status. The 0.045 g/hp-hr limit includes a 50% not to exceed factor of safety.
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	Three (3) Firewater Pump Engines and two (2) Emergency Diesel Generators	ULSD	19.4	gph	TPM	Good combustion practices, ULSD, and limit operation to 500 hours per year per engine	0.19	G/HP-HR	3-HOUR AVERAGE	BACT-PSD	0			EUs 40 - 44 are required to achieve EPA Tier 3 emission status. The 0.19 g/hp-hr limit includes a 25% not to exceed factor of safety.
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	Three (3) Firewater Pump Engines and two (2) Emergency Diesel Generators	ULSD	19.4	gph	TPM10	Good combustion practices, ULSD, and limit operation to 500 hours per year per engine	0.19	G/HP-HR	3-HOUR AVERAGE	BACT-PSD	0			EUs 40 - 44 are required to achieve EPA Tier 3 emission status. The 0.19 g/hp-hr limit includes a 25% not to exceed factor of safety.
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	Three (3) Firewater Pump Engines and two (2) Emergency Diesel Generators	ULSD	19.4	gph	TPM2.5	Good combustion practices, ULSD, and limit operation to 500 hours per year per engine	0.19	G/HP-HR	3-HOUR AVERAGE	BACT-PSD	0			EUs 40 - 44 are required to achieve EPA Tier 3 emission status. The 0.19 g/hp-hr limit includes a 25% not to exceed factor of safety.
LA-0364	FG LA COMPLEX	LA	PSD-LA-812	1/6/2020	Emergency Generator Diesel Engines	Diesel Fuel	550	hp	TPM10	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0			BACT-PSD	0			Engines are limited to 100 hours of non-emergency use.
LA-0364	FG LA COMPLEX	LA	PSD-LA-812	1/6/2020	Emergency Generator Diesel Engines	Diesel Fuel	550	hp	FPM2.5	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0			BACT-PSD	0			Engines are limited to 100 hours of non-emergency use.
VA-0332	CHICKAHOMINY POWER LLC	VA	52610-1	6/24/2019	Emergency Diesel Generator - 300 kW	ULSD	500	H/YR	FPM	good combustion practices, high efficiency design, and the use of ultra low sulfur diesel (\$15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0.15	G/HP-H		BACT-PSD	0			
VA-0332	CHICKAHOMINY POWER LLC	VA	52610-1	6/24/2019	Emergency Diesel Generator - 300 kW	ULSD	500	H/YR	TPM10	good combustion practices, high efficiency design, and the use of ultra low sulfur diesel (\$15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0.15	G/HP-HR		BACT-PSD	0			

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VA-0332	CHICKAHOMINY POWER LLC	VA	52610-1	6/24/2019	Emergency Diesel Generator - 300 kW	ULSD	500	H/YR	TPM2.5	good combustion practices, high efficiency design, and the use of ultra low sulfur diesel (\$15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0.15	G/HP-HR		BACT-PSD	0			
IL-0130	JACKSON ENERGY CENTER	IL	17040013	12/31/2018	Emergency Engine	ULSD	1500	kW	TPM		0.2	G/KW-HR		BACT-PSD	0			NSPS Subpart IIII limit of 0.20 g/kW-hr is BACT
MI-0441	LBWL--ERICKSON STATION	MI	74-18	12/21/2018	EUEMGD1--A 1500 HP diesel fueled emergency engine	ULSD	1500	HP	TPM10	Good combustion practices, burn ultra-low sulfur diesel fuel and be NSPS compliant.	0.69	LB/H	HOURLY	BACT-PSD	0			The control considered technically feasible was burning ultra-low sulfur diesel fuel.
MI-0441	LBWL--ERICKSON STATION	MI	74-18	12/21/2018	EUEMGD1--A 1500 HP diesel fueled emergency engine	ULSD	1500	HP	TPM2.5	Ultra low-sulfur diesel fuel.	0.69	LB/H	HOURLY	BACT-PSD	0			The control considered technically feasible was burning ultra low sulfur diesel fuel.
MI-0441	LBWL--ERICKSON STATION	MI	74-18	12/21/2018	EUEMGD2--A 6000 HP diesel fuel fired emergency engine	ULSD	6000	HP	TPM10	Good combustion practices, burn ultra low sulfur diesel fuel, and be NSPS compliant.	2.7	LB/H	HOURLY	BACT-PSD	0			The control considered technically feasible was burning ultra low sulfur diesel fuel.
MI-0441	LBWL--ERICKSON STATION	MI	74-18	12/21/2018	EUEMGD2--A 6000 HP diesel fuel fired emergency engine	ULSD	6000	HP	TPM2.5	Ultra low sulfur diesel fuel.	2.7	LB/H	HOURLY	BACT-PSD	0			The control considered technically feasible was burning ultra low sulfur diesel fuel.
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Large Emergency Engines (50kW)	Diesel Fuel	5364	HP	TPM10	Good combustion and operating practices.	0.2	G/KW-H		BACT-PSD	0			Comply with 40 CFR 60 Subpart IIII and limiting normal operations to 100 hr/yr.
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Large Emergency Engines (50kW)	Diesel Fuel	5364	HP	TPM2.5	Good combustion and operating practices.	0.2	G/KW-H		BACT-PSD	0			Comply with 40 CFR 60 Subpart IIII and limiting normal operations to 100 hr/yr.
IL-0129	CPV THREE RIVERS ENERGY CENTER	IL	16060032	7/30/2018	Emergency Engines	ULSD	0		TPM		0			BACT-PSD	0			In the issued permit, TPM addresses PM, PM10 and PM2.5 Limits of the NSPS, 40 CFR 60 Subpart IIII, are BACT for PM. For the large engine: 0.20 g/kW-hr For the small engine: 0.30 g/kW-hr
FL-0367	SHADY HILLS COMBINED CYCLE FACILITY	FL	1010524-001-AC	7/27/2018	1,500 kW Emergency Diesel Generator	ULSD	14.82	MMBtu/hour	FPM	Operate and maintain the engine according to the manufacturer's written instructions	0.2	G/KW-HOUR		BACT-PSD	0			Equals Subpart IIII limit
VA-0328	C4GT, LLC	VA	52588	4/26/2018	Emergency Diesel GEN	ULSD	500	H/YR	FPM	good combustion practices and the use of ultra low sulfur diesel (\$15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0.15	G/HP H		BACT-PSD	0			
VA-0328	C4GT, LLC	VA	52588	4/26/2018	Emergency Diesel GEN	ULSD	500	H/YR	TPM10	good combustion practices and the use of ultra low sulfur diesel (\$15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0.15	G/HP H		BACT-PSD	0			
VA-0328	C4GT, LLC	VA	52588	4/26/2018	Emergency Diesel GEN	ULSD	500	H/YR	TPM2.5	Good combustion practices and the use of ultra low sulfur diesel (\$15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0.15	G/HP H		BACT-PSD	0			
OH-0377	HARRISON POWER	OH	P0122266	4/19/2018	Emergency Diesel Generator (P003)	Diesel fuel	1860	HP	TPM	Good combustion practices (ULSD) and compliance with 40 CFR Part 60, Subpart IIII	0.62	LB/H		BACT-PSD	0.031	T/YR	PER ROLLING 12 MONTH PERIOD	NSPS PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0377	HARRISON POWER	OH	P0122266	4/19/2018	Emergency Diesel Generator (P003)	Diesel fuel	1860	HP	TPM10	Good combustion practices (ULSD) and compliance with 40 CFR Part 60, Subpart IIII	0.62	LB/H		BACT-PSD	0.031	T/YR	PER ROLLING 12 MONTH PERIOD	NSPS PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0377	HARRISON POWER	OH	P0122266	4/19/2018	Emergency Diesel Generator (P003)	Diesel fuel	1860	HP	TPM2.5	Good combustion practices (ULSD) and compliance with 40 CFR Part 60, Subpart IIII	0.62	LB/H		BACT-PSD	0.031	T/YR	PER ROLLING 12 MONTH PERIOD	NSPS PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
FL-0363	DANIA BEACH ENERGY CENTER	FL	0110037-017-AC	12/4/2017	Two 3300 kW emergency generators	ULSD	0		FPM	Clean fuel	0.2	GRAMS PER KWH		BACT-PSD	0			Equals Subpart IIII limit
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	OH	P0122829	11/7/2017	Emergency Diesel Generator Engine (P001)	Diesel fuel	2206	HP	TPM	Good combustion design	0.73	LB/H		BACT-PSD	0.037	T/YR	PER ROLLING 12 MONTH PERIOD	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	OH	P0122829	11/7/2017	Emergency Diesel Generator Engine (P001)	Diesel fuel	2206	HP	TPM10	Good combustion design	0.73	LB/H		BACT-PSD	0.037	T/YR	PER ROLLING 12 MONTH PERIOD	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	OH	P0122829	11/7/2017	Emergency Diesel Generator Engine (P001)	Diesel fuel	2206	HP	TPM2.5	Good combustion design	0.73	LB/H		BACT-PSD	0.037	T/YR	PER ROLLING 12 MONTH PERIOD	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).

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OH-0374	GUERNSEY POWER STATION LLC	OH	P0122594	10/23/2017	Emergency Generators (2 identical, P004 and P005)	Diesel fuel	2206	HP	TPM	Certified to the meet the emissions standards in 40 CFR 89.112 and 89.113 pursuant to 40 CFR 60.4205(b) and 60.4202(a)(2). Good combustion practices per the manufacturer's operating manual.	0.73	LB/H		BACT-PSD	0.037	T/YR	PER ROLLING 12 MONTH PERIOD	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0374	GUERNSEY POWER STATION LLC	OH	P0122594	10/23/2017	Emergency Generators (2 identical, P004 and P005)	Diesel fuel	2206	HP	TPM10	Certified to the meet the emissions standards in 40 CFR 89.112 and 89.113 pursuant to 40 CFR 60.4205(b) and 60.4202(a)(2). Good combustion practices per the manufacturer's operating manual.	0.73	LB/H		BACT-PSD	0.037	T/YR	PER ROLLING 12 MONTH PERIOD	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0374	GUERNSEY POWER STATION LLC	OH	P0122594	10/23/2017	Emergency Generators (2 identical, P004 and P005)	Diesel fuel	2206	HP	TPM2.5	Certified to the meet the emissions standards in 40 CFR 89.112 and 89.113 pursuant to 40 CFR 60.4205(b) and 60.4202(a)(2). Good combustion practices per the manufacturer's operating manual.	0.73	LB/H		BACT-PSD	0.037	T/YR	PER ROLLING 12 MONTH PERIOD	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0372	OREGON ENERGY CENTER	OH	P0121049	9/27/2017	Emergency generator (P003)	ULSD	1529	HP	TPM10	Ultra low sulfur diesel fuel	0.5	LB/H		BACT-PSD	0.13	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0372	OREGON ENERGY CENTER	OH	P0121049	9/27/2017	Emergency generator (P003)	ULSD	1529	HP	TPM2.5	Ultra low sulfur diesel fuel	0.5	LB/H		BACT-PSD	0.13	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0370	TRUMBULL ENERGY CENTER	OH	P0122331	9/7/2017	Emergency generator (P003)	ULSD	1529	HP	TPM10	Ultra low sulfur diesel fuel	0.5	LB/H		BACT-PSD	0.13	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 0.20 g/kW-hr.
OH-0370	TRUMBULL ENERGY CENTER	OH	P0122331	9/7/2017	Emergency generator (P003)	ULSD	1529	HP	TPM2.5	Ultra low sulfur diesel fuel	0.5	LB/H		BACT-PSD	0.13	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 0.20 g/kW-hr.
OH-0367	SOUTH FIELD ENERGY LLC	OH	P0119495	9/23/2016	Emergency generator (P003)	Diesel fuel	2947	HP	TPM10	State-of-the-art combustion design	0.97	LB/H		BACT-PSD	0.24	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 0.20 g/kW-hr.
OH-0367	SOUTH FIELD ENERGY LLC	OH	P0119495	9/23/2016	Emergency generator (P003)	Diesel fuel	2947	HP	TPM2.5	State-of-the-art combustion design	0.97	LB/H		BACT-PSD	0.24	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 0.20 g/kW-hr.
PA-0310	CPV FAIRVIEW ENERGY CENTER	PA	11-00536A	9/2/2016	Emergency Generator Engines	ULSD	0		TPM		0.15	G/BHP-HR		BACT-PSD	0			
LA-0313	ST. CHARLES POWER STATION	LA	PSD-LA-804	8/31/2016	SCPS Emergency Diesel Generator 1	ULSD	2584	HP	FPM10	Compliance with NESHAP 40 CFR 63 Subpart ZZZZ and NSPS 40 CFR 60 Subpart IIII, and good combustion practices (use of ultra-low sulfur diesel fuel).	0.86	LB/H	HOURLY MAXIMUM	BACT-PSD	0.21	T/YR	ANNUAL MAXIMUM	BACT Limit = 0.15 G/BHP-HR
LA-0313	ST. CHARLES POWER STATION	LA	PSD-LA-804	8/31/2016	SCPS Emergency Diesel Generator 1	ULSD	2584	HP	FPM2.5	Compliance with NESHAP 40 CFR 63 Subpart ZZZZ and NSPS 40 CFR 60 Subpart IIII, and good combustion practices (use of ultra-low sulfur diesel fuel).	0.86	LB/H	HOURLY MAXIMUM	BACT-PSD	0.21	T/YR	ANNUAL MAXIMUM	BACT Limit = 0.15 G/BHP-HR
NJ-0085	MIDDLESEX ENERGY CENTER, LLC	NJ	19149/PCP150001	7/19/2016	EMERGENCY GENERATOR DIESEL	ULSD	0	100 H/YR	FPM	Use of Ultra Low Sulfur Diesel (ULSD) Oil a clean burning fuel and limited hours of operation	0.661	LB/H		BACT-PSD	0			
NJ-0085	MIDDLESEX ENERGY CENTER, LLC	NJ	19149/PCP150001	7/19/2016	EMERGENCY GENERATOR DIESEL	ULSD	0	100 H/YR	TPM10	Use of Ultra Low Sulfur Diesel (ULSD) Oil a clean burning fuel and limited hours of operation	0.661	LB/H		BACT-PSD	0			
NJ-0085	MIDDLESEX ENERGY CENTER, LLC	NJ	19149/PCP150001	7/19/2016	EMERGENCY GENERATOR DIESEL	ULSD	0	100 H/YR	TPM2.5	Use of Ultra Low Sulfur Diesel (ULSD) Oil a clean burning fuel and limited hours of operation	0.661	LB/H		BACT-PSD	0			
FL-0356	OKEECHOBEE CLEAN ENERGY CENTER	FL	0930117-001-AC	3/9/2016	Three 3300-kW ULSD emergency generators	ULSD	0		TPM	Use of clean fuel	0.2	G / KW-HR		BACT-PSD	0			
PA-0309	LACKAWANNA ENERGY CTR/JESSUP	PA	35-00069A	12/23/2015	2000 kW Emergency Generator	ULSD	0		FPM		0.025	GM/HP-HR		BACT-PSD	0.004	TONS	12-MONTH ROLLING BASIS	
PA-0309	LACKAWANNA ENERGY CTR/JESSUP	PA	35-00069A	12/23/2015	2000 kW Emergency Generator	ULSD	0		TPM10		0.025	GM/HP-HR		BACT-PSD	0.004	TONS	12-MONTH ROLLING BASIS	
PA-0309	LACKAWANNA ENERGY CTR/JESSUP	PA	35-00069A	12/23/2015	2000 kW Emergency Generator	ULSD	0		TPM2.5		0.025	GM/HP-HR		BACT-PSD	0.004	TONS	12-MONTH ROLLING BASIS	
MD-0045	MATTAWOMAN ENERGY CENTER	MD	PSC CASE. NO. 9330	11/13/2015	EMERGENCY GENERATOR	ULSD	1490	HP	TPM10	EXCLUSIVE USE OF ULTRA LOW SULFUR FUEL AND GOOD COMBUSTION PRACTICES.	0.18	G/HP-H		BACT-PSD	0			
MD-0045	MATTAWOMAN ENERGY CENTER	MD	PSC CASE. NO. 9330	11/13/2015	EMERGENCY GENERATOR	ULSD	1490	HP	TPM2.5	EXCLUSIVE USE OF ULTRA LOW SULFUR FUEL AND GOOD COMBUSTION PRACTICES	0.18	G/HP-H		BACT-PSD	0			
MD-0045	MATTAWOMAN ENERGY CENTER	MD	PSC CASE. NO. 9330	11/13/2015	EMERGENCY GENERATOR	ULSD	1490	HP	FPM	EXCLUSIVE USE OF ULTRA LOW SULFUR FUEL AND GOOD COMBUSTION PRACTICES	0.2	G/KW-H		BACT-PSD	0			NSPS SUBPART IIII
OH-0366	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	OH	P0117655	8/25/2015	Emergency generator (P003)	Diesel fuel	2346	HP	TPM10	State-of-the-art combustion design	0.77	LB/H		BACT-PSD	0.19	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 0.20 g/kW-hr.
OH-0366	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	OH	P0117655	8/25/2015	Emergency generator (P003)	Diesel fuel	2346	HP	TPM2.5	State-of-the-art combustion design	0.77	LB/H		BACT-PSD	0.19	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 0.20 g/kW-hr.

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WV-0025	MOUNDSVILLE COMBINED CYCLE POWER PLANT	WV	R14-0030	11/21/2014	Emergency Generator	Diesel	2015.7	HP	FPM2.5		0			BACT-PSD	0			Additionally, this engine is subject to the opacity requirements given under Å§80.113.
OH-0363	NTE OHIO, LLC	OH	P0116610	11/5/2014	Emergency generator (P002)	Diesel fuel	1100	KW	TPM	Emergency operation only, < 500 hours/year each for maintenance checks and readiness testing designed to meet NSPS Subpart IIII	0.77	LB/H		BACT-PSD	0.19	T/YR	PER ROLLING 12 MONTH PERIOD	
OH-0363	NTE OHIO, LLC	OH	P0116610	11/5/2014	Emergency generator (P002)	Diesel fuel	1100	KW	TPM10	Emergency operation only, < 500 hours/year each for maintenance checks and readiness testing designed to meet NSPS Subpart IIII	0.77	LB/H		BACT-PSD	0.19	T/YR	PER ROLLING 12 MONTH PERIOD	
OH-0363	NTE OHIO, LLC	OH	P0116610	11/5/2014	Emergency generator (P002)	Diesel fuel	1100	KW	TPM2.5	Emergency operation only, < 500 hours/year each for maintenance checks and readiness testing designed to meet NSPS Subpart IIII	0.77	LB/H		BACT-PSD	0.19	T/YR	PER ROLLING 12 MONTH PERIOD	
MD-0041	CPV ST. CHARLES	MD	PSC CASE NO. 9280	4/23/2014	EMERGENCY GENERATOR	ULSD	1500	KW	FPM	EXCLUSIVE USE OF ULTRA LOW SULFUR FUEL AND GOOD COMBUSTION PRACTICES	0.15	G/HP-H	N/A	BACT-PSD	0			
MD-0041	CPV ST. CHARLES	MD	PSC CASE NO. 9280	4/23/2014	EMERGENCY GENERATOR	ULSD	1500	KW	TPM10	EXCLUSIVE USE OF ULTRA LOW SULFUR FUEL AND GOOD COMBUSTION PRACTICES	0.15	G/HP-H	N/A	BACT-PSD	0			
MD-0042	WILDCAT POINT GENERATION FACILITY	MD	CPCN CASE NO. 9327	4/8/2014	EMERGENCY GENERATOR 1	ULSD	2250	KW	FPM	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES, LIMITED HOURS OF OPERATION, AND DESIGNED TO ACHIEVE EMISSION LIMITS	0.15	G/HP-H		BACT-PSD	0.2	G/KW-H		NSPS 40 CFR 60 SUBPART IIII
MD-0042	WILDCAT POINT GENERATION FACILITY	MD	CPCN CASE NO. 9327	4/8/2014	EMERGENCY GENERATOR 1	ULSD	2250	KW	TPM10	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES, LIMITED HOURS OF OPERATION, AND DESIGNED TO ACHIEVE EMISSION LIMITS	0.15	G/HP-H		BACT-PSD	0.23	G/KW-H		NSPS 40 CFR 60 SUBPART IIII
MD-0042	WILDCAT POINT GENERATION FACILITY	MD	CPCN CASE NO. 9327	4/8/2014	EMERGENCY GENERATOR 1	ULSD	2250	KW	TPM2.5	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES, LIMITED HOURS OF OPERATION, AND DESIGNED TO ACHIEVE EMISSION LIMITS	0.15	G/HP-H		BACT-PSD	0.23	G/KW-H		
MA-0039	SALEM HARBOR STATION REDEVELOPMENT	MA	NE-12-022	1/30/2014	Emergency Engine/Generator	ULSD	7.4	MMBTU/H	TPM10		0.15	GM/BHP-H	1 HR BLOCK AVERAGE	BACT-PSD	0.36	LB/H	1 HR BLOCK AVERAGE	
MA-0039	SALEM HARBOR STATION REDEVELOPMENT	MA	NE-12-022	1/30/2014	Emergency Engine/Generator	ULSD	7.4	MMBTU/H	TPM2.5		0.15	GM/BHP-H	1 HR BLOCK AVERAGE	BACT-PSD	0.36	LB/H	1 HR BLOCK AVERAGE	
OH-0360	CARROLL COUNTY ENERGY	OH	P0113762	11/5/2013	Emergency generator (P003)	diesel	1112	KW	TPM10	Purchased certified to the standards in NSPS Subpart IIII	0.49	LB/H		BACT-PSD	0.12	T/YR	PER ROLLING 12 MONTH PERIOD	Additional limit: 0.20 g PM10/kW-H NSPS standard.
OH-0360	CARROLL COUNTY ENERGY	OH	P0113762	11/5/2013	Emergency generator (P003)	diesel	1112	KW	TPM2.5	Purchased certified to the standards in NSPS Subpart IIII	0.49	LB/H		BACT-PSD	0.12	T/YR	PER ROLLING 12 MONTH PERIOD	Additional limit: 0.20 g PM10/kW-H NSPS standard.
LA-0308	MORGAN CITY POWER PLANT	LA	PSD-LA-767	9/26/2013	2000 KW Diesel Fired Emergency Generator Engine	Diesel	20.4	MMBTU/hr	FPM10	Good combustion and maintenance practices, and compliance with NSPS 40 CFR 60 Subpart IIII	1.06	LB/H	HOURLY MAXIMUM	BACT-PSD	0.04	T/YR	ANNUAL MAXIMUM	BACT Limit: PM10 = 0.441 lb/MWh (12 month average)
LA-0308	MORGAN CITY POWER PLANT	LA	PSD-LA-767	9/26/2013	2000 KW Diesel Fired Emergency Generator Engine	Diesel	20.4	MMBTU/hr	FPM2.5	Good combustion and maintenance practices, and compliance with NSPS 40 CFR 60 Subpart IIII	1.06	LB/H	HOURLY MAXIMUM	BACT-PSD	0.04	T/YR	ANNUAL MAXIMUM	BACT Limit: PM2.5 = 0.441 lb/MWh (12 month average)
NY-0104	CPV VALLEY ENERGY CENTER	NY	3-335600136/00001	8/1/2013	Emergency generator	ULSD	0		FPM	Ultra low sulfur diesel with maximum sulfur content 0.0015 percent.	0.03	G/BHP-H	1 H	BACT-PSD	0			Also PM-10
OK-0154	MOORELAND GENERATING STA	OK	2008-302-C(M-1)PSD	7/2/2013	DIESEL-FIRED EMERGENCY GENERATOR ENGINE	DIESEL	1341	HP	TPM2.5	COMBUSTION CONTROL.	0.44	LB/HR		BACT-PSD	0			

Table E-23
RACT/BACT/LAER Clearing House Summary for PM Emissions from Generators

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
OH-0352	OREGON CLEAN ENERGY CENTER	OH	P0110840	6/18/2013	Emergency generator	diesel	2250	KW	TPM10	Purchased certified to the standards in NSPS Subpart IIII	0.99	LB/H		BACT-PSD	0.25	T/YR	PER ROLLING 12-MONTHS	Additional limit: 0.20 g PM10/kW-H NSPS standard If required Methods 201 or 201A and 202

Table E-24
RACT/BACT/LAER Clearing House Summary for CO2e Emissions from Generators

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
*IN-0371	WABASH VALLEY RESOURCES, LLC	IN	167-45208-00091	1/11/2024	Emergency generator	Diesel	500	kw	CO2e	Good Combustion Practices	219	TONS PER YEAR	PER TWELVE (12) CONSECUTIVE MONTH PERIOD	BACT-PSD	0			
*IN-0371	WABASH VALLEY RESOURCES, LLC	IN	167-45208-00091	1/11/2024	Emergency generator	Diesel	619	hp	CO2e	Good Combustion Practices	180	TONS PER YEAR	PER TWELVE (12) CONSECUTIVE MONTH PERIOD	BACT-PSD	0			
*IN-0371	WABASH VALLEY RESOURCES, LLC	IN	167-45208-00091	1/11/2024	Emergency generator	Diesel	1000	kw	CO2e	Good Combustion Practices	389	TONS PER YEAR	PER TWELVE (12) CONSECUTIVE MONTH PERIOD	BACT-PSD	0			
*IN-0371	WABASH VALLEY RESOURCES, LLC	IN	167-45208-00091	1/11/2024	Emergency generator	Diesel	2000	kw	CO2e	Good Combustion Practices	778	TONS PER YEAR	PER TWELVE (12) CONSECUTIVE MONTH PERIOD	BACT-PSD	0			
*IL-0134	CRONUS CHEMICALS, LLC	IL	19110020	12/21/2023	Emergency generator engine	Diesel	3985	hp	CO2e		160	TONS/YEAR		BACT-PSD	75	HR/YR		
*LA-0394	GEISMAR PLANT	LA	PSD-LA-647(M-9)	12/12/2023	Emergency generator	Diesel	670	hp	CO2e	Use of good combustion practices and compliance with NSPS Subpart IIII	0			BACT-PSD	39	TONS/YR		
*IN-0365	MAPLE CREEK ENERGY LLC	IN	T153-45909-00056	6/19/2023	Emergency generator	ULSD	2012	hp	CO2e		625	TONS PER YEAR		BACT-PSD	0			Emergency generator shall use good engineering design and fuel efficient design.
IN-0359	NUCOR STEEL	IN	107-45480-00038	3/30/2023	Emergency Generator	diesel	3000	hp	CO2e	Good engineering design and manufacturers recommended operating and maintenance procedures.	163.6	LB/MMBTU		BACT-PSD	920	TONS/YR		
IN-0359	NUCOR STEEL	IN	107-45480-00038	03/30/2023	Emergency generator	Diesel	500	hp	CO2e	Good engineering design and manufacturers recommended operating and maintenance procedures.	163.6	LB/MMBTU		BACT-PSD	153	TONS PER YEAR		
TX-0939	ORANGE COUNTY ADVANCED POWER STATION	TX	166032 PSDTX1598 GHGSPDXTX210	3/13/2023	EMERGENCY GENERATOR	DIESEL	18.7	MMBTU/HR	CO2e	GOOD COMBUSTION PRACTICES, LIMITED TO 100 HR/YR	0			BACT-PSD	0			
MI-0454	LBWL-ERICKSON STATION	MI	74-18D	12/20/2022	EUEMGD	Diesel	4474.2	KW	CO2e	low carbon fuel (pipeline quality natural gas), good combustion practices, and energy efficiency measures.	590	T/YR	12-MO ROLLING TIME PERIOD	BACT-PSD	0			Carbon capture and sequestration (CCS) would not be economically feasible based upon a qualitative assessment based upon the CTG/HRSG train analysis.
IL-0133	LINCOLN LAND ENERGY CENTER	IL	18040008	7/29/2022	Emergency Engines	ULSD	1250	KW	CO2e		508	TONS/YEAR		BACT-PSD	0			Limit 1 is applicable to each engine.
LA-0391	MAGNOLIA POWER GENERATING STATION UNIT 1	LA	PSD-LA-839	6/3/2022	Emergency Diesel Generator Engine	ULSD	2937	hp	CO2e	Compliance with 40 CFR 60 Subpart IIII, good combustion practices, and the use of ultra-low sulfur diesel fuel.	74.21	KG/MM BTU		BACT-PSD	0			BACT limit is 74.21 kg/MM BTU (163.61 lb/MM BTU). Compliance with 40 CFR 60 Subpart IIII (Tier 2 non-road engines) standards, good combustion practices, and the use of ultra-low sulfur diesel fuel.
TX-0915	UNIT 5	TX	160538, PSDTX1528, GHGSPDXTX204	3/17/2021	DIESEL GENERATOR	DIESEL	0		CO2e	LIMITED 500 HR/YR OPERATION	0			BACT-PSD	0			
MI-0447	LBWL-ERICKSON STATION	MI	74-18A	1/7/2021	EUEMGD--emergency engine	diesel fuel	4474.2	KW	CO2e	low carbon fuel (pipeline quality natural gas), good combustion practices, and energy efficiency measures.	590	T/YR	12-MO ROLLING TIME PERIOD	BACT-PSD	0			Emission Limit 1 = 590 tons/year based upon a 12-month rolling time period as determined at the end of each calendar month. Carbon capture and sequestration (CCS) would not be economically feasible based upon a qualitative assessment based upon the CTG/HRSG train analysis.
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Emergency Diesel Generator (P07)	Diesel	1490	HP	CO2e	Certified to at least meet EPA's criteria for Tier 2 reciprocating internal combustion engines and the 40 CFR 60, Subpart IIII emission limitations, operation limited to 500 hours/year, and operate and maintain generator according to the manufacturer's recommendations.	0			BACT-PSD	0			

Table E-24
RACT/BACT/LAER Clearing House Summary for CO2e Emissions from Generators

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	One (1) Black Start Generator Engine	ULSD	186.6	gph	CO2e	Good combustion practices and limit operation to 500 hours per year	163.6	LB/MMBTU	3-HOUR AVERAGE	BACT-PSD	0			163.6 lb/MMBtu is the CO2e emissions rates for burning diesel fuel in 40 CFR Part 98: Mandatory Greenhouse Gas Reporting. The total CO2e emissions rate is calculated with the equation CO2(1) + CH4(25) + N2O(298).
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	Three (3) Firewater Pump Engines and two (2) Emergency Diesel Generators	ULSD	19.4	gph	CO2e	Good combustion practices and limit operation to 500 hours per year per engine	163.6	LB/MMBTU	3-HOUR AVERAGE	BACT-PSD	0			163.6 lb/MMBtu is the CO2e emissions rates for burning diesel fuel in 40 CFR Part 98: Mandatory Greenhouse Gas Reporting. The total CO2e emissions rate is calculated with the equation CO2(1) + CH4(25) + N2O(298).
LA-0364	FG LA COMPLEX	LA	PSD-LA-812	1/6/2020	Emergency Generator Diesel Engines	Diesel Fuel	550	hp	CO2e	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0			BACT-PSD	0			Engines are limited to 100 hours of non-emergency use.
VA-0332	CHICKAHOMINY POWER LLC	VA	52610-1	6/24/2019	Emergency Diesel Generator - 300 kW	ULSD	500	HR/YR	CO2e	good combustion practices, high efficiency design, and the use of ultra low sulfur diesel (\$15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	1203	T/YR	12 MO ROLLING TOTAL	BACT-PSD	0			
IL-0130	JACKSON ENERGY CENTER	IL	17040013	12/31/2018	Emergency Engine	ULSD	1500	kW	CO2e		225	TONS/YEAR		BACT-PSD	0			Applies as combination of emergency engine and fire pump engine
MI-0441	LBWL--ERICKSON STATION	MI	74-18	12/21/2018	EUEMGD1--A 1500 HP diesel fueled emergency engine	Diesel	1500	HP	CO2e	Good combustion practices and energy efficiency measures.	406	T/YR	12-MONTH ROLLING TIME PERIOD	BACT-PSD	0			Carbon capture and sequestration (CCS) would not be economically feasible based upon a qualitative assessment based upon the CTG/HRSG train analysis.
MI-0441	LBWL--ERICKSON STATION	MI	74-18	12/21/2018	EUEMGD2--A 6000 HP diesel fuel fired emergency engine	Diesel	6000	HP	CO2e	Good combustion practices and energy efficiency measures.	1590	T/YR	12-MONTH ROLLING TIME PERIOD	BACT-PSD	0			Carbon capture and sequestration (CCS) would not be economically feasible based upon a qualitative assessment based upon the CTG/HRSG train analysis.
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Large Emergency Engines (50kW)	Diesel Fuel	5364	HP	CO2e	Good Combustion of Practices and Good Operation and Maintenance Practices	1481	T/YR	ANNUAL TOTAL	BACT-PSD	0			Annual Total for 5 emergency engines.
IL-0129	CPV THREE RIVERS ENERGY CENTER	IL	16060032	7/30/2018	Emergency Engines	ULSD	0		CO2e		0			BACT-PSD	0			Permit limit: 241 tons/year (includes firewater engine)
VA-0328	C4GT, LLC	VA	52588	4/26/2018	Emergency Diesel GEN	ULSD	500	HR/YR	CO2e	use of \$15 ULSD and high efficiency design and operation	981	T/YR	12 MO ROLLING TOTAL	BACT-PSD	0			
OH-0377	HARRISON POWER	OH	P0122266	4/19/2018	Emergency Diesel Generator (P003)	Diesel fuel	1860	HP	CO2e	Efficient design and proper maintenance and operation	109.2	T/YR	PER ROLLING 12 MONTH PERIOD	BACT-PSD	0			
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	OH	P0122829	11/7/2017	Emergency Diesel Generator Engine (P001)	Diesel fuel	2206	HP	CO2e	Efficient design	116.8	T/YR	PER ROLLING 12 MONTH PERIOD	BACT-PSD	0			
OH-0374	GUERNSEY POWER STATION LLC	OH	P0122594	10/23/2017	Emergency Generators (2 identical, P004 and P005)	Diesel fuel	2206	HP	CO2e	good operating practices (proper maintenance and operation)	120	T/YR	PER ROLLING 12 MONTH PERIOD	BACT-PSD	0			
OH-0372	OREGON ENERGY CENTER	OH	P0121049	9/27/2017	Emergency generator (P003)	Diesel fuel	1529	HP	CO2e	state of the art combustion design	445	T/YR	PER ROLLING 12 MONTH PERIOD	BACT-PSD	0			
OH-0370	TRUMBULL ENERGY CENTER	OH	P0122331	9/7/2017	Emergency generator (P003)	Diesel fuel	1529	HP	CO2e	Efficient design	445	T/YR	PER ROLLING 12 MONTH PERIOD	BACT-PSD	0			
OH-0367	SOUTH FIELD ENERGY LLC	OH	P0119495	9/23/2016	Emergency generator (P003)	Diesel fuel	2947	HP	CO2e	Efficient design	858	T/YR	PER ROLLING 12 MONTH PERIOD	BACT-PSD	0			

Table E-24
RACT/BACT/LAER Clearing House Summary for CO2e Emissions from Generators

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
LA-0313	ST. CHARLES POWER STATION	LA	PSD-LA-804	8/31/2016	SCPS Emergency Diesel Generator 1	Diesel	2584	HP	CO2e	Good combustion practices	0			BACT-PSD	0			BACT Limit = 526.39 G/BHP-HR
VA-0325	GREENSVILLE POWER STATION	VA	52525	6/17/2016	DIESEL-FIRED EMERGENCY GENERATOR 3000 kW (1)	DIESEL FUEL	0		CO2e	Good Combustion Practices/Maintenance	163.6	LB/MMBTU		N/A	1178	T/YR	12 MO ROLLING TOTAL	
PA-0309	LACKAWANNA ENERGY CTR/JESSUP	PA	35-00069A	12/23/2015	2000 kW Emergency Generator	ULSD	0		CO2e		81	TONS	12-MONTH ROLLING BASIS	BACT-PSD	0			
TX-0766	GOLDEN PASS LNG EXPORT TERMINAL	TX	116055, PSDTX1386, GHGSPSDTX100	9/11/2015	Emergency Engine Generators	Diesel	750	HP	CO2e	Equipment specifications & work practices - Good combustion practices and limited operational hours	40	HR/YR		BACT-PSD	123	TPY		
OH-0366	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	OH	P0117655	8/25/2015	Emergency generator (P003)	Diesel fuel	2346	HP	CO2e	Efficient design	683	T/YR	PER ROLLING 12 MONTH PERIOD	BACT-PSD	0			
WV-0025	MOUNDSVILLE COMBINED CYCLE POWER PLANT	WV	R14-0030	11/21/2014	Emergency Generator	Diesel	2015.7	HP	CO2e		2416	LB/H		BACT-PSD	0			
OH-0363	NTE OHIO, LLC	OH	P0116610	11/5/2014	Emergency generator (P002)	Diesel fuel	1100	KW	CO2e	Emergency operation only, < 500 hours/year each for maintenance checks and readiness testing designed to meet NSPS Subpart IIII	474	T/YR	PER ROLLING 12 MONTH PERIOD	BACT-PSD	0			
TX-0748	FGE POWER, FGE TEXAS PROJECT	TX	PSD-TX-1364-GHG	4/28/2014	Emergency Generator	Diesel	6.3	mmbtu/hr	CO2e		0			BACT-PSD	0			-Limited to 52 hrs of non-emergency operation per year on a 12-month rolling total basis. -Emergency Generators shall meet the applicable monitoring and recordkeeping requirements as required in 40 CFR Part 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. -The Permittee shall install and maintain an operational non-resettable elapsed time meter for the Fire Water Pump and Emergency Generator. -The Permittee shall maintain a file of all records, data measurements, reports and documents related to the operation.
MA-0039	SALEM HARBOR STATION REDEVELOPMENT	MA	NE-12-022	1/30/2014	Emergency Engine/Generator	ULSD	7.4	mmbtu/hr	CO2e		162.85	LB/MMBTU		BACT-PSD	0			
PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE	PA	06-05150A	12/17/2013	Emergency Generator	ULSD	60	gal/hr	CO2e		65	T/YR		OTHER CASE-BY-CASE	0			
OH-0360	CARROLL COUNTY ENERGY	OH	P0113762	11/5/2013	Emergency generator (P003)	diesel	1112	KW	CO2e		433.96	T/YR	PER ROLLING 12 MONTH PERIOD	BACT-PSD	0			

Table E-24
RACT/BACT/LAER Clearing House Summary for CO2e Emissions from Generators

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
OK-0154	MOORELAND GENERATING STA	OK	2008-302-C(M-1)PSD	7/2/2013	DIESEL-FIRED EMERGENCY GENERATOR ENGINE	DIESEL	1341	HP	CO2e	A TIER 3 CERTIFIED ENGINE OPERATED < 100 HR/YR.	81.2	TPY		BACT-PSD	0			
OH-0352	OREGON CLEAN ENERGY CENTER	OH	P0110840	6/18/2013	Emergency generator	diesel	2250	KW	CO2e		878	T/YR	PER ROLLING 12-MONTHS	BACT-PSD	0			
PA-0291	HICKORY RUN ENERGY STATION	PA	37-337A	4/23/2013	EMERGENCY GENERATOR	ULSD	7.8	MMBTU/HR	CO2e		80.5	TPY	12-MONTH ROLLING BASIS	OTHER CASE-BY-CASE	0			

Table E-25
RACT/BACT/LAER Clearing House Summary for NOx Emissions from Firepumps

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
*IL-0134	CRONUS CHEMICALS	IL	19110020	12/21/2023	Firewater Pump Engine	Diesel	369	hp	NOx		4	G/KW-HR	3-HR AVG	BACT-PSD	100	HR/YR	OPERATIONAL LIMIT	Limit 1 includes NMHC, i.e., NOx + NMHC, consistent with the NSPS, 40 CFR 60 Subpart IIII
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Firewater Pump Engine	Diesel	422	hp	NOx	Compliance with 40 CFR 60 Subpart IIII	3.96	LB/HR		BACT-PSD	0			
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Firewater Pump Engine	Diesel	422	hp	NOx	Compliance with 40 CFR 60 Subpart IIII	3.96	LB/HR		BACT-PSD	0			
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Firewater Pump Engine	Diesel	237	hp	NOx	Compliance with 40 CFR 60 Subpart IIII	1.49	LB/HR		BACT-PSD	0			
MI-0454	LBWL-ERICKSON STATION	MI	74-18D	12/20/2022	EUFPRICE--A 315 HP diesel-fueled emergency engine	Diesel	2.5	MMBTU/H	NOx	Good combustion practices.	3	G/HP-H	HOURLY	BACT-PSD	0			The limit is actually in NMHC+NOx (nonmethane hydrocarbon plus NOx). Did not consider the additional control to be technically feasible; many controls don't function properly for small emitters and intermittent sources.
*NE-0064	NORFOLK CRUSH, LLC	NE	CP22-017	11/21/2022	Emergency Fire Water Pump Engine	Diesel	510	hp	NOx		2.38	G/HP-HR	3-HOUR OR TEST METHOD AVERAGE	BACT-PSD	0			Emission standard as required in NSPS Subpart IIII Table 4 for stationary emergency fire pump engines. The standard was calculated using a ratio of 79.4% NOx for the NMHC+NOx emission standard of 3.0 g/hp-hr. This unit is limited to 100 hours of operation for non-emergency use, this is to ensure the engine meets the definition of limited use engine.
OH-0387	INTEL OHIO SITE	OH	P0132323	9/20/2022		Diesel	275	hp	NOx	Certified to meet the standards in Table 4 of 40 CFR Part 60, Subpart IIII and good combustion practices	4	G/KW-H	4.0 GRAMS NOX + NMHC/KW-HR	BACT-PSD	8.5	LB/H	SEE NOTES	2.1 tons per rolling, 12-month period
IL-0133	LINCOLN LAND ENERGY CENTER	IL	18040008	7/29/2022	Fire Water Pump Engine	ULSD	320	horsepower	NOx		4	GRAMS	KILOWATT-HOUR	BACT-PSD	0			Limit 1 includes non-methane hydrocarbons (NMHC), i.e., NOx + NMHC, consistent with the NSPS, 40 CFR 60 Subpart IIII.
AK-0088	LIQUEFACTION PLANT	AK	AQ1539CPT01	7/7/2022	Diesel Fire Pump Engine	Diesel	27.9	Gal/hr	NOx	Good Combustion Practices; Limited Operation; 40 CFR 60 Subpart IIII	3.6	G/HP-HR		BACT-PSD	500	HRS/YR		NOx emissions from diesel firewater pump engine EU 11 will not exceed 3.6 g/hp-hr @ 15% O2 (95% of NMHC + NOx from Table 4 of NSPS Subpart IIII, also equivalent to EPA Tier 3, includes 25% not to exceed factor of safety);
AK-0088	LIQUEFACTION PLANT	AK	AQ1539CPT01	7/7/2022	Diesel Fire Pump Engine	Diesel	27.9	Gal/hr	NOx	Good Combustion Practices; Limited Operation; 40 CFR 60 Subpart IIII	3.6	G/HP-HR		BACT-PSD	500	HRS/YR		NOx emissions from diesel firewater pump engine EU 11 will not exceed 3.6 g/hp-hr @ 15% O2 (95% of NMHC + NOx from Table 4 of NSPS Subpart IIII, also equivalent to EPA Tier 3, includes 25% not to exceed factor of safety);
MI-0451	MEC NORTH, LLC	MI	167-17B	6/23/2022	EUFENGINE (North Plant): Fire Pump Engine	Diesel	300	HP	NOx	Good combustion practices and meeting NSPS Subpart IIII requirements.	3	G/B-HP-H	HOURLY	BACT-PSD	0			The limit is actually in NMHC+NOx (nonmethane hydrocarbon plus NOx), which is what is required in the NSPS.
MI-0452	MEC SOUTH, LLC	MI	168-17B	6/23/2022	EUFENGINE (South Plant): Fire pump engine	Diesel	300	HP	NOx	Good Combustion Practices and meeting NSPS Subpart IIII requirements	3	G/B-HP-H	HOURLY	BACT-PSD	0			The limit is actually in NMHC+NOx (nonmethane hydrocarbon plus NOx), which is what is required in the NSPS.
LA-0391	MAGNOLIA POWER GENERATING STATION UNIT 1	LA	PSD-LA-839	6/3/2022	Emergency Diesel Fired Water Pump Engine	ULSD	355	hp	NOx	Compliance with 40 CFR 60 Subpart IIII, good combustion practices, and use of ultra low sulfur diesel fuel.	3	G/HP-HR		BACT-PSD	0			BACT limit is 3.0 g/BHP-hr (NOx + NMHC). Compliance with 40 CFR 60 Subpart IIII (Tier 2 non-road engines) standards, good combustion practices, and the use of ultra-low sulfur diesel fuel.
*WV-0033	MAIDSVILLE	WV	R14-0038	1/5/2022	Fire Water Pump	ULSD	240	bhp	NOx	Combustion control (retarded timing and/or lean burn)	1.59	LB/HR		BACT-PSD	4	G/BKW		Certified Engine
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Emergency Diesel Fire Pump (P06)	Diesel	282	HP	NOx	Operation limited to 500 hours/year and shall be operated and maintained according to the manufacturer's recommendations.	3	G/HP-H		BACT-PSD	0			

Table E-25
RACT/BACT/LAER Clearing House Summary for NOx Emissions from Firepumps

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
AK-0085	GAS TREATMENT PLANT	AK	AQ1524CPT01	8/13/2020	Three (3) Firewater Pump Engines and two (2) Emergency Diesel Generators	ULSD	19.4	gph	NOx	Good combustion practices, limit operation to 500 hours per year per engine	3.6	G/HP-HR	3-HOUR AVERAGE	BACT-PSD	0			EUs 40 - 44 are required to achieve EPA Tier 3 emission status. 3.6 g/hp-hr limit is 95% of the total for NMHC + NOx and includes a 25% not to exceed factor of safety.
LA-0364	FG LA COMPLEX	LA	PSD-LA-812	1/6/2020	Emergency Fire Water Pumps	Diesel Fuel	550	hp	NOx	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0			BACT-PSD	0			Engines are limited to 100 hours of non-emergency use.
*MI-0445	INDECK NILES, LLC	MI	75-168	11/26/2019	EUPFENGINE (Emergency engine-diesel fire pump	diesel fuel	1.66	MMBTU/H	NOx	Good Combustion Practices and meeting NSPS Subpart IIII requirements	3	G/BHP-H	HOURLY	BACT-PSD	0			The limit is actually in NMHC+NOx (nonmethane hydrocarbon plus NOx), which is what is required in the NSPS.
VA-0332	CHICKAHOMINY POWER LLC	VA	52610-1	6/24/2019	Emergency Fire Water Pump	ULSD	500	HR/YR	NOx	good combustion practices, high efficiency design, and the use of ultra low sulfur diesel (\$15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	3	G/HP-HR		BACT-PSD	0.7	T/YR		
MI-0441	LBWL-ERICKSON STATION	MI	74-18	12/21/2018	EUEMGD2--A 6000 HP diesel fuel fired emergency engine	Diesel	6000	HP	Nitrogen Oxides (NOx)	Good combustion practices and will be NSPS compliant.	6.4	G/KW-H	HOURLY	BACT-PSD	0			Emission limit is for NMHC+NOx. Did not consider the additional control to be technically feasible since many controls don't function properly for small emitters and intermittent sources.
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Firewater Pumps	Diesel Fuel	634	kW	Nitrogen Oxides (NOx)	Good Combustion and Operating Practices.	3.1	G/HP-H		BACT-PSD	0			Comply with 40 CFR 60 Subpart IIII and limiting normal operations to 50 h/yr.
FL-0367	SHADY HILLS COMBINED CYCLE FACILITY	FL	1010524-001-AC	7/27/2018	Emergency Fire Pump Engine (347 HP)	ULSD	8700	gal/year	Nitrogen Oxides (NOx)	Operate and maintain the engine according to the manufacturer's written instructions	4	G/KW-HR		BACT-PSD	0			Certified engine, no testing required. Limit is for NOx + NMHC
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	MI	19-18	7/16/2018	EUPFENGINE: Fire pump engine	Diesel	399	BHP	Nitrogen Oxides (NOx)	State of the art combustion design.	4	G/KW-H	HOURLY	BACT-PSD	0			The limit is actually in NMHC+ NOx (nonmethane hydrocarbon plus NOx) which is what is required in the NSPS.
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MI	167-17 AND 168-17	6/29/2018	EUPFENGINE (South Plant): Fire pump engine	Diesel	300	HP	Nitrogen Oxides (NOx)	Good combustion practices and meeting NSPS Subpart IIII requirements.	3	G/BHP-H	HOURLY	BACT-PSD	0			The limit is actually in NMHC + NOx (nonmethane hydrocarbon plus NOx) which is what is required in the NSPS.
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MI	167-17 AND 168-17	6/29/2018	EUPFENGINE (North Plant): Fire pump engine	Diesel	300	HP	Nitrogen Oxides (NOx)	Good combustion practices and meeting NSPS Subpart IIII requirements.	3	G/BHP-H	HOURLY	BACT-PSD	0			The limit is actually in NMHC+NOx (nonmethane hydrocarbon plus NOx), which is what is required in the NSPS.
VA-0328	C4GT, LLC	VA	52588	4/26/2018	Emergency Fire Water Pump	Ultra Low Sulfur Diesel	500	HR/YR	Nitrogen Oxides (NOx)	Good combustion practices and the use of ultra low sulfur diesel (\$15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	3	G/HP-HR		BACT-PSD	0			
OH-0377	HARRISON POWER	OH	P0122266	4/19/2018	Emergency Fire Pump (P004)	Diesel fuel	320	HP	Nitrogen Oxides (NOx)	Good combustion practices (ULSD) and compliance with 40 CFR Part 60, Subpart IIII	2.12	LB/H	NMHC+NOX. SEE NOTES.	BACT-PSD	0.11	T/YR	NMHC+NOX. SEE NOTES.	All emissions limits are for Non-methane hydrocarbon (NMHC) + NOX emissions. 0.11 t/yr per rolling, 12-month period. NSPS: Non-methane hydrocarbon (NMHC) + NOX emissions shall not exceed 4.0 g/kW-hr (3.0 g/hp-hr).
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	OH	P0122829	11/7/2017	Emergency Diesel Fire Pump Engine (P002)	Diesel fuel	700	HP	Nitrogen Oxides (NOx)	Good combustion design	4.97	LB/H	NMHC+NOX. SEE NOTES.	BACT-PSD	0.25	T/YR	NMHC+NOX. SEE NOTES.	Nonmethane hydrocarbons plus nitrogen oxides (NMHC+NOx) emissions shall not exceed 4.0 g/kW-hour, 4.97 pounds per hour and 0.25 ton per rolling, 12-month period. NSPS: Non-methane hydrocarbon (NMHC) + NOX emissions shall not exceed 4.0 g/kW-hr (3.0 g/hp-hr).
OH-0374	GUERNSEY POWER STATION LLC	OH	P0122594	10/23/2017	Emergency Fire Pump (P006)	Diesel fuel	410	HP	Nitrogen Oxides (NOx)	Certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII. Good combustion practices per the manufacturer's operating manual	2.7	LB/H	NMHC+NOX. SEE NOTES.	BACT-PSD	0.14	T/YR	NMHC+NOX. SEE NOTES.	Nonmethane hydrocarbons plus nitrogen oxides (NMHC+NOx) emissions shall not exceed 4.0 g/kW-hour (3.0 g/bhp-h), 2.70 pounds per hour and 0.14 ton per rolling, 12-month period.
OH-0372	OREGON ENERGY CENTER	OH	P0121049	9/27/2017	Emergency fire pump engine (P004)	Diesel fuel	300	HP	Nitrogen Oxides (NOx)	State-of-the-art combustion design	1.97	LB/H		BACT-PSD	0.49	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit is 4.0 g/kW-hr (3.0 g/hp-hr). NSPS is Non-methane hydrocarbon (NMHC) + NOX emissions shall not exceed 4.0 g/kW-hr (3.0 g/hp-hr).
OH-0370	TRUMBULL ENERGY CENTER	OH	P0122331	9/7/2017	Emergency fire pump engine (P004)	Diesel fuel	300	HP	Nitrogen Oxides (NOx)	State-of-the-art combustion design	1.97	LB/H		BACT-PSD	0.49	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 4.0 g/kW-hr. NSPS: Non-methane hydrocarbon (NMHC) + NOx emissions shall not exceed 4.0 g/kW-hr.
MI-0423	INDECK NILES, LLC	MI	75-16	1/4/2017	EUPFENGINE (Emergency engine--diesel fire pump)	Diesel	1.66	MMBTU/H	Nitrogen Oxides (NOx)	Good combustion practices and meeting NSPS Subpart IIII requirements.	3	G/BHP-H	TEST PROTOCOL WILL SPECIFY AVG TIME	BACT-PSD	0			The limit is actually in NMHC + NOx (nonmethane hydrocarbon plus NOx), which is what is required in the NSPS.
MI-0424	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13C	12/5/2016	EUPFENGINE (Emergency engine--diesel fire pump)	diesel	500	H/YR	Nitrogen Oxides (NOx)	Good combustion practices.	3	G/HP-H	TEST PROTOCOL WILL SPECIFY AVG TIME	BACT-PSD	0			
OH-0367	SOUTH FIELD ENERGY LLC	OH	P0119495	9/23/2016	Emergency fire pump engine (P004)	Diesel fuel	311	HP	Nitrogen Oxides (NOx)	State-of-the-art combustion design	1.79	LB/H		BACT-PSD	0.45	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 3.5 g/kW-hr. NSPS: Non-methane hydrocarbon (NMHC) + NOx emissions shall not exceed 4.0 g/kW-hr.
LA-0313	ST. CHARLES POWER STATION	LA	PSD-LA-804	8/31/2016	SCPS Emergency Diesel Firewater Pump 1	Diesel	282	HP	Nitrogen Oxides (NOx)	Compliance with NESHAP 40 CFR 63 Subpart ZZZZ and NSPS 40 CFR 60 Subpart IIII, and good combustion practices (use of ultra-low sulfur diesel fuel).	1.87	LB/H	HOURLY MAXIMUM	BACT-PSD	0.47	T/YR	ANNUAL MAXIMUM	BACT Limit = 3.0 G/BHP-HR (NMHC + NOx)
OH-0366	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	OH	P0117655	8/25/2015	Emergency fire pump engine (P004)	Diesel fuel	140	HP	Nitrogen Oxides (NOx)	State-of-the-art combustion design	0.81	LB/H		BACT-PSD	0.2	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 3.5 g/kW-hr. NSPS: Non-methane hydrocarbon (NMHC) + NOx emissions shall not exceed 4.0 g/kW-hr.
WV-0025	MOUNDSVILLE COMBINED CYCLE POWER PLANT	WV	R14-0030	11/21/2014	Fire Pump Engine	Diesel	251	HP	Nitrogen Oxides (NOx)		0			BACT-PSD	0			NMHC + NOX

Table E-25
RACT/BACT/LAER Clearing House Summary for NOx Emissions from Firepumps

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
OH-0363	NTE OHIO, LLC	OH	P0116610	11/5/2014	Emergency Fire Pump Engine (P003)	Diesel fuel	260	HP	Nitrogen Oxides (NOx)	Emergency operation only, < 500 hours/year each for maintenance checks and readiness testing designed to meet NSPS Subpart IIII	1.72	LB/H		BACT-PSD	0.43	T/YR	PER ROLLING 12 MONTH PERIOD	NSPS Subpart IIII: Non-methane hydrocarbon (NMHC) + NOx emissions shall not exceed 3.0 g/hp-hr.
MD-0046	KEYS ENERGY CENTER	MD	PSC CASE NO. 9297	10/31/2014	DIESEL-FIRED FIRE PUMP ENGINE	ULTRA-LOW SULFUR DIESEL	300	HP	Nitrogen Oxides (NOx)	EXCLUSIVE USE OF ULTRA LOW SULFUR DIESEL FUEL AND GOOD COMBUSTION PRACTICES	4	G/KW-H		BACT-PSD	0			FOR COMBINED NON-METHANE HYDROCARBONS (NMHC) AND NITROGEN OXIDES (NOx), NSPS SUBPART IIII.
MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13	12/4/2013	Emergency Engine --Diesel Fire Pump (EUFPEENGINE)	Diesel	165	HP	Nitrogen Oxides (NOx)	Good combustion practices	3	G/HP-H	TEST PROTOCOL	BACT-PSD	0			
OH-0360	CARROLL COUNTY ENERGY	OH	P0113762	11/5/2013	Emergency fire pump engine (P004)	diesel	400	HP	Nitrogen Oxides (NOx)	Purchased certified to the standards in NSPS Subpart IIII	2.3	LB/H		BACT-PSD	0.57	T/YR	PER ROLLING 12 MONTH PERIOD	Additional limits: 3.5 g NOx/KW-H, and 4.0 g NMHC+NOx/KW-h (3.0 g/hp-h), the standard from Subpart IIII.
LA-0308	MORGAN CITY POWER PLANT	LA	PSD-LA-767	9/26/2013	380 HP Diesel Fired Pump Engine	Diesel	2.3	MMBTU/hr	Nitrogen Oxides (NOx)	Good combustion and maintenance practices, and compliance with NSPS 40 CFR 60 Subpart IIII	2.92	LB/H	HOURLY MAXIMUM	BACT-PSD	0.12	T/YR	ANNUAL MAXIMUM	
LA-0308	MORGAN CITY POWER PLANT	LA	PSD-LA-767	9/26/2013	380 HP Diesel Fired Pump Engine	Diesel	2.3	MMBTU/hr	Nitrous Oxide (N2O)	Good combustion practices	0			BACT-PSD	0			BACT Limit = 0.0013 lb/MMBTU (12 month average)
MI-0410	THETFORD GENERATING STATION	MI	191-12	7/25/2013	EU-FPEENGINE: Diesel fuel fired emergency backup fire pump	diesel fuel	315	hp nameplate	Nitrogen Oxides (NOx)	Proper combustion design and ultra low sulfur diesel fuel.	3	G/HP-H	TEST PROTOCOL WILL SPECIFY AVG. TIME.	BACT-PSD	0			The limit is NMHC + NOx, but that pollutant is not an option in the "Pollutant" field above. Ultra low sulfur diesel fuel (15 ppmw); 100 hours per year operation for maintenance and readiness testing; NSPS IIII and NESHAP ZZZZ.
OH-0352	OREGON CLEAN ENERGY CENTER	OH	P0110840	6/18/2013	Emergency fire pump engine	diesel	300	HP	Nitrogen Oxides (NOx)	Purchased certified to the standards in NSPS Subpart IIII	1.7	LB/H		BACT-PSD	0.43	T/YR	PER ROLLING 12-MONTHS	Additional limits: 3.5 g NOx/KW-H, and 4.0 g NMHC + NOx/KW-hr, the standard from Subpart IIII. Method 7E if required.

Table E-26
RACT/BACT/LAER Clearing House Summary for CO Emissions from Firepumps

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
*IL-0134	CRONUS CHEMICALS	IL	19110020	12/21/2023	Firewater Pump Engine	Diesel	369	hp	CO		3.5	G/KW-HR	3-HR AVG	BACT-PSD	100	HR/YR	OPERATIONAL LIMIT	Limit 1 is consistent with NSPS IIII
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Firewater Pump Engine	Diesel	422	hp	CO	Compliance with 40 CFR 60 Subpart IIII	3.44	LB/HR		BACT-PSD	0			
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Firewater Pump Engine	Diesel	422	hp	CO	Compliance with 40 CFR 60 Subpart IIII	3.44	LB/HR		BACT-PSD	0			
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Firewater Pump Engine	Diesel	237	hp	CO	Compliance with the requirements of 40 CFR 60 Subpart IIII	0.5	LB/HR		BACT-PSD	0			
*IN-0365	MAPLE CREEK ENERGY LLC	IN	T153-45909-00056	6/19/2023	Emergency fire pump	Diesel	420	brake hp	CO		3.5	G/KW-HR		BACT-PSD	0			
MI-0454	LBWL-ERICKSON STATION	MI	74-18D	12/20/2022	EUFPRICE--A 315 HP diesel-fueled emergency engine	Diesel	2.5	MMBTU/H	CO	Good combustion practices.	2.6	G/HP-H	HOURLY	BACT-PSD	0			Cost analysis considered Oxidation Catalyst for a 1MW emergency engine. The control considered technically feasible was catalytic oxidation; however, it was not considered economically feasible.
OH-0387	INTEL OHIO SITE	OH	P0132323	9/20/2022	Emergency Water Pumps	Diesel	275	hp	CO	Certified to meet the standards in Table 4 of 40 CFR Part 60, Subpart IIII and good combustion practices	3.5	G/KW-H		BACT-PSD	1.8	LB/H	SEE NOTES	0.5 tons per rolling, 12-month period
IL-0133	LINCOLN LAND ENERGY CENTER	IL	18040008	7/29/2022	Fire Water Pump Engine	ULSD	320	horsepower	CO		3.5	GRAMS	KILOWATT-HOUR	BACT-PSD	0			Emission Limit 1 is consistent with the NSPS, 40 CFR 60 Subpart IIII.
AK-0088	LIQUEFACTION PLANT	AK	AQ1539CPT 01	7/7/2022	Diesel Fire Pump Engine	Diesel	27.9	Gal/hr	CO	Oxidation Catalyst; Limited Operation; 40 CFR 60 Subpart IIII	3.3	G/HP-HR		BACT-PSD	500	HRS/YR		CO emissions from the diesel firewater pump engine EU 11 will not exceed 3.3 g/hp-hr @ 15% O2 (Table 4 from NSPS Subpart IIII, also equivalent to EPA Tier 3, includes 25% not to exceed factor of safety).
MI-0451	MEC NORTH, LLC	MI	167-17B	6/23/2022	EUPENGINE (North Plant): Fire Pump Engine	Diesel	300	HP	CO	Good combustion practices and meeting NSPS Subpart IIII requirements	2.6	G/B-HP-H	HOURLY	BACT-PSD	0			An oxidation catalyst is \$39,500/ton for PM10, CO, and VOC together.
MI-0452	MEC SOUTH, LLC	MI	168-17B	6/23/2022	EUPENGINE (South Plant): Fire pump engine	Diesel	300	HP	CO	Good Combustion Practices and meeting NSPS Subpart IIII requirements	2.6	G/B-HP-H	HOURLY	BACT-PSD	0			An oxidation catalyst is \$39,500/ton for PM10, CO, and VOC together.
LA-0391	MAGNOLIA POWER GENERATING STATION UNIT 1	LA	PSD-LA-839	6/3/2022	Emergency Diesel Fired Water Pump Engine	ULSD	355	hp	CO	Compliance with 40 CFR 60 Subpart IIII, good combustion practices, and the use of ultra-low sulfur diesel fuel.	2.6	G/HP-HR		BACT-PSD	0			BACT limit is 2.6 g/BHP-hr. Compliance with 40 CFR 60 Subpart IIII (Tier 2 non-road engines) standards, good combustion practices, and the use of ultra-low sulfur diesel fuel.
*WV-0033	MAIDSVILLE	WV	R14-0038	1/5/2022	Fire Water Pump	ULSD	240	bhp	CO	Good Combustion Practices w/ OxCat. Applicant did not justify why an oxcat is infeasible for an emergency engine	1.38	LB/HR		BACT-PSD	0.6	G/BKW		Certified Engine
FL-0371	SHADY HILLS COMBINED CYCLE FACILITY	FL	1010524-003-AC (PSD-FL-444A)	6/7/2021	Emergency Fire Pump Engine (347 HP)	ULSD	2.46	MMBtu/hour	CO		3.5	G/KW-HOUR		BACT-PSD	0			
MI-0447	LBWL--ERICKSON STATION	MI	74-18A	1/7/2021	EUFPRICE--A 315 HP diesel fueled emergency engine	Diesel	2.5	MMBTU/H	CO	Good combustion practices	2.6	G/HP-H	HOURLY	BACT-PSD	0			Cost analysis considered oxidation catalyst for a 1MW emergency engine. The control considered technically feasible was catalytic oxidation; however, it was not considered economically feasible.
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Emergency Diesel Fire Pump (P06)	Diesel	282	HP	CO	Operation limited to 500 hours/year and shall be operated and maintained according to the manufacturer's recommendations.	2.6	G/HP-H		BACT-PSD	0			
LA-0364	FG LA COMPLEX	LA	PSD-LA-812	1/6/2020	Emergency Fire Water Pumps	Diesel Fuel	550	hp	CO	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0			BACT-PSD	0			Engines are limited to 100 hours of non-emergency use.
*MI-0445	INDECK NILES, LLC	MI	75-16B	11/26/2019	EUPENGINE (Emergency engine-diesel fire pump	diesel fuel	1.66	MMBTU/H	CO	Good Combustion Practices and meeting NSPS Subpart IIII requirements	2.6	G/BHP-H	HOURLY	BACT-PSD	0			On average, an oxidation catalyst is greater than \$308,000/ton for CO and VOC together.

Table E-26
RACT/BACT/LAER Clearing House Summary for CO Emissions from Firepumps

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
VA-0332	CHICKAHOMINY POWER LLC	VA	52610-1	6/24/2019	Emergency Fire Water Pump	ULSD	500	HR/YR	CO	good combustion practices, high efficiency design, and the use of ultra low sulfur diesel (\$15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	2.6	G/HP-H		BACT-PSD	0.6	T/YR		
IL-0130	JACKSON ENERGY CENTER	IL	17040013	12/31/2018	Firewater Pump Engine	ULSD	420	horsepower	CO		3.5	G/KW-HR		BACT-PSD	0			NSPS Subpart IIII limit of 3.5 g/kW-hr is BACT
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Firewater Pumps	Diesel Fuel	634	kW	CO	Good Combustion and Operating Practices.	3.7	G/HP-H		BACT-PSD	0			Comply with 40 CFR 60 Subpart IIII and limiting normal operations to 50 hr/yr.
IL-0129	CPV THREE RIVERS ENERGY CENTER	IL	16060032	7/30/2018	Firewater Pump Engine	ULSD	0		CO		0			BACT-PSD	0			Limits of the NSPS, 40 CFR 60 Subpart IIII, are BACT for CO. For CO; 3.5 g/kW-hr
FL-0367	SHADY HILLS COMBINED CYCLE FACILITY	FL	1010524-001-AC	7/27/2018	Emergency Fire Pump Engine (347 HP)	ULSD	8700	gal/year	CO	Operate and maintain the engine according to the manufacturer's written instructions	3.5	G/KW-HOUR		BACT-PSD	0			Certified engine, no testing required
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	MI	19-18	7/16/2018	EUFENGINE: Fire pump engine	Diesel	399	BHP	CO	State of the art combustion design.	3.5	G/KW-H	HOURLY	BACT-PSD	0			
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MI	167-17 AND 168-17	6/29/2018	EUFENGINE (South Plant): Fire pump engine	Diesel	300	HP	CO	Good combustion practices and meeting NSPS Subpart IIII requirements.	2.6	G/BPH-H	HOURLY	BACT-PSD	0			An oxidation catalyst is \$39,500/ton for PM10, CO and VOC together.
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MI	167-17 AND 168-17	6/29/2018	EUFENGINE (North Plant): Fire pump engine	Diesel	300	HP	CO	Good combustion practices and meeting NSPS Subpart IIII requirements.	2.6	G/BHP-H	HOURLY	BACT-PSD	0			An oxidation catalyst is \$39,500/ton for PM10, CO and VOC together.
OH-0377	HARRISON POWER	OH	P0122266	4/19/2018	Emergency Fire Pump (P004)	Diesel fuel	320	HP	CO	Good combustion practices (ULSD) and compliance with 40 CFR Part 60, Subpart IIII	1.83	LB/H		BACT-PSD	0.092	T/YR	PER ROLLING 12 MONTH PERIOD	NSPS CO Standard limit is 3.5 g/kW-hr (2.6 g/hp-hr).
FL-0363	DANIA BEACH ENERGY CENTER	FL	0110037-017-AC	12/4/2017	Emergency Fire Pump Engine (422 hp)	ULSD	0		CO	Certified engine	3.5	G / KWH		BACT-PSD	0			Certified engine, no testing required
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	OH	P0122829	11/7/2017	Emergency Diesel Fire Pump Engine (P002)	Diesel fuel	700	HP	CO	Good combustion design	4.01	LB/H		BACT-PSD	0.2	T/YR	PER ROLLING 12 MONTH PERIOD	CO Standard limit is 3.5 g/kW-hr (2.6 g/hp-hr).
OH-0374	GUERNSEY POWER STATION LLC	OH	P0122594	10/23/2017	Emergency Fire Pump (P006)	Diesel fuel	410	HP	CO	Certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII. Good combustion practices per the manufacturer's operating manual.	2.36	LB/H		BACT-PSD	0.12	T/YR	PER ROLLING 12 MONTH PERIOD	CO Standard limit is 3.5 g/kW-hr (2.6 g/hp-hr).
OH-0372	OREGON ENERGY CENTER	OH	P0121049	9/27/2017	Emergency fire pump engine (P004)	Diesel fuel	300	HP	CO	state of the art combustion design	1.73	LB/H		BACT-PSD	0.43	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit is 3.5 g/kW-hr (2.6 g/hp-hr).
OH-0370	TRUMBULL ENERGY CENTER	OH	P0122331	9/7/2017	Emergency fire pump engine (P004)	Diesel fuel	300	HP	CO	State-of-the-art combustion design	1.73	LB/H		BACT-PSD	0.43	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 3.5 g/kW-hr.
MI-0423	INDECK NILES, LLC	MI	75-16	1/4/2017	EUFENGINE (Emergency engine--diesel fire pump)	Diesel	1.66	MM8TU/H	CO	Good combustion practices and meeting NSPS Subpart IIII requirements.	2.6	G/BHP-H	TEST PROTOCOL WILL SPECIFY AVG. TIME	BACT-PSD	0			On average, an oxidation catalyst is greater than \$308,000/ton for CO and VOC together.
MI-0424	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13C	12/5/2016	EUFENGINE (Emergency engine--diesel fire pump)	diesel	500	H/YR	CO	Good combustion practices.	3.7	G/HP-H	TEST PROTOCOL WILL SPECIFY AVG TIME	BACT-PSD	0			An oxidation catalyst is greater than \$501,000/ton for CO and VOC together.
OH-0367	SOUTH FIELD ENERGY LLC	OH	P0119495	9/23/2016	Emergency fire pump engine (P004)	Diesel fuel	311	HP	CO	State-of-the-art combustion design	1.79	LB/H		BACT-PSD	0.45	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 3.5 g/kW-hr.
PA-0310	CPV FAIRVIEW ENERGY CENTER	PA	11-00536A	9/2/2016	Emergency Fire Pump Engine	ULSD	0		CO		2.61	G/BHP-HR		BACT-PSD	0			
LA-0313	ST. CHARLES POWER STATION	LA	PSD-LA-804	8/31/2016	SCPS Emergency Diesel Firewater Pump 1	ULSD	282	HP	CO	Compliance with NESHAP 40 CFR 63 Subpart ZZZZ and NSPS 40 CFR 60 Subpart IIII, and good combustion practices (use of ultra-low sulfur diesel fuel).	1.62	LB/H	HOURLY MAXIMUM	BACT-PSD	0.4	T/YR	ANNUAL MAXIMUM	BACT Limit = 2.6 G/BHP-HR
NJ-0085	MIDDLESEX ENERGY CENTER, LLC	NJ	19149/PCP1 50001	7/19/2016	EMERGENCY DIESEL FIRE PUMP	ULSD	100	H/YR	CO	Use of Ultra Low Sulfur Diesel (ULSD) Oil a clean burning fuel and limited hours of operation	1.87	LB/H		BACT-PSD	0			
FL-0356	OKEECHOBEE CLEAN ENERGY CENTER	FL	0930117-001-AC	3/9/2016	One 422-hp emergency fire pump engine	ULSD	0		CO	Use of clean engine technology	3.5	G / KW-HR		BACT-PSD	0			
PA-0309	LACKAWANNA ENERGY CTR/JESSUP	PA	35-00069A	12/23/2015	Fire pump engine	ULSD	15	gal/hr	CO		0.5	GM/HP-HR		BACT-PSD	0.009	TONS	12-MONTH ROLLING BASIS	
PA-0311	MOXIE FREEDOM GENERATION PLANT	PA	40-00129A	9/1/2015	Fire Pump Engine	diesel	0		CO		1	G/HP-HR		BACT-PSD	0.28	TPY	12-MOTH ROLLING BASIS	

Table E-26
RACT/BACT/LAER Clearing House Summary for CO Emissions from Firepumps

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
OH-0366	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	OH	P0117655	8/25/2015	Emergency fire pump engine (P004)	Diesel fuel	140	HP	CO	State-of-the-art combustion design	1.15	LB/H		BACT-PSD	0.29	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 5.0 g/kW-hr.
WV-0025	MOUNDSVILLE COMBINED CYCLE POWER PLANT	WV	R14-0030	11/21/2014	Fire Pump Engine	Diesel	251	HP	CO		1.44	LB/H		BACT-PSD	0			
OH-0363	NTE OHIO, LLC	OH	P0116610	11/5/2014	Emergency Fire Pump Engine (P003)	Diesel fuel	260	HP	CO	Emergency operation only, < 500 hours/year each for maintenance checks and readiness testing designed to meet NSPS Subpart IIII	0.69	LB/H		BACT-PSD	0.17	T/YR	PER ROLLING 12 MONTH PERIOD	
MD-0046	KEYS ENERGY CENTER	MD	PSC CASE NO. 9297	10/31/2014	DIESEL-FIRED FIRE PUMP ENGINE	ULSD	300	HP	CO	EXCLUSIVE USE OF ULTRA LOW SULFUR DIESEL FUEL AND GOOD COMBUSTION PRACTICES	3.5	G/KW-H		BACT-PSD	0			NSPS SUBPART IIII
NJ-0081	PSEG FOSSIL LLC SEWAREN GENERATING STATION	NJ	18068 - (BOP120002)	3/7/2014	Emergency diesel fire pump	ULSD	0		CO		0.079	LB/H		BACT-PSD	2.6	G/B-HP-H		
MA-0039	SALEM HARBOR STATION REDEVELOPMENT	MA	NE-12-022	1/30/2014	Fire Pump Engine	ULSD	2.7	MMBTU/H	CO		2.6	GM/BHP-H	1 HR BLOCK AVG	OTHER CASE-BY-CASE	2.14	LB/H	1 HR BLOCK AVG	
MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13	12/4/2013	Emergency Engine --Diesel Fire Pump (EUFFENGINE)	Diesel	165	HP	CO	Good combustion practices	3.7	G/HP-H	TEST PROTOCOL	BACT-PSD	0			An oxidation catalyst is greater than \$619,000/ton for CO and VOC together.
OH-0360	CARROLL COUNTY ENERGY	OH	P0113762	11/5/2013	Emergency fire pump engine (P004)	diesel	400	HP	CO	Purchased certified to the standards in NSPS Subpart IIII	2.3	LB/H		BACT-PSD	0.57	T/YR	PER ROLLING 12-MONTHS	Additional limit: 3.5 g CO/kW-h, standard from Subpart IIII.
MD-0041	CPV ST. CHARLES	MD	PSC CASE NO. 9280	4/23/2014	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	ULSD	300	HP	CO	USE OF ULTRA LOW SULFUR DIESEL AND GOOD COMBUSTION PRACTICES	2.6	G/HP-H	N/A	BACT-PSD	0			
MD-0042	WILDCAT POINT GENERATION FACILITY	MD	CPCN CASE NO. 9327	4/8/2014	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	ULSD	477	HP	CO	USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES AND HOURS OF OPERATION LIMITED TO 100 HOURS PER YEAR	2.6	G/HP-H		BACT-PSD	3.49	G/KW-H		NSPS 40 CFR 60 SUBPART IIII
MD-0045	MATTAWOMAN ENERGY CENTER	MD	PSC CASE. NO. 9330	11/13/2015	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	ULSD	305	HP	CO	USE OF ULTRA LOW SULFUR DIESEL AND GOOD COMBUSTION PRACTICES	3.5	G/KW-H		BACT-PSD	0			NSPS SUBPART IIII.
PA-0291	HICKORY RUN ENERGY STATION	PA	37-337A	4/23/2013	EMERGENCY FIREWATER PUMP	ULSD	3.25	MMBTU/H	CO		2.58	LB/H		OTHER CASE-BY-CASE	0.13	T/YR	12-MONTH ROLLING TOTAL	
PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE	PA	06-05150A	12/17/2013	Emergency Firewater Pump	Diesel	16	Gal/hr	CO		0.09	T/YR	BASED ON 12-MONTH ROLLING TOTAL	N/A	0			
VA-0321	BRUNSWICK COUNTY POWER STATION	VA	52404	3/12/2013	Diesel Fire water pump 376 bhp	diesel	500	h/yr	CO	good combustion practices	0.9	G/KW-HR		BACT-PSD	0			emergency use only, operate according to mfr instructions and procedures, non-resettable hour meter
VA-0325	GREENSVILLE POWER STATION	VA	52525	6/17/2016	DIESEL-FIRED WATER PUMP 376 bph (1)	DIESEL FUEL	0		CO	Good Combustion Practices/Maintenance	2.6	G/HP-H	HR	N/A	0			
VA-0328	C4GT, LLC	VA	52588	4/26/2018	Emergency Fire Water Pump	ULSD	500	HR/YR	CO	good combustion practices and the use of ultra low sulfur diesel (\$15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	2.6	G/HP HR		BACT-PSD	0			
NY-0104	CPV VALLEY ENERGY CENTER	NY	3-335600136/00001	8/1/2013	Fire pump	ULSD	0		CO	Good combustion practice.	0.75	LB/MMBT U	1 H	BACT-PSD	0			
MI-0410	THETFORD GENERATING STATION	MI	191-12	7/25/2013	EU-FPENGINE: Diesel fuel fired emergency backup fire pump	ULSD	315	hp nameplate	CO	Proper combustion design and ultra low sulfur diesel fuel.	2.6	G/HP-H	TEST PROTOCOL WILL SPECIFY AVG. TIME.	BACT-PSD	0			ultra low sulfur diesel fuel (15 pppmw); 100 hours per year operation for maintenance and readiness testing; NSPS IIII and NESHAP ZZZZ.
MI-0441	LBWL--ERICKSON STATION	MI	74-18	12/21/2018	EUFPRICE--A 315 HP diesel fueled emergency engine	Diesel	2.5	MMBTU/H	CO	Good combustion practices.	2.6	G/HP-H	HOURLY	BACT-PSD	0			Cost analysis considered oxidation catalyst for a 1MW emergency engine. The control considered technically feasible was catalytic oxidation; however it was not considered economically feasible.

Table E-26
RACT/BACT/LAER Clearing House Summary for CO Emissions from Firepumps

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
OH-0352	OREGON CLEAN ENERGY CENTER	OH	P0110840	6/18/2013	Emergency fire pump engine	diesel	300	HP	CO	Purchased certified to the standards in NSPS Subpart IIII	1.7	LB/H		BACT-PSD	0.43	T/YR	PER ROLLING 12-MONTHS	Additional limit: 3.5 g CO/kW-h, standard from Subpart IIII If required Method 10.
PA-0286	MOXIE ENERGY LLC/PATRIOT GENERATION PLT	PA	41-00084A	1/31/2013	Fire Pump Engine - 460 BHP	Diesel	0		CO		0.5	G/HP-H		OTHER CASE-BY-CASE	0.51	LB/H		

Table E-27
RACT/BACT/LAER Clearing House Summary for VOC Emissions from Firepumps

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
*IL-0134	CRONUS CHEMICALS	IL	19110020	12/21/2023	Firewater Pump Engine	Diesel	369	hp	VOC		4	G/KW-HR	3-HR AVG	BACT-PSD	100	HR/YR	OPERATIONAL LIMIT	Limit 1 includes NMHC, i.e., NOx + NMHC, consistent with the NSPS, 40 CFR 60 Subpart IIII
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Firewater Pump Engine	Diesel	422	hp	VOC	Compliance with 40 CFR 60 Subpart IIII	1.47	LB/HR		BACT-PSD	0			
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Firewater Pump Engine	Diesel	422	hp	VOC	Compliance with 40 CFR 60 Subpart IIII	1.47	LB/HR		BACT-PSD	0			
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Firewater Pump Engine	Diesel	237	hp	VOC	Compliance with the requirements of 40 CFR 60 Subpart IIII	0.61	LB/HR		BACT-PSD	0			
*LA-0402	DESTREHAN OIL PROCESSING FACILITY	LA	PSD-LA-855	12/13/2023	Emergency diesel firepump engine	Diesel	200	hp	VOC	Compliance with 40 CFR 60 Subpart IIII	0.14	LB/H	HOURLY MAXIMUM	BACT-PSD	0.01	T/YR	ANNUAL MAXIMUM	Compliance with 40 CFR 60 Subpart IIII VOC<=3.00 g/BHP-hr
*NE-0064	NORFOLK CRUSH, LLC	NE	CP22-017	11/21/2022	Emergency Firewater Pump Engine	Diesel	510	hp	VOC		0.62	G/HP-HR	3-HOUR OR TEST METHOD AVERAGE	BACT-PSD	0			Emission standard as required in NSPS Subpart IIII Table 4 for stationary emergency fire pump engines. The standard was calculated using a ratio of 20.6% VOC for the NMHC+NOx emission standard of 3.0 g/hp-hr. This unit is limited to 100 hours of operation for non-emergency use, this is to ensure the engine meets the definition of limited use engine.
OH-0387	INTEL OHIO SITE	OH	P0132323	9/20/2022	Emergency Water Pumps	Diesel	275	hp	VOC	Certified to meet the standards in Table 4 of 40 CFR Part 60, Subpart IIII and good combustion practices	0.7	LB/H		BACT-PSD	0.2	T/YR	PER ROLLING 12 MONTH PERIOD	
AK-0088	LIQUEFACTION PLANT	AK	AQ1539CPT01	7/7/2022	Diesel Fire Pump Engine	Diesel	27.9	Gal/hr	VOC	Oxidation Catalyst; Limited Operation; 40 CFR 60 Subpart IIII	0.19	G/HP-HR		BACT-PSD	500	HRS/YR		VOC emissions from the diesel firewater pump engine EU 11 will not exceed 0.19 g/hp-hr @ 15% O2 (5% of NOx + NMHC value from Table 4 from NSPS Subpart IIII, also equivalent to EPA Tier 3, includes 25% not to exceed factor of safety).
MI-0451	MEC NORTH, LLC	MI	167-17B	6/23/2022	EUFENGINE (North Plant): Fire Pump Engine	Diesel	300	HP	VOC	Good combustion practices.	0.75	LB/H	HOURLY	BACT-PSD	0			An oxidation catalyst is \$39,500/ton for PM10, CO, and VOC together.
MI-0452	MEC SOUTH, LLC	MI	168-17B	6/23/2022	EUFENGINE (South Plant): Fire pump engine	Diesel	300	HP	VOC	Good Combustion Practices	0.75	LB/H	HOURLY	BACT-PSD	0			An oxidation catalyst is \$39,500/ton for PM10, CO, and VOC together.
LA-0391	MAGNOLIA POWER GENERATING STATION UNIT 1	LA	PSD-LA-839	6/3/2022	Emergency Diesel Fired Water Pump Engine	ULSD	355	hp	VOC	Compliance with 40 CFR 60 Subpart IIII, good combustion practices, and the use of ultra-low sulfur diesel fuel.	3	G/HP-HR		BACT-PSD	0			BACT limit is 3.0 g/BHP-hr (NOx + NMHC). Compliance with 40 CFR 60 Subpart IIII (Tier 2 non-road engines) standards, good combustion practices, and the use of ultra-low sulfur diesel fuel.
*WV-0033	MAIDSVILLE	WV	R14-0038	1/5/2022	Fire Water Pump	ULSD	240	bhp	VOC	Good Combustion Practices w/ OxCat. Applicant did not justify why an oxcat is infeasible for an emergency engine	1.59	LB/HR		BACT-PSD	4	G/BKW	NMHC+NOX	Certified Engine
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Emergency Diesel Fire Pump (P06)	Diesel	282	HP	VOC	Operation limited to 500 hours/year and operate and maintain according to the manufacturer's recommendations.	1.1	G/HP-H		BACT-PSD	0			
LA-0364	FG LA COMPLEX	LA	PSD-LA-812	1/6/2020	Emergency Fire Water Pumps	Diesel Fuel	550	hp	VOC	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0			BACT-PSD	0			Engines are limited to 100 hours of non-emergency use.
VA-0332	CHICKAHOMINY POWER LLC	VA	52610-1	6/24/2019	Emergency Fire Water Pump	ULSD	500	HR/YR	VOC	good combustion practices, high efficiency design, and the use of ultra low sulfur diesel (S15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0.11	G/HP-HR		BACT-PSD	0			
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Firewater Pumps	Diesel Fuel	634	KW	VOC	Good combustion and operating practices.	0.44	G/HP-H		BACT-PSD	0			Comply with 40 CFR 60 Subpart IIII and limiting normal operations to 50 hr/yr.
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	MI	19-18	7/16/2018	EUFENGINE: Fire pump engine	Diesel	399	BHP	VOC	State of the art combustion design.	0.13	LB/H	HOURLY	BACT-PSD	0			
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MI	167-17 AND 168-17	6/29/2018	EUFENGINE (South Plant): Fire pump engine	Diesel	300	HP	VOC	Good combustion practices.	0.75	LB/H	HOURLY	BACT-PSD	0			An oxidation catalyst is \$39,500/ton for PM10, CO and VOC together.
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MI	167-17 AND 168-17	6/29/2018	EUFENGINE (North Plant): Fire pump engine	Diesel	300	HP	VOC	Good combustion practices	0.75	LB/H	HOURLY	BACT-PSD	0			An oxidation catalyst is \$39,500/ton for PM10, CO and VOC together.

Table E-27 RACT/BACT/LAER Clearing House Summary for VOC Emissions from Firepumps																		
VA-0328	C4GT, LLC	VA	52588	4/26/2018	Emergency Fire Water Pump	ULSD	500	HR/YR	VOC	good combustion practices and the use of ultra low sulfur diesel (\$15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0			BACT-PSD	0			Non-methane hydrocarbons are accounted for in the NOx+NMHC limit of 3.0 g/hp per hr.
OH-0377	HARRISON POWER	OH	P0122266	4/19/2018	Emergency Fire Pump (P004)	Diesel fuel	320	HP	VOC	Good combustion practices (ULSD) and compliance with 40 CFR Part 60, Subpart IIII	2.12	LB/H	NMHC+NOX. SEE NOTES.	BACT-PSD	0.11	T/YR	NMHC+NOX. SEE NOTES.	All emissions limits are for Non-methane hydrocarbon (NMHC) + NOX emissions. 0.11 t/yr per rolling, 12-month period. NSPS: Non-methane hydrocarbon (NMHC) + NOX emissions shall not exceed 4.0 g/kW-hr (3.0 g/hp-hr).
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	OH	P0122829	11/7/2017	Emergency Diesel Fire Pump Engine (P002)	Diesel fuel	700	HP	VOC	Good combustion design	4.97	LB/H	NMHC+NOX. SEE NOTES.	BACT-PSD	0.25	T/YR	NMHC+NOX. SEE NOTES.	Nonmethane hydrocarbons plus nitrogen oxides (NMHC+NOx) emissions shall not exceed 4.0 g/kW-hour, 4.97 pounds per hour and 0.25 ton per rolling, 12-month period. NSPS: Non-methane hydrocarbon (NMHC) + NOX emissions shall not exceed 4.0 g/kW-hr (3.0 g/hp-hr).
OH-0374	GUERNSEY POWER STATION LLC	OH	P0122594	10/23/2017	Emergency Fire Pump (P006)	Diesel fuel	410	HP	VOC	Certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII. Good combustion practices per the manufacturer's operating manual.	2.7	LB/H	NMHC+NOX. SEE NOTES.	BACT-PSD	0.14	T/YR	NMHC+NOX. SEE NOTES.	Nonmethane hydrocarbons plus nitrogen oxides (NMHC+NOx) emissions shall not exceed 4.0 g/kW-hour (3.0 g/bhp-h), 2.70 pounds per hour and 0.14 ton per rolling, 12-month period.
OH-0372	OREGON ENERGY CENTER	OH	P0121049	9/27/2017	Emergency fire pump engine (P004)	Diesel fuel	300	HP	VOC	State-of-the-art combustion design	0.24	LB/H		BACT-PSD	0.06	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit is 0.5 g/kW-hr (0.37 g/hp-hr). NSPS: Non-methane hydrocarbon (NMHC) + NOX emissions shall not exceed 4.0 g/kW-hr (3.0 g/hp-hr).
OH-0370	TRUMBULL ENERGY CENTER	OH	P0122331	9/7/2017	Emergency fire pump engine (P004)	Diesel fuel	300	HP	VOC	State-of-the-art combustion design	0.24	LB/H		BACT-PSD	0.06	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 0.5 g/kW-hr. NSPS: Non-methane hydrocarbon (NMHC) + NOx emissions shall not exceed 4.0 g/kW-hr.
MI-0423	INDECK NILES, LLC	MI	75-16	1/4/2017	EUFENGINE (Emergency engine--diesel fire pump)	Diesel	1.66	MMBTU/H	VOC	Good combustion practices	0.64	LB/H	TEST PROTOCOL WILL SPECIFY AVG TIME	BACT-PSD	0			On average, an oxidation catalyst is greater than \$308,000/ton for CO and VOC together.
MI-0424	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13C	12/5/2016	EUFENGINE (Emergency engine--diesel fire pump)	diesel	500	H/YR	VOC	Good combustion practices	0.47	LB/H	TEST PROTOCOL WILL SPECIFY AVG TIME	BACT-PSD	0			An oxidation catalyst is greater than \$501,000/ton for CO and VOC together.
OH-0367	SOUTH FIELD ENERGY LLC	OH	P0119495	9/23/2016	Emergency fire pump engine (P004)	Diesel fuel	311	HP	VOC	State-of-the-art combustion design	0.25	LB/H		BACT-PSD	0.06	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 0.5 g/kW-hr. Non-methane hydrocarbon (NMHC) + NOx emissions shall not exceed 4.0 g/kW-hr.
LA-0313	ST. CHARLES POWER STATION	LA	PSD-LA-804	8/31/2016	SCPS Emergency Diesel Firewater Pump 1	Diesel	282	HP	VOC	Good combustion practices	1.87	LB/H	HOURLY MAXIMUM	BACT-PSD	0.47	T/YR	ANNUAL MAXIMUM	BACT Limit = 3.0 G/BHP-HR (NMHC + NOx)
OH-0366	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	OH	P0117655	8/25/2015	Emergency fire pump engine (P004)	Diesel fuel	140	HP	VOC	State-of-the-art combustion design	0.11	LB/H		BACT-PSD	0.03	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 0.50 g/kW-hr. NSPS: Non-methane hydrocarbon (NMHC) + NOx emissions shall not exceed 4.0 g/kW-hr.
WV-0025	MOUNDSVILLE COMBINED CYCLE POWER PLANT	WV	R14-0030	11/21/2014	Fire Pump Engine	Diesel	251	HP	VOC		0.17	LB/H		BACT-PSD	0			
MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13	12/4/2013	Emergency Engine --Diesel Fire Pump (EUFENGINE)	Diesel	165	HP	VOC	Good combustion practices	0.001	LB/H	TEST PROTOCOL	BACT-PSD	0			An oxidation catalyst is greater than \$619,000 for CO and VOC together.
OH-0360	CARROLL COUNTY ENERGY	OH	P0113762	11/5/2013	Emergency fire pump engine (P004)	diesel	400	HP	VOC	Purchased certified to the standards in NSPS Subpart IIII	0.325	LB/H		BACT-PSD	0.08	T/YR	PER ROLLING 12 MONTH PERIOD	Additional limit: 0.50 g VOC/kW-h; and 4.0 g NMHC + NOx/kW-h Subpart IIII standard.
MI-0410	THETFORD GENERATING STATION	MI	191-12	7/25/2013	EU-FPENGINE: Diesel fuel fired emergency backup fire pump	ULSD	315	nameplate	VOC	Proper combustion design and ultra low sulfur diesel fuel.	0			BACT-PSD	0			Ultra low sulfur diesel fuel (15 ppmw); 100 hours per year operation for maintenance and readiness testing. Both CO and VOC are products of incomplete combustion and are controlled using efficient combustion methods. The limitation on CO is an appropriate surrogate for VOC emissions. VOC also included in NMHC which is limited in combination with NOx.
OH-0352	OREGON CLEAN ENERGY CENTER	OH	P0110840	6/18/2013	Emergency fire pump engine	diesel	300	HP	VOC	Purchased certified to the standards in NSPS Subpart IIII	0.25	LB/H		BACT-PSD	0.06	T/YR	PER ROLLING 12- MONTHS	Additional limit: 0.50 g VOC/kW-h; and 4.0 g NMHC + NOx/kW-h Subpart IIII standard. Method 25A if required

Table E-28
RACT/BACT/LAER Clearing House Summary for SO2 Emissions from Firepumps

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
*IN-0365	MAPLE CREEK ENERGY LLC	IN	T153-45909-00056	6/19/2023	Emergency fire pump	ULSD	420	brake hp	SO2		0.0016	LB PER MMBTU		BACT-PSD	0			The sulfur content of diesel fuel burned in the emergency fire pump shall not exceed 0.0015%.
FL-0356	OKEECHOBEE CLEAN ENERGY CENTER	FL	0930117-001-AC	3/9/2016	One 422-hp emergency fire pump engine	ULSD	0		SO2	Use of ULSD	0.0015	% S IN ULSD		BACT-PSD	0			
FL-0363	DANIA BEACH ENERGY CENTER	FL	0110037-017-AC	12/4/2017	Emergency Fire Pump Engine (422 hp)	ULSD	0		SO2	Clean fuel	15	PPM S IN FUEL		BACT-PSD	0			ULSD fuel
FL-0367	SHADY HILLS COMBINED CYCLE FACILITY	FL	1010524-001-AC	7/27/2018	Emergency Fire Pump Engine (347 HP)	ULSD	8700	gal/year	SO2	Clean fuel	15	PPM S IN FUEL		BACT-PSD	0			ULSD fuel
IL-0133	LINCOLN LAND ENERGY CENTER	IL	18040008	7/29/2022	Fire Water Pump Engine	ULSD	320	horsepower	SO2	Use of ultra-low sulfur diesel, with a sulfur content < 15 ppm sulfur.	0			BACT-PSD	0			Use of ultra-low sulfur diesel represents BACT.
AK-0088	LIQUEFACTION PLANT	AK	AQ1539CPT01	7/7/2022	Diesel Fire Pump Engine	ULSD	27.9	Gal/hr	SO2	Good Combustion Practices; ULSD; Limited Operation;	15	PPMW SULFUR IN FUEL		BACT-PSD	500	HRS/YR		
MI-0423	INDECK NILES, LLC	MI	75-16	1/4/2017	EUFENGINE (Emergency engine--diesel fire pump)	ULSD	1.66	MMBTU/H	SO2	Good combustion practices and meeting NSPS Subpart IIII requirements.	15	PPM	FUEL SUP. CERT. RECORDS OR SAMPLE TEST	BACT-PSD	0			The Avg. Time/Conditions for the emission limit above is fuel supplier certification records or fuel sample test data, for each delivery of diesel fuel oil. The diesel material limit is 15 ppm of sulfur (0.0015 percent) by weight.
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MI	167-17 AND 168-17	6/29/2018	EUFENGINE (South Plant): Fire pump engine	ULSD	300	HP	SO2	Good combustion practices and meeting NSPS Subpart IIII requirements.	15	PPM	FUEL SUPPLIER RECORDS OR FUEL SAMPL DATA	BACT-PSD	0			The diesel material limit is 15 ppm of sulfur (0.0015 percent) by weight based on fuel supplier certification records or fuel sample test data, for each delivery of diesel fuel oil.
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MI	167-17 AND 168-17	6/29/2018	EUFENGINE (North Plant): Fire pump engine	ULSD	300	HP	SO2	Good combustion practices and meeting NSPS Subpart IIII requirements.	15	PPM	FUEL SUPPLIER RECORDS	BACT-PSD	0			The diesel material limit is 15 ppm of sulfur (0.0015 percent) by weight.
MI-0451	MEC NORTH, LLC	MI	167-17B	6/23/2022	EUFENGINE (North Plant): Fire Pump Engine	ULSD	300	HP	SO2	Good combustion practices and meeting NSPS Subpart IIII requirements.	15	PPM	FUEL SUPPLIER RECORDS OR SAMPLE TEST	BACT-PSD	0			Emission Limit 1 above = 15 ppm (0.0015 percent) by weight based on fuel supplier certification records or fuel sample test data, for each delivery of diesel fuel oil. The applicable requirements are BACT, NAAQS PSD increment and NSPS IIII.
MI-0452	MEC SOUTH, LLC	MI	168-17B	6/23/2022	EUFENGINE (South Plant): Fire pump engine	ULSD	300	HP	SO2	Good Combustion Practices and meeting NSPS Subpart IIII requirements	15	PPM	FUEL SUPPLIER RECORDS OR SAMPLE TEST	BACT-PSD	0			Emission limit 1 above is 15 ppm (0.0015 percent) by weight based on fuel supplier certification records or fuel sample test data, for each delivery of diesel fuel oil.
FL-0371	SHADY HILLS COMBINED CYCLE FACILITY	FL	1010524-003-AC (PSD-FL-444A)	6/7/2021	Emergency Fire Pump Engine (347 HP)	ULSD	2.46	MMBTu/hour	SO2		15	PPM S IN FUEL		BACT-PSD	0			
NJ-0081	PSEG FOSSIL LLC SEWAREN GENERATING STATION	NJ	18068 - (BOP120002)	3/7/2014	Emergency diesel fire pump	ULSD	0		SO2	Use of Ultra low sulfur fuel oil	0.002	LB/MMBTU		BACT-PSD	0			This project not subject to BACT or LAER for SO2.
NY-0104	CPV VALLEY ENERGY CENTER	NY	3-335600136/00001	8/1/2013	Fire pump	ULSD	0		SO2	Ultra low sulfur diesel with maximum sulfur content 0.0015 percent.	0.0014	LB/MMBTU	1 H	BACT-PSD	0			
OH-0367	SOUTH FIELD ENERGY LLC	OH	P0119495	9/23/2016	Emergency fire pump engine (P004)	ULSD	311	HP	SO2	Ultra low sulfur diesel fuel	0.004	LB/H		BACT-PSD	1	X10-3 T/YR	PER ROLLING 12 MONTH PERIOD	

Table E-28
RACT/BACT/LAER Clearing House Summary for SO2 Emissions from Firepumps

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
OH-0370	TRUMBULL ENERGY CENTER	OH	P0122331	9/7/2017	Emergency fire pump engine (P004)	ULSD	300	HP	SO2	Ultra low sulfur diesel fuel	3.2	X10-3 LB/H		BACT-PSD	1	X10-3 T/YR	PER ROLLING 12 MONTH PERIOD	
OH-0372	OREGON ENERGY CENTER	OH	P0121049	9/27/2017	Emergency fire pump engine (P004)	ULSD	300	HP	SO2	Ultra low sulfur diesel fuel	3.2	X10-3 LB/H		BACT-PSD	1	X10-3 T/YR	PER ROLLING 12 MONTH PERIOD	
OH-0374	GUERNSEY POWER STATION LLC	OH	P0122594	10/23/2017	Emergency Fire Pump (P006)	Diesel fuel	410	HP	SO2	Certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII. Good combustion practices per the manufacturer's operating manual.	0.0015	LB/MMBTU		BACT-PSD	0.0053	LB/H		0.00027 T/YR per rolling, 12-month period
OH-0377	HARRISON POWER	OH	P0122266	4/19/2018	Emergency Fire Pump (P004)	ULSD	320	HP	SO2	ultra-low sulfur diesel (ULSD) fuel with a sulfur content of less than 15 ppm (0.0015 percent by weight)	0.0015	LB/MMBTU		BACT-PSD	0.004	LB/H		0.0002 t/yr per rolling, 12-month period.
LA-0364	FG LA COMPLEX	LA	PSD-LA-812	1/6/2020	Emergency Fire Water Pumps	Diesel Fuel	550	hp	SO2	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or	0			BACT-PSD	0			Engines are limited to 100 hours of non-emergency use.
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Firewater Pumps	ULSD	634	KW	SO2	Ultra-Low Sulfur Diesel Fuel with Sulfur Content of 15 ppmv.	0.04	LB/GAL		BACT-PSD	0			Comply with 40 CFR 60 Subpart IIII and limiting normal operations to 50 hr/yr.
*MI-0445	INDECK NILES, LLC	MI	75-16B	11/26/2019	EUFENGINE (Emergency engine-diesel fire pump	ULSD	1.66	MMBTU/H	SO2	Good Combustion Practices and meeting NSPS Subpart IIII requirements	15	PPM	FUEL SUPPLIER CERT. RECORDS OR TEST DATA	BACT-PSD	0			The emission limit above is 15 ppm using fuel supplier certification records or fuel sample test data, for each delivery of diesel fuel oil. The diesel material limit is 15 ppm of sulfur (0.0015 percent) by weight.
MD-0042	WILDCAT POINT GENERATION FACILITY	MD	CPCN CASE NO. 9327	4/8/2014	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	ULSD	477	HP	SO2	USE OF ULTRA-LOW DIESEL SULFUR FUEL, LIMITED HOURS OF OPERATION AND DESIGNED TO MEET SUBPART IIII LIMITS	0.0049	G/B-HP-H	3-HOUR BLOCK AVERAGE	BACT-PSD	0			
VA-0328	C4GT, LLC	VA	52588	4/26/2018	Emergency Fire Water Pump	ULSD	500	HR/YR	SO2	good combustion practices and the use of ultra low sulfur diesel (\$15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0			BACT-PSD	0			
VA-0332	CHICKAHOMINY POWER LLC	VA	52610-1	6/24/2019	Emergency Fire Water Pump	ULSD	500	HR/YR	SO2	: good combustion practices, high efficiency design, and the use of ultra low sulfur diesel (\$15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0.0015	LB/MMBTU		BACT-PSD	0			Certify fuel sulfur content

Table E-29
RACT/BACT/LAER Clearing House Summary for PM Emissions from Firepumps

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
*IL-0134	CRONUS CHEMICALS	IL	19110020	12/21/2023	Firewater Pump Engine	Diesel	369	hp	TPM10		0.2	G/KW-HR	3-HR AVG	BACT-PSD	100	HR/YR	OPERATIONAL LIMIT	Limit 1 is consistent with NSPS IIII. NSPS PM limit serves as BACT for PM10/PM2.5
*IL-0134	CRONUS CHEMICALS	IL	19110020	12/21/2023	Firewater Pump Engine	Diesel	369	hp	TPM2.5		0.2	G/KW-HR	3-HR AVG	BACT-PSD	100	HR/YR	OPERATIONAL LIMIT	Limit 1 is consistent with NSPS IIII. NSPS PM limit serves as BACT for PM10/PM2.5
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Firewater Pump Engine	Diesel	422	hp	TPM10	Compliance with 40 CFR 60 Subpart IIII	0.2	LB/HR		BACT-PSD	0			
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Firewater Pump Engine	Diesel	422	hp	TPM2.5	Compliance with 40 CFR 60 Subpart IIII	0.2	LB/HR		BACT-PSD	0			
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Firewater Pump Engine	Diesel	422	hp	TPM10	Compliance with 40 CFR 60 Subpart IIII	0.2	LB/HR		BACT-PSD	0			
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Firewater Pump Engine	Diesel	422	hp	TPM2.5	Compliance with 40 CFR 60 Subpart IIII	0.2	LB/HR		BACT-PSD	0			
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Firewater Pump Engine	Diesel	237	hp	TPM10	Compliance with the requirements of 40 CFR 60 Subpart IIII	0.06	LB/HR		BACT-PSD	0			
*LA-0401	KOCH METHANOL (KME) FACILITY	LA	PSD-LA-851	12/20/2023	Firewater Pump Engine	Diesel	237	hp	TPM2.5	Compliance with the requirements of 40 CFR 60 Subpart IIII	0.06	LB/HR		BACT-PSD	0			
*LA-0402	DESTREHAN OIL PROCESSING FACILITY	LA	PSD-LA-855	12/13/2023	Emergency diesel firepump engine	Diesel	200	hp	TPM10	Compliance with 40 CFR 60 Subpart IIII	0.14	LB/H	HOURLY MAXIMUM	BACT-PSD	0.01	T/YR	ANNUAL MAXIMUM	Compliance with 40 CFR 60 Subpart IIII PM<=0.15 g/BHP-hr
*LA-0402	DESTREHAN OIL PROCESSING FACILITY	LA	PSD-LA-855	12/13/2023	Emergency diesel firepump engine	Diesel	200	hp	TPM2.5	Compliance with 40 CFR 60 Subpart IIII	0.14	LB/H	HOURLY MAXIMUM	BACT-PSD	0.01	T/YR	ANNUAL MAXIMUM	Compliance with 40 CFR 60 Subpart IIII PM<=0.15 g/BHP-hr
*IN-0365	MAPLE CREEK ENERGY LLC	IN	T153-45909-00056	6/19/2023	Emergency fire pump	Diesel	420	brake hp	TPM		0.2	G/KW-HR		BACT-PSD	0			
*IN-0365	MAPLE CREEK ENERGY LLC	IN	T153-45909-00056	6/19/2023	Emergency fire pump	Diesel	420	brake hp	TPM10		0.2	G/KW-HR)		BACT-PSD	0			
*IN-0365	MAPLE CREEK ENERGY LLC	IN	T153-45909-00056	6/19/2023	Emergency fire pump	Diesel	420	brake hp	TPM2.5		0.2	G/KW-HR		BACT-PSD	0			
MI-0454	LBWL-ERICKSON STATION	MI	74-18D	12/20/2022	EUFPRICE--A 315 HP diesel-fueled emergency engine	ULSD	2.5	MMBTU/H	TPM10	Ultra low sulfur diesel fuel and good combustion practices.	0.69	LB/H	HOURLY	BACT-PSD	0			The control considered technically feasible was burning ultra-low sulfur diesel fuel.
MI-0454	LBWL-ERICKSON STATION	MI	74-18D	12/20/2022	EUFPRICE--A 315 HP diesel-fueled emergency engine	ULSD	2.5	MMBTU/H	TPM2.5	Ultra low sulfur diesel fuel and good combustion practices..	0.69	LB/H	HOURLY	BACT-PSD	0			The control considered technically feasible was burning ultra-low sulfur diesel fuel.
*NE-0064	NORFOLK CRUSH, LLC	NE	CP22-017	11/21/2022	Emergency Firewater Pump Engine	Diesel	510	hp	TPM		0.15	G/HP-HR	3-HOUR OR TEST METHOD AVERAGE	BACT-PSD	0			Emission standard as required in NSPS Subpart IIII Table 4 for stationary emergency fire pump engines. This unit is limited to 100 hours of operation for non-emergency use, this is to ensure the engine meets the definition of limited use engine. Assumes PM=PM10=PM2.5
OH-0387	INTEL OHIO SITE	OH	P0132323	9/20/2022	Emergency Water Pumps	Diesel	275	hp	TPM10	Certified to meet the standards in Table 4 of 40 CFR Part 60, Subpart IIII and good combustion practices	0.2	G/KW-H		BACT-PSD	0.6	LB/H	SEE NOTES	0.2 tons per rolling, 12-month period
OH-0387	INTEL OHIO SITE	OH	P0132323	9/20/2022	Emergency Water Pumps	Diesel	275	hp	TPM10	Certified to meet the standards in Table 4 of 40 CFR Part 60, Subpart IIII and good combustion practices	0.6	LB/H		BACT-PSD	0.2	T/YR	PER ROLLING 12 MONTH PERIOD	
OH-0387	INTEL OHIO SITE	OH	P0132323	9/20/2022	Emergency Water Pumps	Diesel	275	hp	TPM2.5	Certified to meet the standards in Table 4 of 40 CFR Part 60, Subpart IIII and good combustion practices	0.6	LB/H		BACT-PSD	0.2	T/YR	PER ROLLING 12 MONTH PERIOD	
IL-0133	LINCOLN LAND ENERGY CENTER	IL	18040008	7/29/2022	Fire Water Pump Engine	ULSD	320	horsepower	TPM		0.2	GRAMS	KILOWATT-HOUR	BACT-PSD	0			Emission Limit 1 includes PM10 and PM2.5, i.e., PM/PM10/PM2.5.

Table E-29
RACT/BACT/LAER Clearing House Summary for PM Emissions from Firepumps

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
AK-0088	LIQUEFACTION PLANT	AK	AQ1539CPT01	7/7/2022	Diesel Fire Pump Engine	Diesel	27.9	Gal/hr	TPM	Good Combustion Practices; Limited Operation; 40 CFR 60 Subpart IIII	0.19	G/HP-HR		BACT-PSD	10	% OPACITY	6 CONSECUTIVE MINUTES	Particulate emissions from the diesel firewater pump engine EU 11 will not exceed 0.19 g/hp-hr @ 15% O2 (Table 4 of NSPS Subpart IIII, also equivalent to EPA Tier 3, includes 25% not to exceed factor of safety).
AK-0088	LIQUEFACTION PLANT	AK	AQ1539CPT01	7/7/2022	Diesel Fire Pump Engine	Diesel	27.9	Gal/hr	TPM10	Good Combustion Practices; Limited Operation; 40 CFR 60 Subpart IIII	0.19	G/HP-HR		BACT-PSD	10	% OPACITY	6 CONSECUTIVE MINUTES	Particulate emissions from the diesel firewater pump engine EU 11 will not exceed 0.19 g/hp-hr @ 15% O2 (Table 4 of NSPS Subpart IIII, also equivalent to EPA Tier 3, includes 25% not to exceed factor of safety).
AK-0088	LIQUEFACTION PLANT	AK	AQ1539CPT01	7/7/2022	Diesel Fire Pump Engine	Diesel	27.9	Gal/hr	TPM2.5	Good Combustion Practices; Limited Operation; 40 CFR 60 Subpart IIII	0.19	G/HP-HR		BACT-PSD	10	% OPACITY	6 CONSECUTIVE MINUTES	Particulate emissions from the diesel firewater pump engine EU 11 will not exceed 0.19 g/hp-hr @ 15% O2 (Table 4 of NSPS Subpart IIII, also equivalent to EPA Tier 3, includes 25% not to exceed factor of safety).
MI-0451	MEC NORTH, LLC	MI	167-17B	6/23/2022	EUPENGINE (North Plant): Fire Pump Engine	Diesel	300	HP	TPM2.5	Diesel particulate filter, good combustion practices and meeting NSPS Subpart IIII requirements.	0.66	LB/H	HOURLY	BACT-PSD	0			
MI-0451	MEC NORTH, LLC	MI	167-17B	6/23/2022	EUPENGINE (North Plant): Fire Pump Engine	Diesel	300	HP	FPM	Diesel particulate filter, good combustion practices and meeting NSPS Subpart IIII requirements.	0.15	G/B-HP-H	HOURLY	BACT-PSD	0			
MI-0451	MEC NORTH, LLC	MI	167-17B	6/23/2022	EUPENGINE (North Plant): Fire Pump Engine	Diesel	300	HP	TPM10	Diesel particulate filter, good combustion practices and meeting NSPS Subpart IIII requirements.	0.66	LB/H	HOURLY	BACT-PSD	0			An oxidation catalyst is \$39,500/ton for PM10, CO, and VOC together.
MI-0452	MEC SOUTH, LLC	MI	168-17B	6/23/2022	EUPENGINE (South Plant): Fire pump engine	Diesel	300	HP	FPM	Diesel particulate filter, Good Combustion Practices and meeting NSPS Subpart IIII requirements	0.15	G/B-HP-H	HOURLY	BACT-PSD	0			
MI-0452	MEC SOUTH, LLC	MI	168-17B	6/23/2022	EUPENGINE (South Plant): Fire pump engine	Diesel	300	HP	TPM10	Diesel particulate filter, Good Combustion Practices and meeting NSPS Subpart IIII requirements	0.66	LB/H	HOURLY	BACT-PSD	0			An oxidation catalyst is \$39,500/ton for PM10, CO, and VOC together.
MI-0452	MEC SOUTH, LLC	MI	168-17B	6/23/2022	EUPENGINE (South Plant): Fire pump engine	Diesel	300	HP	TPM2.5	Diesel particulate filter, Good Combustion Practices and meeting NSPS Subpart IIII requirements	0.66	LB/H	HOURLY	BACT-PSD	0			
LA-0391	MAGNOLIA POWER GENERATING STATION UNIT 1	LA	PSD-LA-839	6/3/2022	Emergency Diesel Fired Water Pump Engine	ULSD	355	hp	TPM10	Compliance with 40 CFR 60 Subpart IIII standards, good combustion practices, and the use of ultra-low sulfur diesel fuel.	0.15	G/HP-HR		BACT-PSD	0			BACT limit is 0.15 g/BHP-hr. Compliance with 40 CFR 60 Subpart IIII (Tier 2 non-road engines) standards, good combustion practices, and the use of ultra-low sulfur diesel fuel.
LA-0391	MAGNOLIA POWER GENERATING STATION UNIT 1	LA	PSD-LA-839	6/3/2022	Emergency Diesel Fired Water Pump Engine	ULSD	355	hp	TPM2.5	Compliance with 40 CFR 60 Subpart IIII, good combustion practices, and the use of ultra-low sulfur diesel fuel.	0.15	G/HP-HR		BACT-PSD	0			BACT limit is 0.15 g/BHP-hr. Compliance with 40 CFR 60 Subpart IIII (Tier 2 non-road engines) standards, good combustion practices, and the use of ultra-low sulfur diesel fuel.
*WV-0033	MAIDSVILLE	WV	R14-0038	1/5/2022	Fire Water Pump	ULSD	240	bhp	TPM	Clean Fuels & Good Combustion Practices	0.08	LB/HR		BACT-PSD	0			Certified Engine. Assumed to be PM2.5 or less including condensables.

Table E-29
RACT/BACT/LAER Clearing House Summary for PM Emissions from Firepumps

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
FL-0371	SHADY HILLS COMBINED CYCLE FACILITY	FL	1010524-003-AC (PSD-FL-444A)	6/7/2021	Emergency Fire Pump Engine (347 HP)	ULSD	2.46	MMBtu/hour	TPM		0.2	G/KW-HOUR		BACT-PSD	0			
MI-0447	LBWL--ERICKSON STATION	MI	74-18A	1/7/2021	EUFPRICE--A 315 HP diesel fueled emergency engine	ULSD	2.5	MMBTU/H	TPM10	Ultra low sulfur diesel fuel and good combustion practices	0.12	LB/H	HOURLY	BACT-PSD	0			The control considered technically feasible was burning ultra-low sulfur diesel fuel.
MI-0447	LBWL--ERICKSON STATION	MI	74-18A	1/7/2021	EUFPRICE--A 315 HP diesel fueled emergency engine	ULSD	2.5	MMBTU/H	TPM2.5	Ultra low sulfur diesel fuel and good combustion practices.	0.12	LB/H	HOURLY	BACT-PSD	0			The control considered technically feasible was burning ultra low sulfur diesel fuel.
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Emergency Diesel Fire Pump (P06)	ULSD	282	HP	TPM	Operation limited to 500 hours/year, sulfur content of diesel fuel oil fired may not exceed 15 ppm, and shall be operated and maintained according to the manufacturer's recommendations.	0.15	G/HP-H		BACT-PSD	0			
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Emergency Diesel Fire Pump (P06)	ULSD	282	HP	TPM10	Operation limited to 500 hours/year, sulfur content of diesel fuel oil fired may not exceed 15 ppm, and operate and maintain according to the manufacturer's recommendations.	0.15	G/HP-H		BACT-PSD	0			
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Emergency Diesel Fire Pump (P06)	ULSD	282	HP	TPM2.5	Operation limited to 500 hours/year, sulfur content of diesel fuel oil fired may not exceed 15 ppm, and shall be operated and maintained according to the manufacturer's recommendations.	0.15	G/HP-H		BACT-PSD	0			
LA-0364	FG LA COMPLEX	LA	PSD-LA-812	1/6/2020	Emergency Fire Water Pumps	Diesel Fuel	550	hp	TPM10	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0			BACT-PSD	0			Engines are limited to 100 hours of non-emergency use.
LA-0364	FG LA COMPLEX	LA	PSD-LA-812	1/6/2020	Emergency Fire Water Pumps	Diesel Fuel	550	hp	TPM2.5	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0			BACT-PSD	0			Engines are limited to 100 hours of non-emergency use.
*MI-0445	INDECK NILES, LLC	MI	75-16B	11/26/2019	EUFENGINE (Emergency engine-diesel fire pump	diesel fuel	1.66	MMBTU/H	FPM	Good Combustion Practices and meeting NSPS Subpart IIII requirements	0.15	G/BHP-H	HOURLY	BACT-PSD	0			
*MI-0445	INDECK NILES, LLC	MI	75-16B	11/26/2019	EUFENGINE (Emergency engine-diesel fire pump	diesel fuel	1.66	MMBTU/H	TPM10	Good combustion practices	0.57	LB/H	HOURLY	BACT-PSD	0			
*MI-0445	INDECK NILES, LLC	MI	75-16B	11/26/2019	EUFENGINE (Emergency engine-diesel fire pump	diesel fuel	1.66	MMBTU/H	TPM2.5	Good combustion practices	0.57	LB/H	HOURLY	BACT-PSD	0			
VA-0332	CHICKAHOMINY POWER LLC	VA	52610-1	6/24/2019	Emergency Fire Water Pump	ULSD	500	HR/YR	TPM2.5	good combustion practices, high efficiency design, and the use of ultra low sulfur diesel (\$15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0.15	G/HP-HR		BACT-PSD	0			
VA-0332	CHICKAHOMINY POWER LLC	VA	52610-1	6/24/2019	Emergency Fire Water Pump	ULSD	500	HR/YR	TPM10	good combustion practices, high efficiency design, and the use of ultra low sulfur diesel (\$15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0.15	G/HP-HR		BACT-PSD	0			

Table E-29
RACT/BACT/LAER Clearing House Summary for PM Emissions from Firepumps

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
VA-0332	CHICKAHOMINY POWER LLC	VA	52610-1	6/24/2019	Emergency Fire Water Pump	ULSD	500	HR/YR	FPM	good combustion practices, high efficiency design, and the use of ultra low sulfur diesel (\$15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0.15	G/HP-HR		BACT-PSD	0			
IL-0130	JACKSON ENERGY CENTER	IL	17040013	12/31/2018	Firewater Pump Engine	ULSD	420	horsepower	TPM		0.2	G/KW-HR		BACT-PSD	0			NSPS Subpart IIII emission limit of 0.20 g/kW-hr is BACT. This limit applies to PM/PM10/PM2.5
MI-0441	LBWL--ERICKSON STATION	MI	74-18	12/21/2018	EUFPRICE--A 315 HP diesel fueled emergency engine	ULSD	2.5	MMBTU/H	TPM10	Ultra low sulfur diesel fuel and good combustion practices.	0.12	LB/H	HOURLY	BACT-PSD	0			The control considered technically feasible was burning ultra-low sulfur diesel fuel.
MI-0441	LBWL--ERICKSON STATION	MI	74-18	12/21/2018	EUFPRICE--A 315 HP diesel fueled emergency engine	ULSD	2.5	MMBTU/H	TPM2.5	Ultra low sulfur diesel fuel and good combustion practices.	0.12	LB/H	HOURLY	BACT-PSD	0			The control considered technically feasible was burning ultra-low sulfur diesel fuel.
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Firewater Pumps	Diesel Fuel	634	kW	TPM10	Good combustion and operating practices.	0.3	G/HP-H		BACT-PSD	0			Comply with 40 CFR 60 Subpart IIII and limiting normal operations to 50 hr/yr.
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Firewater Pumps	Diesel Fuel	634	kW	TPM2.5	Good combustion and operating practices.	0.3	G/HP-H		BACT-PSD	0			Comply with 40 CFR 60 Subpart IIII and limiting normal operations to 50 hr/yr.
IL-0129	CPV THREE RIVERS ENERGY CENTER	IL	16060032	7/30/2018	Firewater Pump Engine	ULSD	0		TPM		0			BACT-PSD	0			In the issued permit, TPM addresses PM, PM10 and PM2.5 Limits of the NSPS, 40 CFR 60 Subpart IIII, are BACT for PM. For PM: 0.20 g/kW-hr
FL-0367	SHADY HILLS COMBINED CYCLE FACILITY	FL	1010524-001-AC	7/27/2018	Emergency Fire Pump Engine (347 HP)	ULSD	8700	gal/year	FPM	Operate and maintain the engine according to the manufacturer's written instructions	0.2	G/KW-HOUR		BACT-PSD	0			Certified engine, no testing required
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	MI	19-18	7/16/2018	EUFENGINE: Fire pump engine	Diesel	399	BHP	TPM2.5	State of the art combustion design.	0.13	LB/H	HOURLY	BACT-PSD	0			
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	MI	19-18	7/16/2018	EUFENGINE: Fire pump engine	Diesel	399	BHP	FPM	State of the art combustion design	0.2	G/KW-H	HOURLY	BACT-PSD	0			
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	MI	19-18	7/16/2018	EUFENGINE: Fire pump engine	Diesel	399	BHP	TPM10	State of the art combustion design.	0.13	LB/H	HOURLY	BACT-PSD	0			
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MI	167-17 AND 168-17	6/29/2018	EUFENGINE (South Plant): Fire pump engine	Diesel	300	HP	FPM	Diesel particulate filter, good combustion practices and meeting NSPS Subpart IIII requirements.	0.15	G/BHP-H	HOURLY	BACT-PSD	0			
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MI	167-17 AND 168-17	6/29/2018	EUFENGINE (South Plant): Fire pump engine	Diesel	300	HP	TPM10	Diesel particulate filter, good combustion practices and meeting NSPS Subpart IIII requirements.	0.66	LB/H	HOURLY	BACT-PSD	0			An oxidation catalyst is \$39,500/ton for PM10, CO and VOC together.
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MI	167-17 AND 168-17	6/29/2018	EUFENGINE (South Plant): Fire pump engine	Diesel	300	HP	TPM2.5	Diesel particulate filter, good combustion practices and meeting NSPS Subpart IIII requirements.	0.66	LB/H	HOURLY	BACT-PSD	0			
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MI	167-17 AND 168-17	6/29/2018	EUFENGINE (North Plant): Fire pump engine	Diesel	300	HP	FPM	Diesel particulate filter, good combustion practices and meeting NSPS Subpart IIII requirements.	0.15	G/BHP-H	HOURLY	BACT-PSD	0			
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MI	167-17 AND 168-17	6/29/2018	EUFENGINE (North Plant): Fire pump engine	Diesel	300	HP	TPM10	Diesel particulate filter, good combustion practices and meeting NSPS Subpart IIII requirements.	0.66	LB/H	HOURLY	BACT-PSD	0			An oxidation catalyst is \$39,500/ton for PM10, CO and VOC together.
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MI	167-17 AND 168-17	6/29/2018	EUFENGINE (North Plant): Fire pump engine	Diesel	300	HP	TPM2.5	Diesel particulate filter, good combustion practices and meeting NSPS Subpart IIII requirements.	0.66	LB/H	HOURLY	BACT-PSD	0			

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RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
VA-0328	C4GT, LLC	VA	52588	4/26/2018	Emergency Fire Water Pump	ULSD	500	HR/YR	FPM	good combustion practices and the use of ultra low sulfur diesel (\$15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	15	G/HP/HR		BACT-PSD	0			
VA-0328	C4GT, LLC	VA	52588	4/26/2018	Emergency Fire Water Pump	ULSD	500	HR/YR	TPM10	good combustion practices and the use of ultra low sulfur diesel (\$15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0.15	G/HP HR		BACT-PSD	0			
VA-0328	C4GT, LLC	VA	52588	4/26/2018	Emergency Fire Water Pump	ULSD	500	HR/YR	TPM2.5	good combustion practices and the use of ultra low sulfur diesel (\$15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0.15	G/HP HR		BACT-PSD	0			
OH-0377	HARRISON POWER	OH	P0122266	4/19/2018	Emergency Fire Pump (P004)	ULSD	320	HP	TPM	Good combustion practices (ULSD) and compliance with 40 CFR Part 60, Subpart IIII	0.11	LB/H		BACT-PSD	0.0055	T/YR	PER ROLLING 12 MONTH PERIOD	NSPS PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0377	HARRISON POWER	OH	P0122266	4/19/2018	Emergency Fire Pump (P004)	ULSD	320	HP	TPM10	Good combustion practices (ULSD) and compliance with 40 CFR Part 60, Subpart IIII	0.11	LB/H		BACT-PSD	0.0055	T/YR	PER ROLLING 12 MONTH PERIOD	NSPS PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0377	HARRISON POWER	OH	P0122266	4/19/2018	Emergency Fire Pump (P004)	ULSD	320	HP	TPM2.5	Good combustion practices (ULSD) and compliance with 40 CFR Part 60, Subpart IIII	0.11	LB/H		BACT-PSD	0.0055	T/YR	PER ROLLING 12 MONTH PERIOD	NSPS PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
FL-0363	DANIA BEACH ENERGY CENTER	FL	0110037-017-AC	12/4/2017	Emergency Fire Pump Engine (422 hp)	ULSD	0		FPM	Certified engine	0.2	G / KWH		BACT-PSD	0			Certified engine, no testing required
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	OH	P0122829	11/7/2017	Emergency Diesel Fire Pump Engine (P002)	Diesel fuel	700	HP	TPM	Good combustion design	0.23	LB/H		BACT-PSD	0.012	T/YR	PER ROLLING 12 MONTH PERIOD	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	OH	P0122829	11/7/2017	Emergency Diesel Fire Pump Engine (P002)	Diesel fuel	700	HP	TPM10	Good combustion design	0.23	LB/H		BACT-PSD	0.012	T/YR	PER ROLLING 12 MONTH PERIOD	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	OH	P0122829	11/7/2017	Emergency Diesel Fire Pump Engine (P002)	Diesel fuel	700	HP	TPM2.5	Good combustion design	0.23	LB/H		BACT-PSD	0.012	T/YR	PER ROLLING 12 MONTH PERIOD	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0374	GUERNSEY POWER STATION LLC	OH	P0122594	10/23/2017	Emergency Fire Pump (P006)	Diesel fuel	410	HP	TPM	Certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII. Good combustion practices per the manufacturer's operating manual.	0.13	LB/H		BACT-PSD	0.0065	T/YR	PER ROLLING 12 MONTH PERIOD	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0374	GUERNSEY POWER STATION LLC	OH	P0122594	10/23/2017	Emergency Fire Pump (P006)	Diesel fuel	410	HP	TPM2.5	Certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII. Good combustion practices per the manufacturer's operating manual.	0.13	LB/H		BACT-PSD	0.0065	T/YR	PER ROLLING 12 MONTH PERIOD	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0372	OREGON ENERGY CENTER	OH	P0121049	9/27/2017	Emergency fire pump engine (P004)	ULSD	300	HP	TPM10	Ultra low sulfur diesel fuel	0.1	LB/H		BACT-PSD	0.02	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0372	OREGON ENERGY CENTER	OH	P0121049	9/27/2017	Emergency fire pump engine (P004)	ULSD	300	HP	TPM2.5	Ultra low sulfur diesel fuel	0.1	LB/H		BACT-PSD	0.02	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0370	TRUMBULL ENERGY CENTER	OH	P0122331	9/7/2017	Emergency fire pump engine (P004)	ULSD	300	HP	TPM10	Ultra low sulfur diesel fuel	0.1	LB/H		BACT-PSD	0.03	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 0.20 g/kW-hr.
OH-0370	TRUMBULL ENERGY CENTER	OH	P0122331	9/7/2017	Emergency fire pump engine (P004)	ULSD	300	HP	TPM2.5	Ultra low sulfur diesel fuel	0.1	LB/H		BACT-PSD	0.03	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 0.20 g/kW-hr.
MI-0423	INDECK NILES, LLC	MI	75-16	1/4/2017	EUFPEENGINE (Emergency engine--diesel fire pump)	Diesel	1.66	MMBTU/H	FPM	Good combustion practices and meeting NSPS Subpart IIII requirements.	0.15	G/BHP-H	TEST PROTOCOL WILL SPECIFY AVG TIME.	BACT-PSD	0			
MI-0423	INDECK NILES, LLC	MI	75-16	1/4/2017	EUFPEENGINE (Emergency engine--diesel fire pump)	Diesel	1.66	MMBTU/H	TPM10	Good combustion practices	0.57	LB/H	HOURLY	BACT-PSD	0			
MI-0423	INDECK NILES, LLC	MI	75-16	1/4/2017	EUFPEENGINE (Emergency engine--diesel fire pump)	Diesel	1.66	MMBTU/H	TPM2.5	Good combustion practices	0.57	LB/H	HOURLY	BACT-PSD	0			

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RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
MI-0424	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13C	12/5/2016	EUFENGINE (Emergency engine--diesel fire pump)	diesel	500	H/YR	FPM	Good combustion practices.	0.22	G/HP-H	TEST PROTOCOL WILL SPECIFY AVG TIME	BACT-PSD	0			
MI-0424	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13C	12/5/2016	EUFENGINE (Emergency engine--diesel fire pump)	diesel	500	H/YR	TPM10	Good combustion practices.	0.09	LB/MMBTU	TEST PROTOCOL WILL SPECIFY AVG TIME	BACT-PSD	0			
MI-0424	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13C	12/5/2016	EUFENGINE (Emergency engine--diesel fire pump)	diesel	500	H/YR	TPM2.5	Good combustion practices.	0.09	LB/MMBTU	TEST PROTOCOL WILL SPECIFY AVG TIME	BACT-PSD	0			
OH-0367	SOUTH FIELD ENERGY LLC	OH	P0119495	9/23/2016	Emergency fire pump engine (P004)	Diesel fuel	311	HP	TPM10	State-of-the-art combustion design	0.1	LB/H		BACT-PSD	0.03	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 0.20 g/kW-hr.
OH-0367	SOUTH FIELD ENERGY LLC	OH	P0119495	9/23/2016	Emergency fire pump engine (P004)	Diesel fuel	311	HP	TPM2.5	State-of-the-art combustion design	0.1	LB/H		BACT-PSD	0.03	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 0.20 g/kW-hr.
PA-0310	CPV FAIRVIEW ENERGY CENTER	PA	11-00536A	9/2/2016	Emergency Fire Pump Engine	ULSD	0		TPM		0.15	G/BHP-HR		BACT-PSD	0			
LA-0313	ST. CHARLES POWER STATION	LA	PSD-LA-804	8/31/2016	SCPS Emergency Diesel Firewater Pump 1	ULSD	282	HP	FPM10	Compliance with NESHAP 40 CFR 63 Subpart ZZZZ and NSPS 40 CFR 60 Subpart IIII, and good combustion practices (use of ultra-low sulfur diesel fuel).	0.09	LB/H	HOURLY MAXIMUM	BACT-PSD	0.02	T/YR	ANNUAL MAXIMUM	BACT Limit = 0.15 G/BHP-HR
LA-0313	ST. CHARLES POWER STATION	LA	PSD-LA-804	8/31/2016	SCPS Emergency Diesel Firewater Pump 1	ULSD	282	HP	FPM2.5	Compliance with NESHAP 40 CFR 63 Subpart ZZZZ and NSPS 40 CFR 60 Subpart IIII, and good combustion practices (use of ultra-low sulfur diesel fuel).	0.09	LB/H	HOURLY MAXIMUM	BACT-PSD	0.02	T/YR	ANNUAL MAXIMUM	BACT Limit = 0.05 G/BHP-HR
NJ-0085	MIDDLESEX ENERGY CENTER, LLC	NJ	19149/PCP15 0001	7/19/2016	EMERGENCY DIESEL FIRE PUMP	ULSD	100	H/YR	FPM	Use of Ultra Low Sulfur Diesel (ULSD) Oil a clean burning fuel and limited hours of operation	0.108	LB/H		BACT-PSD	0			
NJ-0085	MIDDLESEX ENERGY CENTER, LLC	NJ	19149/PCP15 0001	7/19/2016	EMERGENCY DIESEL FIRE PUMP	ULSD	100	H/YR	TPM10	Use of Ultra Low Sulfur Diesel (ULSD) Oil a clean burning fuel and limited hours of operation	0.108	LB/H		BACT-PSD	0			
NJ-0085	MIDDLESEX ENERGY CENTER, LLC	NJ	19149/PCP15 0001	7/19/2016	EMERGENCY DIESEL FIRE PUMP	ULSD	100	H/YR	TPM2.5	Use of ULSD a clean burning fuel and limited hours of operation	0.108	LB/H		BACT-PSD	0			
FL-0356	OKEECHOBEE CLEAN ENERGY CENTER	FL	0930117-001-AC	3/9/2016	One 422-hp emergency fire pump engine	ULSD	0		TPM	Use of clean fuel	0.2	G / KW-HR		BACT-PSD	0			
PA-0309	LACKAWANNA ENERGY CTR/JESSUP	PA	35-00069A	12/23/2015	Fire pump engine	ULSD	15	gal/hr	FPM		0.11	GM/HP-HR		BACT-PSD	0.002	TONS	12-MONTH ROLLING BASIS	
PA-0309	LACKAWANNA ENERGY CTR/JESSUP	PA	35-00069A	12/23/2015	Fire pump engine	ULSD	15	gal/hr	TPM10		0.11	GM/HP-HR		BACT-PSD	0.002	TONS	12-MONTH ROLLING BASIS	
PA-0309	LACKAWANNA ENERGY CTR/JESSUP	PA	35-00069A	12/23/2015	Fire pump engine	ULSD	15	gal/hr	TPM2.5		0.11	GM/HP-HR		BACT-PSD	0.002	TONS	12-MONTH ROLLING BASIS	
MD-0045	MATTAWOMAN ENERGY CENTER	MD	PSC CASE. NO. 9330	11/13/2015	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	ULSD	305	HP	TPM10	EXCLUSIVE USE OF ULTRA LOW SULFUR FUEL AND GOOD COMBUSTION PRACTICES.	0.18	G/HP-H		BACT-PSD	0			

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MD-0045	MATTAWOMAN ENERGY CENTER	MD	PSC CASE. NO. 9330	11/13/2015	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	ULSD	305	HP	TPM2.5	EXCLUSIVE USE OF ULTRA LOW SULFUR FUEL AND GOOD COMBUSTION PRACTICES	0.18	G/HP-H		BACT-PSD	0			
MD-0045	MATTAWOMAN ENERGY CENTER	MD	PSC CASE. NO. 9330	11/13/2015	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	ULSD	305	HP	FPM	EXCLUSIVE USE OF ULTRA LOW SULFUR FUEL AND GOOD COMBUSTION PRACTICES	0.2	G/KW-H		BACT-PSD	0			NSPS SUBPART IIII
PA-0311	MOXIE FREEDOM GENERATION PLANT	PA	40-00129A	9/1/2015	Fire Pump Engine	diesel	0		TPM		0.2	G/HP-HR		BACT-PSD	0.006	TPY	12-MONTH ROLLING BASIS	
PA-0311	MOXIE FREEDOM GENERATION PLANT	PA	40-00129A	9/1/2015	Fire Pump Engine	diesel	0		TPM10		0.2	G/HP-HR		BACT-PSD	0.006	TPY	12-MONTH ROLLING BASIS	
PA-0311	MOXIE FREEDOM GENERATION PLANT	PA	40-00129A	9/1/2015	Fire Pump Engine	diesel	0		TPM2.5		2	HP-HR		BACT-PSD	0.006	TPY	12-MONTH ROLLING BASIS	
OH-0366	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	OH	P0117655	8/25/2015	Emergency fire pump engine (P004)	Diesel fuel	140	HP	TPM10	State-of-the-art combustion design	0.07	LB/H		BACT-PSD	0.02	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 0.30 g/kW-hr.
OH-0366	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	OH	P0117655	8/25/2015	Emergency fire pump engine (P004)	Diesel fuel	140	HP	TPM2.5	State-of-the-art combustion design	0.07	LB/H		BACT-PSD	0.02	T/YR	PER ROLLING 12 MONTH PERIOD	Standard limit (metric) is 0.30 g/kW-hr.
WV-0025	MOUNDSVILLE COMBINED CYCLE POWER PLANT	WV	R14-0030	11/21/2014	Fire Pump Engine	Diesel	251	HP	FPM2.5		0			BACT-PSD	0			
OH-0363	NTE OHIO, LLC	OH	P0116610	11/5/2014	Emergency Fire Pump Engine (P003)	Diesel fuel	260	HP	TPM	Emergency operation only, < 500 hours/year each for maintenance checks and readiness testing designed to meet NSPS Subpart IIII	0.09	LB/H		BACT-PSD	0.023	T/YR	PER ROLLING 12 MONTH PERIOD	
OH-0363	NTE OHIO, LLC	OH	P0116610	11/5/2014	Emergency Fire Pump Engine (P003)	Diesel fuel	260	HP	TPM10	Emergency operation only, < 500 hours/year each for maintenance checks and readiness testing designed to meet NSPS Subpart IIII	0.09	LB/H		BACT-PSD	0.023	T/YR	PER ROLLING 12 MONTH PERIOD	
OH-0363	NTE OHIO, LLC	OH	P0116610	11/5/2014	Emergency Fire Pump Engine (P003)	Diesel fuel	260	HP	TPM2.5	Emergency operation only, < 500 hours/year each for maintenance checks and readiness testing designed to meet NSPS Subpart IIII	0.09	LB/H		BACT-PSD	0.023	T/YR	PER ROLLING 12 MONTH PERIOD	
MD-0046	KEYS ENERGY CENTER	MD	PSC CASE NO. 9297	10/31/2014	DIESEL-FIRED AUXILIARY (EMERGENCY) ENGINES (TWO)	ULSD	1500	KW	FPM	USE OF ULTRA LOW SULFUR DIESEL AND GOOD COMBUSTION PRACTICES	0.2	G/KW-H		BACT-PSD	0			NSPS SUBPART IIII.
MD-0046	KEYS ENERGY CENTER	MD	PSC CASE NO. 9297	10/31/2014	DIESEL-FIRED AUXILIARY (EMERGENCY) ENGINES (TWO)	ULSD	1500	KW	TPM10	USE OF ULTRA LOW SULFUR DIESEL AND GOOD COMBUSTION PRACTICES.	0.18	G/HP-H		BACT-PSD	0			
MD-0046	KEYS ENERGY CENTER	MD	PSC CASE NO. 9297	10/31/2014	DIESEL-FIRED FIRE PUMP ENGINE	ULSD	300	HP	FPM	EXCLUSIVE USE OF ULTRA LOW SULFUR DIESEL FUEL AND GOOD COMBUSTION PRACTICES	0.2	G/KW-H		BACT-PSD	0			NSPS IIII
MD-0046	KEYS ENERGY CENTER	MD	PSC CASE NO. 9297	10/31/2014	DIESEL-FIRED FIRE PUMP ENGINE	ULSD	300	HP	TPM10	EXCLUSIVE USE OF ULTRA LOW SULFUR DIESEL FUEL AND GOOD COMBUSTION PRACTICES	0.18	G/HP-H		BACT-PSD	0			
MD-0041	CPV ST. CHARLES	MD	PSC CASE NO. 9280	4/23/2014	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	ULSD	300	HP	FPM	EXCLUSIVE USE OF ULTRA LOW SULFUR FUEL AND GOOD COMBUSTION PRACTICES	0.15	G/HP-H	N/A	BACT-PSD	0			

Table E-29
RACT/BACT/LAER Clearing House Summary for PM Emissions from Firepumps

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
MD-0041	CPV ST. CHARLES	MD	PSC CASE NO. 9280	4/23/2014	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	ULSD	300	HP	TPM10	EXCLUSIVE USE OF ULTRA LOW SULFUR FUEL AND GOOD COMBUSTION PRACTICES	0.15	G/HP-H	N/A	BACT-PSD	0			
MD-0042	WILDCAT POINT GENERATION FACILITY	MD	CPCN CASE NO. 9327	4/8/2014	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	ULSD	477	HP	FPM	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES, LIMITED HOURS OF OPERATION, AND DESIGNED TO ACHIEVE EMISSION LIMITS	0.15	G/HP-H		BACT-PSD	0.2	G/KW-H		NSPS 40 CFR 60 SUBPART IIII
MD-0042	WILDCAT POINT GENERATION FACILITY	MD	CPCN CASE NO. 9327	4/8/2014	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	ULSD	477	HP	TPM10	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES, LIMITED HOURS OF OPERATION, AND DESIGNED TO ACHIEVE EMISSION LIMITS	0.15	G/HP-H		BACT-PSD	0.23	G/KW-H		NSPS 40 CFR 60 SUBPART IIII
MD-0042	WILDCAT POINT GENERATION FACILITY	MD	CPCN CASE NO. 9327	4/8/2014	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	ULSD	477	HP	TPM2.5	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES, LIMITED HOURS OF OPERATION, AND DESIGNED TO ACHIEVE EMISSION LIMITS	0.15	G/HP-H		BACT-PSD	0.23	G/KW-H		NSPS 40 CFR 60 SUBPART IIII
NJ-0081	PSEG FOSSIL LLC SEWAREN GENERATING	NJ	18068 - (BOP120002)	3/7/2014	Emergency diesel fire pump	ULSD	0		FPM	Use of Ultra low sulfur distillate oil	0.15	G/B-HP-H		BACT-PSD	0.099	LB/H		
NJ-0081	PSEG FOSSIL LLC SEWAREN GENERATING	NJ	18068 - (BOP120002)	3/7/2014	Emergency diesel fire pump	ULSD	0		TPM10	Use of ultra low sulfur distillate oil	0.15	G/B-HP-H		BACT-PSD	0.099	LB/H		
MA-0039	SALEM HARBOR STATION REDEVELOPMENT	MA	NE-12-022	1/30/2014	Fire Pump Engine	ULSD	2.7	MMBTU/H	TPM10		0.15	GM/BHP-H	1 HR BLOCK AVERAGE	BACT-PSD	0.12	LB/H	1 HR BLOCK AVERAGE	
MA-0039	SALEM HARBOR STATION REDEVELOPMENT	MA	NE-12-022	1/30/2014	Fire Pump Engine	ULSD	2.7	MMBTU/H	TPM2.5		0.15	GM/BHP-H	1 HR BLOCK AVERAGE	BACT-PSD	0.12	LB/H	1 HR BLOCK AVERAGE	
MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13	12/4/2013	Emergency Engine --Diesel Fire Pump (EUPENGINE)	Diesel	165	HP	FPM	Good combustion practices	0.22	G/HP-H	TEST PROTOCOL	BACT-PSD	0			
MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13	12/4/2013	Emergency Engine --Diesel Fire Pump (EUPENGINE)	Diesel	165	HP	TPM10	Good combustion practices	0.09	LB/MMBTU	TEST PROTOCOL	BACT-PSD	0			
MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13	12/4/2013	Emergency Engine --Diesel Fire Pump (EUPENGINE)	Diesel	165	HP	TPM2.5	Good combustion practices	0.09	LB/MMBTU	TEST PROTOCOL	BACT-PSD	0			
OH-0360	CARROLL COUNTY ENERGY	OH	P0113762	11/5/2013	Emergency fire pump engine (P004)	diesel	400	HP	TPM10	Purchased certified to the standards in NSPS Subpart IIII	0.131	LB/H		BACT-PSD	0.033	T/YR	PER ROLLING 12 MONTH PERIOD	Additional limit: 0.20 g PM10/kW-H (0.15 G/HP-H) NSPS standard.
OH-0360	CARROLL COUNTY ENERGY	OH	P0113762	11/5/2013	Emergency fire pump engine (P004)	diesel	400	HP	TPM2.5	Purchased certified to the standards in NSPS Subpart IIII	0.131	LB/H		BACT-PSD	0.033	T/YR	PER ROLLING 12 MONTH PERIOD	Additional limit: 0.20 g PM10/kW-H (0.15 G/HP-H) NSPS standard.
LA-0308	MORGAN CITY POWER PLANT	LA	PSD-LA-767	9/26/2013	380 HP Diesel Fired Pump Engine	Diesel	2.3	MMBTU/hr	TPM10	Good combustion and maintenance practices, and compliance with NSPS 40 CFR 60 Subpart IIII	0.15	LB/H	HOURLY MAXIMUM	BACT-PSD	0.01	T/YR	ANNUAL MAXIMUM	BACT Limit = 0.441 lb/MWh (12 month average)
LA-0308	MORGAN CITY POWER PLANT	LA	PSD-LA-767	9/26/2013	380 HP Diesel Fired Pump Engine	Diesel	2.3	MMBTU/hr	FPM2.5	Good combustion and maintenance practices, and compliance with NSPS 40 CFR 60 Subpart IIII	0.15	LB/H	HOURLY MAXIMUM	BACT-PSD	0.01	T/YR	ANNUAL MAXIMUM	BACT Limit = 0.441 lb/MWh (12 month average)

Table E-29
RACT/BACT/LAER Clearing House Summary for PM Emissions from Firepumps

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
NY-0104	CPV VALLEY ENERGY CENTER	NY	3-335600136/0001	8/1/2013	Fire pump	ULSD	0		FPM	Ultra low sulfur diesel with maximum sulfur content 0.0015 percent.	0.043	LB/MMBTU	1 H	BACT-PSD	0			Also PM-10.
MI-0410	THETFORD GENERATING STATION	MI	191-12	7/25/2013	EU-FPENGINE: Diesel fuel fired emergency backup fire pump	ULSD	315	hp nameplate	FPM	Proper combustion design and ultra low sulfur diesel fuel.	0.15	G/HP-H	TEST PROTOCOL WILL SPECIFY AVG. TIME	BACT-PSD	0			ultra low sulfur diesel fuel (15 pppmw); 100 hours per year operation for maintenance and readiness testing; NSPS IIII and NESHAP ZZZZ
MI-0410	THETFORD GENERATING STATION	MI	191-12	7/25/2013	EU-FPENGINE: Diesel fuel fired emergency backup fire pump	ULSD	315	hp nameplate	TPM10	Proper combustion design and ultra low sulfur diesel fuel	0.6	LB/H	TEST PROTOCOL WILL SPECIFY AVG. TIME	BACT-PSD	0			ultra low sulfur diesel fuel (15 pppmw); 100 hours per year operation for maintenance and readiness testing; NSPS IIII and NESHAP ZZZZ.
MI-0410	THETFORD GENERATING STATION	MI	191-12	7/25/2013	EU-FPENGINE: Diesel fuel fired emergency backup fire pump	ULSD	315	hp nameplate	TPM2.5	Proper combustion design and ultra low sulfur diesel fuel.	0.6	LB/H	TEST PROTOCOL WILL SPECIFY AVG. TIME	BACT-PSD	0			ultra low sulfur diesel fuel (15 pppmw); 100 hours per year operation for maintenance and readiness testing; NSPS IIII and NESHAP ZZZZ.
OH-0352	OREGON CLEAN ENERGY CENTER	OH	P0110840	6/18/2013	Emergency fire pump engine	diesel	300	HP	TPM10	Purchased certified to the standards in NSPS Subpart IIII	0.1	LB/H		BACT-PSD	0.025	T/YR	PER ROLLING 12- MONTHS	Additional limit: 0.20 g PM10/kW-H NSPS standard If required Methods 201 or 201A and 202

Table E-30
RACT/BACT/LAER Clearing House Summary for CO2e Emissions from Firepumps

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
*IL-0134	CRONUS CHEMICALS	IL	19110020	12/21/2023	Fire Water Pump Engine	ULSD	320	hp	CO2e		92	TONS/YEAR		BACT-PSD	0			The emergency fire pump shall use good engineering design and fuel efficient design.
*IN-0365	MAPLE CREEK ENERGY LLC	IN	T153-45909-00056	6/19/2023	Emergency fire pump	Diesel	420	brake hp	CO2e		123	TONS PER YEAR		BACT-PSD	0			
MI-0454	LBWL-ERICKSON STATION	MI	74-18D	12/20/2022	EUFPRICE--A 315 HP diesel-fueled emergency engine	Diesel	2.5	MMBTU/hr	CO2e	Low carbon fuel (pipeline quality natural gas), good combustion practices, and energy efficiency measures.	20	T/YR	12-MO ROLLING TIME PERIOD	BACT-PSD	0			The emission limit above is 20 tons/year based upon a 12-month rolling time period as determined at the end of each calendar month. Carbon capture and sequestration (CCS) would not be economically feasible based upon a qualitative assessment based upon the CTG/HRSG train analysis.
*LA-0402	DESTREHAN OIL PROCESSING FACILITY	LA	PSD-LA-855	12/13/2023	Emergency diesel firepump engine	Diesel	200	hp	CO2e	Good Combustion Practices	12	T/YR	ANNUAL MAXIMUM	BACT-PSD	0			BACT shall include monitoring all parameters recommended by the manufacturer (e.g., flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature). Parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emission unit.
IL-0133	LINCOLN LAND ENERGY CENTER	IL	18040008	7/29/2022	Fire Water Pump Engine	ULSD	320	horsepower	CO2e		92	TONS/YEAR		BACT-PSD	0			
AK-0088	LIQUEFACTION PLANT	AK	AQ1539CPT01	7/7/2022	Diesel Fire Pump Engine	Diesel	27.9	Gal/hr	CO2e	Good Combustion Practices; Limited Operation;	163.6	LB/MMBTU	3-HOURS	BACT-PSD	500	HRS/YR		
MI-0451	MEC NORTH, LLC	MI	167-17B	6/23/2022	EUPPENGINE (North Plant): Fire Pump Engine	Diesel	300	HP	CO2e	Good combustion practices	85.6	T/YR	12-MO ROLLING TIME PERIOD	BACT-PSD	0			
MI-0452	MEC SOUTH, LLC	MI	168-17B	6/23/2022	EUPPENGINE (South Plant): Fire pump engine	Diesel	300	HP	CO2e	Good combustion practices.	85.6	T/YR	12-MO ROLLING TIME PERIOD	BACT-PSD	0			
LA-0391	MAGNOLIA POWER GENERATING STATION UNIT 1	LA	PSD-LA-839	6/3/2022	Emergency Diesel Fired Water Pump Engine	ULSD	355	HP	CO2e	Compliance with 40 CFR 60 Subpart IIII, good combustion practices, and the use of ultra-low sulfur diesel fuel.	74.21	KG/MM BTU		BACT-PSD	0			BACT limit is 74.21 kg/MM BTU (163.61 lb/MM BTU). Compliance with 40 CFR 60 Subpart IIII (Tier 2 non-road engines) standards, good combustion practices, and the use of ultra-low sulfur diesel fuel.
MI-0447	LBWL--ERICKSON STATION	MI	74-18A	1/7/2021	EUFPRICE--A 315 HP diesel fueled emergency engine	Diesel	2.5	MMBTU/hr	CO2e	Low carbon fuel (pipeline quality natural gas), good combustion practices and energy efficiency measures.	20	T/YR	12-MO ROLLING TIME PERIOD	BACT-PSD	0			The emission limit is 20 tons/year based on a 12-month rolling time period as determined at the end of each calendar month. Carbon capture and sequestration (CCS) would not be economically feasible based upon a qualitative assessment based upon the CTG/HRSG train analysis.
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Emergency Diesel Fire Pump (P06)	Diesel	282	HP	CO2e	Be certified by manufacturer to EPA's criteria for Tier 3 reciprocating internal combustion engines and to the 40 CFR 60, Subpart IIII emission limitations, operation limited to 500 hours/year, and operate and maintain according to the manufacturer's recommendations.	0			BACT-PSD	0			
LA-0364	FG LA COMPLEX	LA	PSD-LA-812	1/6/2020	Emergency Fire Water Pumps	Diesel Fuel	550	HP	CO2e	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0			BACT-PSD	0			Engines are limited to 100 hours of non-emergency use.
*MI-0445	INDECK NILES, LLC	MI	75-16B	11/26/2019	EUPPENGINE (Emergency engine-diesel fire pump	diesel fuel	1.66	MMBTU/hr	CO2e	Good combustion practices	13.58	T/YR	12-MO ROLLING TIME PERIOD	BACT-PSD	0			
VA-0332	CHICKAHOMINY POWER LLC	VA	52610-1	6/24/2019	Emergency Fire Water Pump	ULSD	500	HR/YR	CO2e	good combustion practices, high efficiency design, and the use of ultra low sulfur diesel (\$15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	106	T/YR	12 MO ROLLING TOTAL	BACT-PSD	0			
IL-0130	JACKSON ENERGY CENTER	IL	17040013	12/31/2018	Firewater Pump Engine	ULSD	420	horsepower	CO2e		241	TONS/YEAR	12-MONTH ROLLING AVERAGE	BACT-PSD	0			Emission Limit 1 applies for firewater pump engine and emergency engine
MI-0441	LBWL--ERICKSON STATION	MI	74-18	12/21/2018	EUFPRICE--A 315 HP diesel fueled emergency engine	Diesel	2.5	MMBTU/hr	CO2e	Good combustion practices and energy efficiency measures.	20	T/YR	12-MO ROLLING TIME PERIOD	BACT-PSD	0			Carbon capture and sequestration (CCS) would not be economically feasible based upon a qualitative assessment based upon the CTG/HRSG train analysis.
LA-0331	CALCASIEU PASS LNG PROJECT	LA	PDS-LA-805	9/21/2018	Firewater Pumps	Diesel Fuel	634	KW	CO2e	Good Combustion Practices and Good Operation and Maintenance Practices.	44	T/YR	ANNUAL TOTAL	BACT-PSD	0			Annual total for 2 firewater pumps.

Table E-30
RACT/BACT/LAER Clearing House Summary for CO2e Emissions from Firepumps

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
IL-0129	CPV THREE RIVERS ENERGY CENTER	IL	16060032	7/30/2018	Firewater Pump Engine	ULSD	0		CO2e		0			BACT-PSD	0			Permit limit: 241 ton/year. (includes emergency engines)
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	MI	19-18	7/16/2018	EUPPENGINE: Fire pump engine	Diesel	399	BHP	CO2e	Energy efficient design	86	T/YR	12-MO ROLLING TIME PERIOD	BACT-PSD	0			
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MI	167-17 AND 168-17	6/29/2018	EUPPENGINE (South Plant): Fire pump engine	Diesel	300	HP	CO2e	Good combustion practices.	85.6	T/YR	12-MO ROLLING TIME PERIOD	BACT-PSD	0			
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MI	167-17 AND 168-17	6/29/2018	EUPPENGINE (North Plant): Fire pump engine	Diesel	300	HP	CO2e	Good combustion practices.	85.6	T/YR	12-MONTH ROLLING TIME PERIOD	BACT-PSD	0			
VA-0328	C4GT, LLC	VA	52588	4/26/2018	Emergency Fire Water Pump	ULSD	500	HR/YR	CO2e	good combustion practices and the use of ultra low sulfur diesel (S15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	1040	T/YR	12 MO ROLLING TOTAL	BACT-PSD	0			
OH-0377	HARRISON POWER	OH	P0122266	4/19/2018	Emergency Fire Pump (P004)	Diesel fuel	320	HP	CO2e	Efficient design and proper maintenance and operation	18.67	T/YR	PER ROLLING 12 MONTH PERIOD	BACT-PSD	0			
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	OH	P0122829	11/7/2017	Emergency Diesel Fire Pump Engine (P002)	Diesel fuel	700	HP	CO2e	Efficient design	40.1	T/YR	PER ROLLING 12 MONTH PERIOD	BACT-PSD	0			
OH-0374	GUERNSEY POWER STATION LLC	OH	P0122594	10/23/2017	Emergency Fire Pump (P006)	Diesel fuel	410	HP	CO2e	good operating practices (proper maintenance and operation)	29	T/YR	PER ROLLING 12 MONTH PERIOD	BACT-PSD	0			
OH-0372	OREGON ENERGY CENTER	OH	P0121049	9/27/2017	Emergency fire pump engine (P004)	Diesel fuel	300	HP	CO2e	State-of-the-art combustion design	87	T/YR	PER ROLLING 12 MONTH PERIOD	BACT-PSD	0			
OH-0370	TRUMBULL ENERGY CENTER	OH	P0122331	9/7/2017	Emergency fire pump engine (P004)	Diesel fuel	300	HP	CO2e	Efficient design	87	T/YR	PER ROLLING 12 MONTH PERIOD	BACT-PSD	0			
MI-0423	INDECK NILES, LLC	MI	75-16	1/4/2017	EUPPENGINE (Emergency engine--diesel fire pump)	Diesel	1.66	MMBTU/hr	CO2e	Good combustion practices	13.58	T/YR	12 MO. ROLLING TIME PERIOD	BACT-PSD	0			
MI-0424	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13C	12/5/2016	EUPPENGINE (Emergency engine--diesel fire pump)	diesel	500	H/YR	CO2e	Good combustion practices.	55.6	T/YR	12-MONTH ROLLING TIME PERIOD	BACT-PSD	0			
OH-0367	SOUTH FIELD ENERGY LLC	OH	P0119495	9/23/2016	Emergency fire pump engine (P004)	Diesel fuel	311	HP	CO2e	Efficient design	90	T/YR	PER ROLLING 12 MONTH PERIOD	BACT-PSD	0			
LA-0313	ST. CHARLES POWER STATION	LA	PSD-LA-804	8/31/2016	SCPS Emergency Diesel Firewater Pump 1	Diesel	282	HP	CO2e	Good combustion practices	0			BACT-PSD	0			BACT Limit = 527.40G/BHP-HR
VA-0325	GREENSVILLE POWER STATION	VA	52525	6/17/2016	DIESEL-FIRED WATER PUMP 376 bph (1)	DIESEL FUEL	0		CO2e	Good Combustion Practices/Maintenance	104	T/YR	12 MO ROLLING TOTAL	N/A	0			
PA-0309	LACKAWANNA ENERGY CTR/JESSUP	PA	35-00068A	12/23/2015	Fire pump engine	ULSD	15	gal/hr	CO2e		9	TON	12-MONTH ROLLING BASIS	BACT-PSD	0			
PA-0311	MOXIE FREEDOM GENERATION PLANT	PA	40-00129A	9/1/2015	Fire Pump Engine	diesel	0		CO2e		14	TPY	12-MONTH ROLLING BASIS	BACT-PSD	0			
OH-0366	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	OH	P0117655	8/25/2015	Emergency fire pump engine (P004)	Diesel fuel	140	HP	CO2e	Efficient design	41	T/YR	PER ROLLING 12 MONTH PERIOD	BACT-PSD	0			
WV-0025	MOUNDSVILLE COMBINED CYCLE POWER PLANT	WV	R14-0030	11/21/2014	Fire Pump Engine	Diesel	251	HP	CO2e		309	LB/H		BACT-PSD	0			
OH-0363	NTE OHIO, LLC	OH	P0116610	11/5/2014	Emergency Fire Pump Engine (P003)	Diesel fuel	260	HP	CO2e	Emergency operation only, < 500 hours/year each for maintenance checks and readiness testing designed to meet NSPS Subpart IIII	75	T/YR	PER ROLLING 12 MONTH PERIOD	BACT-PSD	0			
TX-0748	FGE POWER, FGE TEXAS PROJECT	TX	PSD-TX-1364-GHG	4/28/2014	Firewater Pump	Diesel	2.7	MMBTU/hr	CO2e		0			BACT-PSD	0			-Limited to 52 hrs of non-emergency operation per year on a 12-month rolling total basis. -The Fire Water Pump shall meet the applicable monitoring and recordkeeping requirements as required in 40 CFR Part 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. -The Permittee shall install and maintain an operational non-resettable elapsed time meter for the Fire Water Pump and Emergency Generator. -The Permittee shall maintain a file of all records, data measurements, reports and documents related to the operation of the Fire Water Pump.
MA-0039	SALEM HARBOR STATION REDEVELOPMENT	MA	NE-12-022	1/30/2014	Fire Pump Engine	ULSD	2.7	MMBTU/hr	CO2e		162.85	LB/MMBTU		BACT-PSD	0			

Table E-30
RACT/BACT/LAER Clearing House Summary for CO2e Emissions from Firepumps

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process/Facility Info	Fuel	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Secondary Limit	Secondary Limit Units	Secondary Limit Averaging Period	Pollutant Compliance Notes
PA-0296	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE	PA	06-05150A	12/17/2013	Emergency Firewater Pump	Diesel	16	Gal/hr	CO2e		19	T/YR		OTHER CASE-BY-CASE	0			
MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	MI	107-13	12/4/2013	Emergency Engine -- Diesel Fire Pump (EUFENGINE)	Diesel	165	HP	CO2e	Good combustion practices	0.29	T/YR	12-MO ROLLING TIME PERIOD	BACT-PSD	0			
OH-0360	CARROLL COUNTY ENERGY	OH	P0113762	11/5/2013	Emergency fire pump engine (P004)	diesel	400	HP	CO2e		115.75	T/YR	PER ROLLING 12 MONTH PERIOD	BACT-PSD	0			
MI-0410	THETFORD GENERATING STATION	MI	191-12	7/25/2013	EU-FPENGINE: Diesel fuel fired emergency backup fire pump	ULSD	315	hp nameplate	CO2e	Proper combustion design and ultra low sulfur diesel fuel.	15.6	T/YR	12-MO. ROLL TIME PERIOD	BACT-PSD	0			Ultra low sulfur diesel fuel (15 ppmw); 100 hour per year operation for maintenance and readiness testing.
OH-0352	OREGON CLEAN ENERGY CENTER	OH	P0110840	6/18/2013	Emergency fire pump engine	diesel	300	HP	CO2e		87	T/YR	PER ROLLING 12-MONTHS	BACT-PSD	0			
PA-0291	HICKORY RUN ENERGY STATION	PA	37-337A	4/23/2013	EMERGENCY FIREWATER PUMP	ULSD	3.25	MMBTU/hr	CO2e		33.8	TPY	12-MONTH ROLLING BASIS	OTHER CASE-BY-CASE	0			

Table E-31
RACT/BACT/LAER Clearing House Summary for CO2e Emissions from Firepumps

RBLCID	Facility Name	State	Permit #	Permit Issuance Date	Process	Process/Facility Info	Throughput	Units	Pollutant	Control Device	Primary Limit	Primary Limit Units	Primary Limit Averaging Period	Case By Case Basis	Pollutant Compliance Notes
KS-0029	THE EMPIRE DISTRICT ELECTRIC COMPANY	KS	C-12987	7/14/2015	Insulated circuit breaker	Four (4) Sulfur Hexafluoride (SF6) ̈́ insulated circuit breakers.	0		Carbon Dioxide Equivalent (CO2e)	Installation of modern, totally enclosed SF6 circuit breakers with density (leak detection) alarms and a guaranteed loss rate of < 0.5 % by weight per year.	6.9	TONS PER YEAR		BACT-PSD	
LA-0391	MAGNOLIA POWER GENERATING STATION UNIT 1	LA	PSD-LA-839	6/3/2022	Circuit Breakers	Four circuit breakers insulated with SF6 non-toxic synthetic gas.	0		Carbon Dioxide Equivalent (CO2e)	Enclosed pressure design with a low pressure detection system with an alarm to limit SF6 leak rate to 0.5 % per year.	85	T/YR		BACT-PSD	BACT limit is 85 tons/yr. Enclosed pressure design with a low pressure detection system with an alarm to limit SF6 leak rate to 0.5 % per year. Compliance with American National Standards Institute (ANSI) standards with emission limits demonstrated using the methodology in 40 CFR 98 Subpart DD.
MD-0045	MATTAWOMAN ENERGY CENTER	MD	PSC CASE. NO. 9330	11/13/2015	CIRCUIT BREAKERS	GHG BACT FOR THE CIRCUIT BREAKERS SHALL BE INSTALLATION OF STATE-OF-THE-ART CIRCUIT BREAKERS THAT ARE DESIGNED TO MEET ANSI C37.013 OR EQUIVALENT TO DETECT AND MINIMIZE SF6 LEAKS. LEAKS DETECTED SHALL BE REPAIRED WITHIN FIVE DAYS OF DISCOVERY; REPAIRS DOCUMENTED AND ASSOCIATED REPAIR RECORDS MAINTAINED	0		Sulfur Hexafluoride		0			OTHER CASE-BY-CASE	SF6 EMISSIONS FROM THE CIRCUIT BREAKERS SHALL BE CALCULATED USING A MANUFACTURER PROVIDED LEAK RATE, THE METHODOLOGY IN 40 CFR 98, SUBPART DD AND ASSUMING 8,760 HOURS PER YEAR OF OPERATION
MD-0045	MATTAWOMAN ENERGY CENTER	MD	PSC CASE. NO. 9330	11/13/2015	CIRCUIT BREAKERS	GHG BACT FOR THE CIRCUIT BREAKERS SHALL BE INSTALLATION OF STATE-OF-THE-ART CIRCUIT BREAKERS THAT ARE DESIGNED TO MEET ANSI C37.013 OR EQUIVALENT TO DETECT AND MINIMIZE SF6 LEAKS. LEAKS DETECTED SHALL BE REPAIRED WITHIN FIVE DAYS OF DISCOVERY; REPAIRS DOCUMENTED AND ASSOCIATED REPAIR RECORDS MAINTAINED	0		Carbon Dioxide Equivalent (CO2e)	GHG BACT FOR THE CIRCUIT BREAKERS SHALL BE INSTALLATION OF STATE-OF-THE-ART CIRCUIT BREAKERS THAT ARE DESIGNED TO MEET ANSI C37.013 OR EQUIVALENT TO DETECT AND MINIMIZE SF6 LEAKS	0			BACT-PSD	THE GHG EMISSIONS FROM THE CIRCUIT BREAKERS SHALL BE LIMITED TO MEET THE FACILITY-WIDE GHG EMISSIONS LIMIT. THE TOTAL GHG EMISSIONS FROM THE CIRCUIT BREAKERS SHALL BE PRESENTED ON A CO2E BASIS
PA-0309	LACKAWANNA ENERGY CTR/JESSUP	PA	35-00069A	12/23/2015	Circuit breakers with SF6	The circuit breakers at the facility shall be state-of-the-art sealed enclosed-pressure circuit breakers equipped with low-pressure alarms and a low-pressure lockout where the alarms are triggered when 10% of the sulfur hexafluoride (SF6) (by weight) has escaped.	0		Sulfur Hexafluoride	low pressure alarms and low pressure lockout system	6	LB/12MO	ANY 12 CONSECUTIVE MONTH PERIOD	BACT-PSD	BACT requirements of 40 CFR Part 52.21, 25 PA Code Section 127.1 and 127.12
PA-0309	LACKAWANNA ENERGY CTR/JESSUP	PA	35-00069A	12/23/2015	Circuit breakers with SF6	The circuit breakers at the facility shall be state-of-the-art sealed enclosed-pressure circuit breakers equipped with low-pressure alarms and a low-pressure lockout where the alarms are triggered when 10% of the sulfur hexafluoride (SF6) (by weight) has escaped.	0		Carbon Dioxide Equivalent (CO2e)		79.8	TONS	ANY 12 CONSECUTIVE MONTH PERIOD	BACT-PSD	BACT requirements of 40 CFR Part 52.21, 25 PA Code Section 127.1 and 127.12
VA-0325	GREENSVILLE POWER STATION	VA	52525	6/17/2016	CIRCUIT BREAKERS (3)		0		Carbon Dioxide Equivalent (CO2e)	Enclosed pressure type breaker and leak detector	19	T/YR		N/A	
VA-0325	GREENSVILLE POWER STATION	VA	52525	6/17/2016	CIRCUIT BREAKERS (11)		0		Carbon Dioxide Equivalent (CO2e)	Enclosed pressure type breaker and leak detection	1032	T/YR		N/A	
VA-0328	C4GT, LLC	VA	52588	4/26/2018	Circuit Breakers - 6	Quantity 6 Annual leakage rate	0.5	%	Carbon Dioxide Equivalent (CO2e)	Enclosed-pressure design with low-pressure detection system (with alarm).	0			BACT-PSD	
VA-0332	CHICKAHOMINY POWER LLC	VA	52610-1	6/24/2019	Circuit Breakers	Total capacity of 22,800 lbs of SF6 Annual Leakage Rate	0.5	%	Carbon Dioxide Equivalent (CO2e)	Enclosed-pressure design with low-pressure detection system (with alarm).	0			BACT-PSD	tracking total quantity of SF6 added to circuit breakers in calendar year
WI-0300	NEMADJI TRAIL ENERGY CENTER	WI	18-MMC-168	9/1/2020	Low-Side Generator Enclosed Pressure SF6 Circuit Breakers (F03)	SF6 Containing Equipment: Three 345-kilovolt (kV) and Two 19-kV low-side generator enclosed pressure SF6 circuit breakers with a guaranteed loss rate of 0.5 percent by weight or less by year	0		Carbon Dioxide Equivalent (CO2e)		0.5	% BY WEIGHT/YEAR		BACT-PSD	Circuit breakers containing SF6 shall be pressurized and have a manufacturer guaranteed loss rate not to exceed 0.5%, by weight, per year; and must comply with the leak monitoring program contained in section in permit.

APPENDIX D PSD AIR DISPERSION MODELING PROTOCOL

August 2025

AIR QUALITY IMPACT ASSESSMENT PROTOCOL

*In Support of the
Prevention of Significant Deterioration
Air Permit Application*

*Evergy, Inc
Mullin Creek Generating Station (Preliminary Name)
Barnard, Nodaway County, Missouri*

Submitted To:
*Department of Natural Resources
Air Pollution Control Program
Permit Section
P.O. Box 176
Jefferson City, Missouri 65102-0176*

*PROJECT NUMBER:
0246593.02.02*



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APPENDICES

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1.0 PROJECT IDENTIFICATION INFORMATION

Evergy, Inc (Evergy) is submitting a Preconstruction and Prevention of Significant Deterioration (PSD) air permit application to construct a new simple cycle power plant near Barnard, Missouri, in Nodaway County. The proposed new power plant will preliminarily be referred to as the Mullin Creek Generating Station (MCGS).

POWER Engineers, Inc. has prepared this proposed Air Quality Impact Assessment (AQIA) protocol (protocol) for evaluating the air quality impacts resulting from the proposed MCGS following written methodologies and procedures of the Missouri Department of Natural Resources (MDNR) and the United States Environmental Protection Agency (USEPA).

Applicant:	Evergy, Inc
Facility:	Mullin Creek Generating Station
Facility Air Permit Number:	TBD
Nearest City:	Barnard
County in which Plant is Located:	Nodaway County
Applicant's Modeler:	POWER Engineers, Inc.

2.0 INSTALLATION DESCRIPTION

Evergy will submit an air permit application for the proposed energy generation facility which will include detailed information of the proposed MCGS.

An AQIA will be conducted to demonstrate that emissions associated with this project will not cause or contribute to an exceedance of the National Ambient Air Quality Standards (NAAQS) or consumption of the PSD increments. Impacts from the proposed project will be evaluated to ensure that they will not cause or contribute to adverse health effects or effects with respect to vegetation or corrosion. Additionally, impacts from the proposed project will be evaluated to ensure that they will not cause or contribute to adverse effects with respect to growth, visibility, and soils.

2.1 Installation and Project Description

Evergy is proposing to build a new simple cycle power plant near Barnard, Missouri, in Nodaway County. An area map showing the location of the proposed MCGS is provided as Appendix A. As shown in the Area Map, the MCGS will be constructed in a remote area in Nodaway County.

The proposed MCGS facility will consist of two combustion turbines.

The power generation equipment is two Mitsubishi Model M501JAC simple cycle combustion turbines (SCCT) that can burn either natural gas or ultra-low sulfur diesel (ULSD). Proposed emission controls for the SCCTs include an aqueous ammonia-based Selective Catalytic Reduction system to reduce nitrogen oxides (NO_x) emissions and a catalytic oxidation unit to reduce carbon monoxide (CO) and volatile organic compounds (VOC) emissions. The emission control equipment and system design components proposed for the SCCT meet PSD Best Available Control Technology requirements.

This includes three natural gas-fired fuel gas heaters (only two in operation at a time) to heat the natural gas fuel fed to each SCCT; diesel storage tanks for the SCCTs, two diesel-fired internal combustion engines in support of emergency standby power generation, one emergency fire pump, and the diesel storage tanks for these engines. The emission control and/or design components of the ancillary emission sources at the MCGS meet PSD Best Available Control Technology requirements.

2.2 Installation Locational Data

All locational data is included in Zone 15 of the Universal Transverse Mercator (UTM) geographic coordinate system. The North American Datum 83 (NAD 83) is the geodetic reference system used to determine all UTM coordinates at the facility.

The center point and fence line corners are available in Table 2-1 below.

TABLE 2-1 FACILITY COORDINATES

COORDINATE	EASTING (X) (m)	NORTHING (Y) (m)
Center of Facility	340737.500	4454353.000
Fence Line Corner – 1	340258.296	4454544.205
Fence Line Corner – 2	340240.555	4454126.671
Fence Line Corner – 3	341037.573	4454098.477
Fence Line Corner – 4	341038.098	4454134.956
Fence Line Corner – 5	341022.713	4454155.212
Fence Line Corner – 6	340988.498	4454155.746
Fence Line Corner – 7	340989.334	4454176.094
Fence Line Corner – 8	340995.34	4454175.938
Fence Line Corner – 9	340995.849	4454192.005
Fence Line Corner – 10	341023.517	4454191.472
Fence Line Corner – 11	341039.51	4454208.428
Fence Line Corner – 12	341045.033	4454458.188
Fence Line Corner – 13	341036.717	4454468.892
Fence Line Corner – 14	341037.836	4454504.416

2.3 Modeled Emission Rates and Limits

Nodaway County is currently classified as in attainment/unclassifiable with all NAAQS.

The preliminary facility-wide emissions for criteria pollutants from the proposed MCGS are available in Table 2-2 and include emissions from the proposed SCCTs, fuel gas heaters, emergency generators, and emergency fire pump, for both the natural gas only and the diesel only scenarios. These values are preliminary and final potential-to-emit (PTE) calculations for all PSD pollutants will be provided in the final PSD application. Additionally, an initial assessment summary for each PSD-regulated pollutant using Significant Emission Rates is also included in Table 2-2.

TABLE 2-2 PSD SIGNIFICANCE SUMMARY

POLLUTANT	PRELIMINARY PTE (tpy)	SER (tpy)	TRIGGERS PSD REVIEW
Nitrogen oxides (NO _x , as NO ₂ and as an ozone precursor)	888.8	40	Yes
Carbon monoxide (CO)	5,199.70	100	Yes
Sulfur dioxide (SO ₂)	56.7	40	Yes
Volatile organic compounds (VOC)	1,728.71	40	Yes
Particulate matter (PM)	429.9	25	Yes
PM with a diameter of less than 10 microns (PM ₁₀)	429.9	15	Yes
PM with a diameter of less than 2.5 microns (PM _{2.5})	429.9	10	Yes
Sulfuric Acid Mist (H ₂ SO ₄)	97.4	7	Yes

Notes: PTE = potential to emit; tpy = tons per year; SER = Significant Emission Rates; PSD = Prevention of Significant Deterioration

The preliminary emission rates for criteria pollutants to be included in the AQIA are presented in Table 2-3. As discussed in Section 2-1, the two SCCTs can operate using either natural gas or ULSD. The dispersion modeling analysis will be conducted for two scenarios: one using natural gas, and the other using ULSD. Table 2-3 includes emission rates for both operating scenarios.

Under the federal New Source Review program, the MCGS project will be a major source that requires PSD review for the New Source Review-regulated pollutants NO_x, CO, VOC, particulate matter (PM₁₀ and PM_{2.5}), sulfur dioxide (SO₂), and greenhouse gases (GHG – expressed as CO₂e). To satisfy PSD review requirements, NO₂, CO, PM₁₀, PM_{2.5}, and SO₂ will be evaluated for comparison with the NAAQS and PSD increment. The project has net emission increases of NO_x and VOC that are each greater than 100 tons per year. Therefore, a NAAQS analysis and the gathering of air quality (monitoring) data is required for ozone (40 Code of Federal Regulations [CFR] 51.166(i)(5)(i)(f)). Please see Section 3.5 for information on the proposed monitor.

TABLE 2-3 PRELIMINARY POINT SOURCE MODELING EMISSION RATES

POINT SOURCE	NO _x (lb/hr)	NO _x (tpy)	CO (lb/hr)	CO (tpy)	PM ₁₀ /PM _{2.5} (lb/hr)	PM ₁₀ /PM _{2.5} (tpy)	SO ₂ (lb/hr)	SO ₂ (tpy)
SCCT1 (Normal) [Natural Gas]	44.0	244.0	21.0	400.0	20.0	87.6	6.4	27.8
SCCT1 (MECL) [Natural Gas]	25.0	---	13.0	---	12.5	---	3.7	---
SCCT1 (Startup) [Natural Gas]	180.5	---	859.8	---	---	---	---	---
SCCT1 (Normal) [Fuel Oil]	77.0	440.9	56.0	2,597.3	49.0	214.6	6.0	28.3
SCCT1 (MECL) [Fuel Oil]	53.0	---	39.0	---	34.8	---	4.4	---
SCCT1 (Startup) [Fuel Oil]	254.1	---	4,810.3	---	---	---	---	---
Fuel Gas Heater 1	0.5	2.1	0.5	2.1	0.07	0.3	0.02	0.08
Emergency Generator 1	18.3	0.9	7.7	0.4	0.7	0.03	0.02	0.001
Firepump	2.8	0.1	2.5	0.1	0.1	0.006	0.003	0.0002
SCCT2 (Normal) [Natural Gas]	44.0	244.0	21.0	400.0	20.0	87.6	6.4	27.8
SCCT2 (MECL) [Natural Gas]	25.0	---	13.0	---	12.5	---	3.7	---
SCCT2 (Startup) [Natural Gas]	180.5	---	859.8	---	---	---	---	---
SCCT2 (Normal) [Fuel Oil]	77.0	440.9	56.0	2,597.3	49.0	214.6	6.0	28.3
SCCT2 (MECL) [Fuel Oil]	53.0	---	39.0	---	34.8	---	2.4	---
SCCT2 (Startup) [Fuel Oil]	254.1	---	4,810.3	---	---	---	---	---
Fuel Gas Heater 2	0.5	2.1	0.5	2.1	0.07	0.3	0.02	0.08
Emergency Generator 2	18.3	0.9	7.7	0.4	0.7	0.03	0.02	0.001

Note: NO_x – nitrogen oxides; CO – carbon monoxide; PM₁₀ – particulate matter with a diameter of less than 10 microns; PM_{2.5} – particulate matter with a diameter of less than 2.5 microns; SO₂ – sulfur dioxide; lb/hr – pounds per hour; tpy – tons per year; SCCT – simple cycle combustion turbine; MECL – minimum emissions compliant load.

Note: Annual average hourly emissions were utilized for the Emergency Generators and the Firepump in the 1-hour NO₂ and SO₂ analyses (based on maximum annual operation of 100 hours/year).

Note: For 3-hour, 8-hour, and 24-hour averaging periods, hourly emissions modeled for the Emergency Generators and the Firepump corresponds to a maximum of 30 minutes of testing emissions.

2.3.1 PM_{2.5} Emissions

Guidance from the 2018 USEPA Regional, State, and Local Modelers' Workshop in Boston, Massachusetts, June 5, 2018, will be followed in the modeling of PM_{2.5} emissions. The secondary PM_{2.5} impacts will be estimated using guidance from the USEPA's *Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Demonstration Tool for Ozone and PM_{2.5} under the PSD Permitting Program*, December 2, 2016, and *Guidance on the Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Demonstration Tool for Ozone and PM_{2.5} under the PSD Permitting Program*, April 30, 2019. MERPs derived using the USEPA's photochemical modeling results for hypothetical sources (intended to support Class II NAAQS Tier 1 demonstrations) located in Missouri will be used to estimate the air quality PM_{2.5} impacts associated with project-related emissions of NO_x and SO₂. These conservative secondary PM_{2.5} impact estimates will be included in the preliminary impact determination, full impact NAAQS, and full impact PSD increment consumption analyses.

2.3.2 Ozone Emissions

Guidance from the 2018 USEPA Regional, State, and Local Modelers' Workshop in Boston, Massachusetts, June 5, 2018, will be followed in the modeling of ozone (O₃) emissions. The ozone impacts will be estimated using guidance the USEPA's *Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Demonstration Tool for Ozone and PM_{2.5} under the PSD Permitting Program*, December 2, 2016 and *Guidance on the Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Demonstration Tool for Ozone and PM_{2.5} under the PSD Permitting Program*, April 30, 2019. MERPs derived using the USEPA's photochemical modeling results for hypothetical sources (intended to support Class II NAAQS Tier 1 demonstrations) located in Missouri will be used to estimate the air quality O₃ impacts associated with project-related emissions of NO_x and VOCs. These conservative O₃ impact estimates will be included in the preliminary impact determination and full impact NAAQS analyses.

2.3.3 Hazardous Air Pollutant Emissions

Guidance from the MDNR indicates that if the project's potential Hazardous Air Pollutant (HAP) emissions exceed the Screening Modeling Action Levels (SMALs) then a demonstration of compliance with the Risk Assessment Levels (RALs) must be completed. PTE emissions included in Table 2-4 account for emissions from all proposed sources at the facility. Forty-one HAPs were analyzed, resulting in ten HAPs requiring an RAL review that with includes various operating scenarios and averaging times for each pollutant.

TABLE 2-4 HAZARDOUS AIR POLLUTANT SCREENING MODELING ACTION LEVELS ANALYSIS

HAP	SMAL (tpy)	PRELIMINARY PTE (tpy)	TRIGGERS RAL REVIEW
1,3-Butadiene	0.07	0.48	Yes
Acrolein	0.04	0.23	Yes
Arsenic	0.005	0.33	Yes
Beryllium	0.008	0.01	Yes
Cadmium	0.01	0.14	Yes
Formaldehyde	2	3.80	Yes
Lead	0.01	0.33	Yes
Mercury	0.01	0.04	Yes
PAH	0.01	1.20	Yes
Selenium	0.1	0.75	Yes

Notes: SMAL = Screening Modeling Action Level; tpy = tons per year; PTE = Potential to Emit; RAL = Risk Assessment Level

2.3.4 Operating Load Scenarios

To ensure compliance at all normal operating modes modeling will be performed for various modeling scenarios to ensure that the worst-case modeling parameters are modeled from both an emissions perspective (emission rate) and from a dispersion characteristic perspective (stack velocity). The following operating scenarios will be included in the final modeling analysis, and Everbly believes they provide coverage over all future operating scenarios. Each will be applied to a natural gas only scenario and a fuel oil only scenario.

Startup: Startup of the SCCTs is not a steady-state operating scenario and the SCCTs will not be operated for long periods of time in “start-up” mode. Startup will typically last for approximately 32 minutes on natural gas and 49 minutes on fuel oil. The NO_x and CO startup/shutdown emissions will be conservatively modeled using the maximum expected hourly startup emission rate to ensure compliance with the short-term air quality standards for these pollutants. This maximum hourly rate will be modeled assuming startup operations occur every hour of the year.

Minimum Emission Compliant Load (MECL): This is minimum load that the unit will be operated at for extended periods. This is the worst-case (lowest) stack velocity for which the unit will operate at for a continuous 1-hour period during normal operation.

Maximum Load: This is the maximum load the unit can operate and has the highest emission rate. To be conservative the modeling assumes that the maximum load can be achieved 8,760 hours per year. This is the basis for all PTE calculations which will be included in the PSD application.

Modeling source groups will be used to obtain conservative estimates for the emission scenarios discussed above. Table 2-5 describes the source groups used for preliminary and full impact modeling for each pollutant.

TABLE 2-5 SOURCE GROUPS

POINT SOURCE	MODEL ID	NATURAL GAS			FUEL OIL		
		NORMAL	MECL	STARTUP	NORMAL	MECL	STARTUP
SCCT1 (Normal) [Natural Gas]	EP1	X					
SCCT1 (MECL) [Natural Gas]	EP1a		X				
SCCT1 (Startup) [Natural Gas]	EP1b			X			
SCCT1 (Normal) [Fuel Oil]	EP1c				X		
SCCT1 (MECL) [Fuel Oil]	EP1d					X	
SCCT1 (Startup) [Fuel Oil]	EP1e						X
Fuel Gas Heater 1	EP3a	X	X	X			
Emergency Generator 1	EP4	X	X	X	X	X	X
Firepump 1	EP5	X	X	X	X	X	X
SCCT2 (Normal) [Natural Gas]	EP6	X					
SCCT2 (MECL) [Natural Gas]	EP6a		X				
SCCT2 (Startup) [Natural Gas]	EP6b			X			
SCCT2 (Normal) [Fuel Oil]	EP6c				X		
SCCT2 (MECL) [Fuel Oil]	EP6d					X	
SCCT2 (Startup) [Fuel Oil]	EP6e						X
Fuel Gas Heater 2	EP7a	X	X	X			
Emergency Generator 2	EP8	X	X	X	X	X	X

Note: SCCT – simple cycle combustion turbine; MECL – minimum emissions compliant load

2.3.5 Emergency Equipment Emissions

Diesel-fired emergency generator engines and a diesel-fired emergency fire water pump will be included in the proposed application. Emissions associated with the emergency readiness testing of the emergency engines and the emergency fire water pump will be modeled.

Everbly plans to test the proposed emergency engines and the emergency fire water pump for a period of 30 minutes per month. The modeling of the proposed equipment will include a maximum of 30 minutes of testing emissions for the following modeled averaging periods: 3-hour, 8-hour, and 24-hour.

The USEPA's *Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO₂ National Ambient Air Quality Standard; March 1, 2011* states that compliance demonstrations for the 1-hour NO₂ and SO₂ NAAQS be based on emission scenarios that can logically be assumed to be relatively continuous or which occur frequently enough to contribute significantly to the annual distribution of daily maximum 1-hour concentrations. As such, the 1-hour NO₂ associated with these intermittent sources will be modeled per USEPA guidelines, multiplying the maximum hourly emission rate by the ratio of the proposed hours per year and total available hours per year. Although expected operations correspond to each proposed engine being tested a total of six hours per year, the proposed modeling includes a conservative annual emissions estimate corresponding to 100 hours per year. Therefore, the modeling of 1-hour NO₂ emissions associated with the intermittent sources will conservatively be modeled using these higher annual emission assumptions. As previously described, Everbly typically tests a single engine at a time. However, the modeling of emergency readiness testing will conservatively be conducted assuming both diesel engines are tested simultaneously.

2.3.6 NO₂ Modeling

Following guidance included in the USEPA's *Guideline on Air Quality Models; Appendix W to 40 CFR Part 51; January 17, 2017*; the Tier 2 default Ambient Ratio Method 2 NO_x-to-NO₂ conversion will be utilized within the AERMOD model. The Appendix W default minimum ambient NO₂/NO_x ratio of 0.5 and the maximum ambient ratio of 0.9 will be used.

2.4 Source Characterization and Facility Layout

Each source to be included in the air dispersion modeling is classified as a point source. There are no volume sources or area sources in the AQIA.

2.4.1 Point Source Emission Releases

Preliminary exhaust assumptions for the proposed project's air emission sources are listed in Table 2-6 and Appendix C. Final exhaust values will be provided in the AQIA. Each source will be modeled as a vertical stack point source at its physical release height or at the Building Profile Input Program (BPIPPRM)-calculated Good Engineering Practice stack height, whichever is lower.

TABLE 2-6 PRELIMINARY POINT SOURCE MODELING PARAMETERS

POINT SOURCE	EASTING (X) (m)	NORTHING (Y) (m)	STACK HEIGHT (ft)	STACK DIAMETER (ft)	EXIT TEMPERATURE (F)	EXIT VELOCITY (fps)
SCCT 1 (Normal)	340740.013	4454335.638	180	36.3	799.4	91.9
SCCT 1 (MECL)	340740.013	4454335.638	180	36.3	746.1	75.9
SCCT 1 (Startup)	340740.013	4454335.638	180	36.3	479.7	55.1
Fuel Gas Heater 1	340815.073	4454475.660	15	10	550.0	55.0
Emergency Generator 1	340720.432	4454461.589	14.5	1.5	935.0	248.1
Firepump	340729.965	4454230.943	5	0.5	1030.0	221.6
SCCT 2 (Normal)	340659.883	4454336.856	180	36.3	799.4	91.9
SCCT 2 (MECL)	340659.883	4454336.856	180	36.3	746.1	75.9
SCCT 2 (Startup)	340659.883	4454336.856	180	36.3	479.7	55.1
Fuel Gas Heater 2	340814.021	4454468.130	15	10	550.0	55.0
Emergency Generator 2	340641.471	4454462.668	14.5	1.5	935.0	248.1

Note: SCCT – combined cycle combustion turbine; m – meter; ft – feet; °F – degrees Fahrenheit; fps – feet per second

2.4.2 Facility Layout

A copy of the plot plan is provided as Appendix B. The plot plan includes the names and locations of emission points and structures relative to the MCGS' property.

Building downwash effects will be included in the modeling based on guidance provided in the USEPA's *User's Guide to the Building Profile Input Program, October 1993*. The USEPA currently requires that all building downwash be determined using the BPIPPRM subroutine. Providence/Oris LLC's "BEE-Line BEEST for Windows" will be used for calculating downwash

parameters for this analysis. This program includes downwash software which uses the latest BPIPPRM subroutine (version 04274) in its calculations.

There are five buildings being proposed at the MCGS:

- » Two Turbine Buildings
- » Air Cooled Condenser Building
- » Administration Building
- » Water Treatment Building

There are also five tanks being proposed at the MCGS that also contribute to downwash effects:

- » Two Demineralized Water Storage Tanks
- » One Service Firewater Storage Tank
- » Two Diesel Storage Tanks

Information regarding the MCGS' proposed structures will be entered into the BPIPPRM-based software program. The downwash parameter values will be calculated for each point source by the software program and inserted into the AERMOD input files in the appropriate locations and formats. Downwash summary tables created by the BPIPPRM subroutines will be included as part of the electronic files included in the AQIA submitted to the MDNR.

3.0 CLASS II ANALYSIS

3.1 Model Selection and Pollutants Under Review

The American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD), version 24142, will be used to perform the dispersion modeling in this AQIA. AERMOD is the latest generation of atmospheric dispersion models suitable for industrial sources and is the model preferred by the USEPA for such applications. To facilitate the running of AERMOD, the Providence/ORIS, LLC's "BEE-Line BEEST for Windows" graphic user interface (version 12.13a) will be used.

Pollutants which will be included in the AQIA are discussed in Section 2.3. Applicable standards, limits and screening levels are summarized in the following sections.

3.1.1 Preliminary Impact Determination

3.1.1.1 Modeled Emission Rates for Precursors Analysis

As described in Sections 2.3.1 and 2.3.2, a Tier 1 approach will be used to estimate the secondary PM_{2.5} and O₃ impacts associated with the precursor emissions. The calculation will be provided in the AQIA. The estimated secondary PM_{2.5} and O₃ analysis results will be summarized in a table like Table 3-1.

TABLE 3-1 MERP ANALYSIS RESULTS

POLLUTANT	AVERAGING PERIOD	ESTIMATED MERP CONCENTRATION (µg/m ³)
PM _{2.5}	24-hour	TBD
	Annual	TBD
O ₃	8-hour	TBD

These estimated impacts will be included in the SIL analysis and in applicable full impact analyses.

3.1.1.2 Significant Impact Level Analysis

This modeling will be conducted for proposed increases in emissions to determine whether full impact modeling is required and, if so, to determine the area of impact. The predicted ground-level concentrations and SILs are summarized in Table 3-2.

TABLE 3-2 SIL ANALYSIS RESULTS

POLLUTANT	AVERAGING PERIOD	MAXIMUM PREDICTED CONCENTRATIONS AT EACH RECEPTOR (ug/m ³)	SIGNIFICANT IMPACT LEVEL (ug/m ³)
CO	1-Hour	1 st High (Individual Year in a 5 Year Period)	TBD
	8-Hour	1 st High (Individual Year in a 5 Year Period)	TBD
NO ₂	1-Hour	Highest 5-Year Average of the H1H	TBD
	Annual	1 st High (Individual Year in a 5 Year Period)	TBD
SO ₂	1-Hour	Highest 5-Year Average of the H1H	TBD
	3-Hour	1 st High (Individual Year in a 5 Year Period)	TBD
PM ₁₀	24-Hour	1 st High (Individual Year in a 5 Year Period)	TBD
PM ₁₀ (Increment)	Annual	1 st High (Individual Year in a 5 Year Period)	TBD
PM _{2.5} (Increment)	24-Hour	1 st High (Individual Year in a 5 Year Period)	TBD *
	Annual	1 st High (Individual Year in a 5 Year Period)	TBD *
PM _{2.5} (NAAQS)	24-Hour	Highest 5-Year Average of the H1H	TBD *
	Annual	Highest 5-Year Average of the H1H	TBD *
O ₃	8-Hour	Conservative Estimate	TBD **

* Includes estimated secondary PM_{2.5} impact from Section 10.1.1 MERP analysis

** Estimated O₃ impact from Section 10.1.1 MERP analysis

Notes: ug/m³ = micrograms per cubic meter; ppb = parts per billion

The results of the Significant Impact Level (SIL) modeling analyses will be included in the final AQIA.

3.1.1.3 PSD Pre-Application Analysis

To determine if a full impact (refined) modeling analysis and/or pre-construction ambient air monitoring is necessary, a preliminary modeling analysis will be completed. The results will be compared to the SIL values and Significant Monitoring Concentration (SMC) thresholds.

If the resulting maximum concentration is below the SIL threshold, no further analysis will be required for that pollutant and averaging time. If the resulting maximum concentration exceeds the SIL threshold, then full impact modeling will be conducted for that pollutant and averaging time.

If the resulting maximum concentration is below the pre-construction SMC threshold, then the facility is not required to conduct pre-construction monitoring. If a pollutant exceeds the SMC threshold, the facility may be allowed, with approval by MDNR, to use representative monitoring data from state monitors in lieu of pre-construction ambient monitoring data. Please see Section 3.5 for additional discussion.

The predicted ground-level concentrations and SMC will be summarized in Table 3-3.

TABLE 3-3 PSD PRE-CONSTRUCTION MONITORING REQUIREMENT ANALYSIS RESULTS

POLLUTANT	AVERAGING PERIOD	MAXIMUM PREDICTED CONCENTRATIONS AT EACH RECEPTOR		SIGNIFICANT MONITORING CONCENTRATION (µg/m³)
		(ug/m³)		
CO	8-Hour	1 st High (Individual Year in a 5 Year Period)	TBD	575
NO ₂	Annual	1 st High (Individual Year in a 5 Year Period)	TBD	14
SO ₂	24-Hour	1 st High (Individual Year in a 5 Year Period)	TBD	13
PM	24-Hour	1 st High (Individual Year in a 5 Year Period)	TBD	10
Lead	3-Month	1 st High (Individual Year in a 5 Year Period)	TBD	0.1
Beryllium	24-Hour	1 st High (Individual Year in a 5 Year Period)	TBD	0.001
Mercury	24-Hour	1 st High (Individual Year in a 5 Year Period)	TBD	0.25

The predicted concentrations for all pollutants in Table 3-4 are expected to be less than the SMC. Pre-construction monitoring data is not required for these pollutants.

3.1.2 Full Impact Analysis

3.1.2.1 NAAQS Analysis

Based on the results of the draft preliminary impact determination, full impact NAAQS modeling analyses are expected not to be required for CO, annual NO₂, SO₂, PM₁₀, and PM_{2.5}.

The form of the predicted ground-level concentrations from the NAAQS modeling, the form of the background concentrations, and the NAAQS for all criteria pollutants are summarized in Table 3-4. The predicted ground-level concentrations from the NAAQS modeling, the background concentrations for the project area, and the sum of the two values will be summarized in Table 3-5.

The inventory of off-site interactive sources that are included in the full impacts analysis are discussed in section 3.4. The total impacts are compared to the NAAQS.

TABLE 3-4 NAAQS ANALYSIS – FORM OF MODELING RESULTS AND BACKGROUND CONCENTRATION

POLLUTANT	AVERAGING PERIOD	MAXIMUM PREDICTED CONCENTRATIONS AT EACH RECEPTOR (µg/m³)	BACKGROUND CONCENTRATION (µg/m³)	NAAQS (µg/m³)
NO ₂	1-Hour	5-Year Average of 98 th Percentiles of the Daily 1-Hour Maximums	3-Year Average of 98 th Percentiles of the Daily 1-Hour Maximums	188
	Annual	1 st High (Individual Year in a 5 Year Period)	1 st High, Recent Year	100
CO	1-Hour	2 nd High (Individual Year in a 5 Year Period)	2 nd High, Recent Year	40,000
	8-Hour	2 nd High (Individual Year in a 5 Year Period)	2 nd High, Recent Year	10,000
SO ₂	1-Hour	5-Year Average of 99 th Percentiles of the Daily 1-Hour Maximums	3-Year Average of 99 th Percentiles of the Daily 1-Hour Maximums	196
	3-Hour	2 nd High (Individual Year over 5 Years)	2 nd High, Recent Year	1,300
PM ₁₀	24-Hour	6 th High (Individual Year over 5 Years)	3-Year Average of 2 nd Highs	150
PM _{2.5}	24-Hour	5-Year Average of 98 th Percentiles of the Daily Maximums	3-Year Average of 98 th Percentiles of the Daily Maximums	35
	Annual	5-Year Average of 1 st Highs	3-Year Average of 1 st Highs	9
O ₃	8-Hour	Conservative Maximum (from MERP analysis)	3-Year Average of the 4 th Highest Daily 8-Hour Maximums	70 ppb
Lead	Rolling 3-Month Average	1 st High (Individual Year in a 5 Year Period)	Maximum Mean of 3 Consecutive Monthly Means in a 3-Year Period	0.15

TABLE 3-5 NAAQS ANALYSIS RESULTS

POLLUTANT	AVERAGING PERIOD	MAXIMUM PREDICTED CONCENTRATIONS (µg/m³)	BACKGROUND CONCENTRATION (µg/m³)	TOTAL (µg/m³)	NAAQS (µg/m³)
NO ₂	1-Hour	TBD	87.7	TBD	188

The results of the full impact NAAQS modeling analyses will be included in the final AQIA.

3.1.2.2 PSD Class II Increment Consumption Analysis

For the NO₂, CO, PM₁₀, PM_{2.5}, and SO₂ pollutants, the minor source baseline dates for Nodaway County will be triggered on the date when the complete application for this project is submitted.

Based on the results of the draft preliminary impact determination, a PSD increment consumption modeling analysis is only expected for 24-hour PM_{2.5}.

The predicted ground-level concentrations and PSD increment consumption limits will be summarized in Table 3-6.

TABLE 3-6 PSD INCREMENT CONSUMPTION ANALYSIS RESULTS

POLLUTANT	AVERAGING PERIOD	MAXIMUM PREDICTED CONCENTRATIONS AT EACH RECEPTOR ($\mu\text{g}/\text{m}^3$)	PSD INCREMENT CONSUMPTION LIMIT ($\mu\text{g}/\text{m}^3$)
PM _{2.5}	24-Hour	TBD *	9
	Annual	TBD *	4

* Includes estimated secondary PM_{2.5} impact from Section 10.1.1 MERP analysis

3.1.3 Missouri Ambient Air Quality Standards

Missouri has specific ambient air quality standards for hydrogen sulfide, sulfuric acid, and fluoride. An impacts analysis is required for these pollutants if the project emission rates exceed their respective de minimis thresholds included in the 10 CSR 10-6.020 (3) (A) Table 1.

The proposed project will emit emissions of sulfuric acid. There are no proposed emissions of hydrogen sulfide and fluoride associated with MCGS.

The proposed sulfuric acid emissions exceed the de minimis thresholds included in the 10 CSR 10-6.020 (3) (A) Table 1. Therefore, an impacts analysis will be conducted for sulfuric acid to demonstrate compliance with the Missouri Ambient Air Quality Standards (MOAQS).

The predicted ground-level concentrations and MOAQS will be summarized in Table 3-7 below.

TABLE 3-7 MISSOURI AIR QUALITY STANDARDS, MOAQS

POLLUTANT	AVERAGING TIME	MAXIMUM PREDICTED CONCENTRATIONS ($\mu\text{g}/\text{m}^3$)	MOAQS ($\mu\text{g}/\text{m}^3$)
Sulfuric Acid	1-hour	TBD	30.0
	24-hour	TBD	10.0

3.1.4 Hazardous Air Pollutant Analysis

Based on the results of the HAP emission analysis, 10 pollutants triggered an RAL review. The predicted ground-level concentrations and the RAL limits will be summarized in Table 3-8.

TABLE 3-8 MISSOURI RISK ASSESSMENT LEVELS, RALS

HAP	MAXIMUM PREDICTED CONCENTRATIONS ($\mu\text{g}/\text{m}^3$)	8 HOUR RAL ($\mu\text{g}/\text{m}^3$)	24 HOUR RAL ($\mu\text{g}/\text{m}^3$)	ANNUAL RAL ($\mu\text{g}/\text{m}^3$)	10 X ANNUAL RAL ($\mu\text{g}/\text{m}^3$)
1,3-Butadiene	TBD	---	1.2	0.003	0.03
Acrolein	TBD	---	6.9	0.02	---
Arsenic	TBD	0.015	0.015	0.0002	0.002
Beryllium	TBD	0.000356	0.02	0.0004	0.004
Cadmium	TBD	0.00889	0.006	0.001	0.01
Formaldehyde	TBD	---	9.8	0.08	0.8
Lead	TBD	---	0.15 for a 3-month rolling average		0.7
Mercury	TBD	---	0.14	0.07	---
PAH	TBD	---	0.16	0.016	0.16
Selenium	TBD	---	0.54	0.54	---

3.2 Receptor Grid and Terrain Elevation

The receptor grids used in the preliminary and full impacts analyses are described in this Section. The NAD83 datum will be used for the receptor Universal Transverse Mercator coordinates. Providence/ORIS, LLC's "BEE-Line BEEST for Windows" was used to calculate the appropriate domain boundaries.

The receptor coverage utilized for the preliminary analyses will consist of the following:

- » 50-meter spaced receptors along the proposed MCGS property boundary. These receptors follow the fence line around the property.
- » 100-meter spaced receptors to a distance of 1 kilometer (km) from the proposed MCGS property boundary.
- » 250-meter spaced receptors to a distance of 2.5 km from the proposed MCGS property boundary.
- » 500-meter spaced receptors to a distance of 5 km from the proposed MCGS property boundary.
- » 1,000-meter spaced receptors to a distance of 50 km from the proposed MCGS property boundary to ensure that (1) the maximum predicted concentration is located, (2) all locations with predicted concentrations greater than the SILs were identified, and (3) that concentration gradients associated with the project-related emissions clearly decrease in magnitude outside of the areas of impact.

For the full impacts analysis, the receptor grid will be based on the above spacing but only include receptors in the Everygy significant impact area. This receptor grid is designed to capture the maximum off-property ground-level concentrations for all pollutants, operating scenarios, and review types. If the modeled concentrations predict any NAAQS or PSD Increment violations, then Everygy will provide modeling analyses to show that the project will not cause or contribute to a violation. Everygy will also provide a culpability analysis for the modeled violations.

Digital terrain data is processed using the USEPA's AERMAP program (version 24142) to calculate (interpolate) the terrain elevations and local terrain maximums of points along the receptor grid (see Section 8.0 for more information) as well as sources, buildings, and tanks onsite. Input data is comprised of 1-arc-second (approximately 30 meters) United States Geological Survey National Elevation Dataset data in GeoTIFF format.

3.3 Meteorological Data and Surface Characteristics

MDNR provided the pre-processed meteorological data for this project on May 23, 2025. The pre-processed meteorological data consisted of surface data from the St. Joseph, Missouri Rosecrans Memorial Airport meteorological station (Station ID 13993) and upper air data from the Topeka, Missouri Philip Billard Municipal Airport meteorological station (Station ID 13996). The MDNR processed the data using AERMET version 24142 and incorporated the AERMINUTE data along with the low wind speed threshold of 0.5 meters per second. The provided data is from the most recent five-year period, 2020 to 2024, and will be utilized in the preliminary SIL modeling, and full impacts NAAQS and PSD increment analyses. The meteorology data provided by the MDNR includes the ADJ_U* option from AERMET. The base elevation for the Rosecrans Memorial Airport meteorological station is 246.1 meters and the base elevation for the Topeka Philip Billard Municipal Airport meteorological station is 268.1 meters.

3.4 Background Concentrations and Interactive Source Inventories

Estimates for the current ambient air background concentrations at the proposed project site may be required for two distinct and separate purposes: (1) to demonstrate that the ambient air concentrations of PSD-significant pollutants are currently in compliance with the NAAQS and (2) for use in a full impact NAAQS modeling analysis. Based on draft Preliminary Impact Determination results, background ambient air concentration data may be required for NO₂ and PM_{2.5}. Everygy proposes to use ambient air quality data from existing air quality monitoring stations to establish representative background concentrations for these contaminants.

USEPA Guidance was followed in selecting the form of the monitored concentration for the averaging periods for NO₂, PM_{2.5}, and O₃. Everygy proposes using the data in Table 3-9 to establish representative background concentrations. Note that the draft Preliminary Impact Determination results for CO, SO₂, and PM₁₀, are less than the SIL. Therefore, ambient backgrounds are not required for full impact NAAQS modeling analysis.

- » NO₂ – Troost Air Monitoring Site (Jackson County, Missouri) (USEPA ID 29-095-0034)
- » PM_{2.5} – St. Joseph Pump Station Air Monitoring Site, Monitor 5 (Buchanan County, Missouri) (USEPA ID 29-021-0005)
- » O₃ – Savannah Air Monitoring Site, Monitor 2 (Andrew County, Missouri) (USEPA ID 29-003-0001)

The proposed MCGS location and the locations near each of the proposed monitors have similar topography. The areas surrounding each location (within several kilometers) are relatively flat. Selected monitors were also the nearest to the proposed MCGS location. The proposed NO₂ monitor (Troost, Missouri) is in Jackson County at a distance of 127 km from the proposed MCGS. The proposed PM_{2.5} monitor (St. Joseph, Missouri) is in Buchanan County at a distance of 54 km from the proposed MCGS. The proposed O₃ monitor (Savannah, Missouri) is in Andrew County at a distance of 29 km from the proposed MCGS.

When multiple monitors were available, the most conservative monitor was selected to provide a representative estimate for the background concentration at the project site.

TABLE 3-9 PROPOSED BACKGROUND CONCENTRATION

CONTAMINANT	MONITORING STATION	USEPA ID	AVERAGING PERIOD	CONCENTRATION ($\mu\text{g}/\text{m}^3$)	FORM
NO ₂	Troost – Jackson Co., Missouri	29-095-0034	1-hour	87.7	3-Year Average of 98 th Percentiles of the Daily 1-Hour Maximum 2022-2024
			Annual	30.3	1 st High, 2024
PM _{2.5}	St. Joseph Pump Station – Buchanan Co., Missouri	29-021-0005 Monitor 5	24-hour	19.0	3-Year Average of 98 th Percentiles of the Daily 1-Hour Maximum 2022-2024
			Annual	8.4	3-Year Average of Weighted Annual Mean 2022-2024
O ₃	Savannah – Andrew Co., Missouri	29-003-0001 Monitor 2	8-hour	66.3 ppb	3-Year Average of 4th High of the Daily Max 8-Hour Average 2022-2024

An inventory of off-property interactive sources for the cumulative analyses (NAAQS and PSD Class II Increment) was also requested and provided by MDNR. This inventory is expected to include permitted sources. Note that a conservative full-impact PSD increment-consumption analysis will be conducted using the off-property interactive source inventories developed for the full-impact NAAQS analysis.

3.5 Pre-construction Air Quality Monitoring

The *New Source Review Workshop Manual-Prevention of Significant Deterioration and Nonattainment Area Permitting; USEPA, Draft October 1990* (page C.16) states that continuous ambient monitoring data may be required unless "either (1) the predicted ambient impact, i.e., the highest modeled concentration for the applicable averaging time, caused by the proposed significant emissions increase (or significant net emissions increase), or (2) the existing ambient pollutant concentrations, are less than the prescribed significant monitoring value" (i.e., SMC value).

The proposed project will emit PSD-significant amounts of NO₂, PM₁₀, PM_{2.5}, SO₂, CO, and O₃ precursors. Based on the draft Preliminary Impact Determination results, a compilation of representative monitoring data may not be required for CO, SO₂, or PM₁₀. Based on the proposed net emission increases of VOC and NO_x, a compilation of representative monitoring data is required for O₃.

On January 22, 2013, the United States Court of Appeals for the District of Columbia Circuit granted a request from the USEPA to vacate and remand to the USEPA the portions of two PSD PM_{2.5} rules [40 CFR 51.166(k)(2) and 40 CFR 52.21(k)(2)] addressing select provisions of the PM_{2.5} SILs so that the USEPA could voluntarily correct an error in these provisions. The USEPA amended its regulations and removed the vacated PM_{2.5} SILs effective December 9, 2013 – requiring all applicants to compile PM_{2.5} monitoring data.

Everbry believes the background ambient air concentration data in Table 3-9 will provide will offer conservative estimates of the background PM_{2.5} and O₃ concentrations. Therefore, Everbry proposes to utilize that monitoring data in lieu of performing pre-construction monitoring for PM_{2.5} and O₃.

4.0 CLASS I ANALYSIS

The Federal Land Managers' Air Quality Related Values Work Group Phase I report requires all facilities within 100 km of a Class I area to develop a modeling protocol. There are two Class I areas in Missouri, both located over 100 km from the MCGS. The Hercules-Glades Wilderness Area (over 400 km away) and the Mingo Wildlife Refuge (over 500 km away). Additionally, there are no Class I areas in Iowa, Nebraska, or Kansas, states that are within 100 km of the MCGS. As such, no specific Class I analysis and subsequent modeling protocol will be completed. Instead, please see sections 3 and 5 for Class II and Additional Impact Analyses.

5.0 ADDITIONAL IMPACT ANALYSES

Additional impact analyses for criteria pollutants subject to PSD and which will be emitted by the proposed sources will evaluate the impacts of air, ground, and water pollution on soils, vegetation, and visibility caused by emissions and from growth associated with the facility.

Impacts from the proposed project will not cause or contribute to adverse effects with respect to visibility, soils, and growth.

5.1 Growth

An in-depth growth analysis is only required if the project would result in a significant shift in population and associated activity into the area (i.e., a population increase on the order of thousands of people). Further analysis will be provided in the final PSD Application.

5.2 Soils and Vegetation Analysis

The emissions from the proposed project are not expected to significantly affect any soils or vegetation within the area (i.e., the modeling domain). There are no predicted exceedances of the Primary or Secondary NAAQS due to the proposed emissions. Primary NAAQS set limits to protect public health, with an adequate margin of safety. "Public health" is defined to include the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary NAAQS set limits to protect public welfare from any known or anticipated adverse effects associated with the presence of such a pollutant. "Public welfare" includes protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

As required by 40 CFR 52.21(o), the maximum ambient concentrations emitted by the MCEC will be evaluated to determine the impact on local soils and vegetative species. The USEPA's *A Screening Procedure for the Impacts of Air Pollution Sources on Plants, Soils, and Animals* provides a multi-step process for estimating these impacts. The full analysis will be provided in the final PSD Application.

5.3 Class II Visibility Impairment

Along with the Class I Visibility Assessment in Section 4.0, an additional assessment of Class II areas will be completed. A list of Class II areas was requested from MDNR and provided on July 28, 2025.

Visibility impacts resulting from the proposed MCGS project emissions that could occur in the identified areas will be assessed using the USEPA's VISCREEN model in accordance with the *New Source Review Workshop Manual-Prevention of Significant Deterioration and Nonattainment Area Permitting; USEPA, Draft October 1990* guidance and the USEPA's *Workbook for Plume Visual Impact Screening and Analysis; USEPA October 1992*.

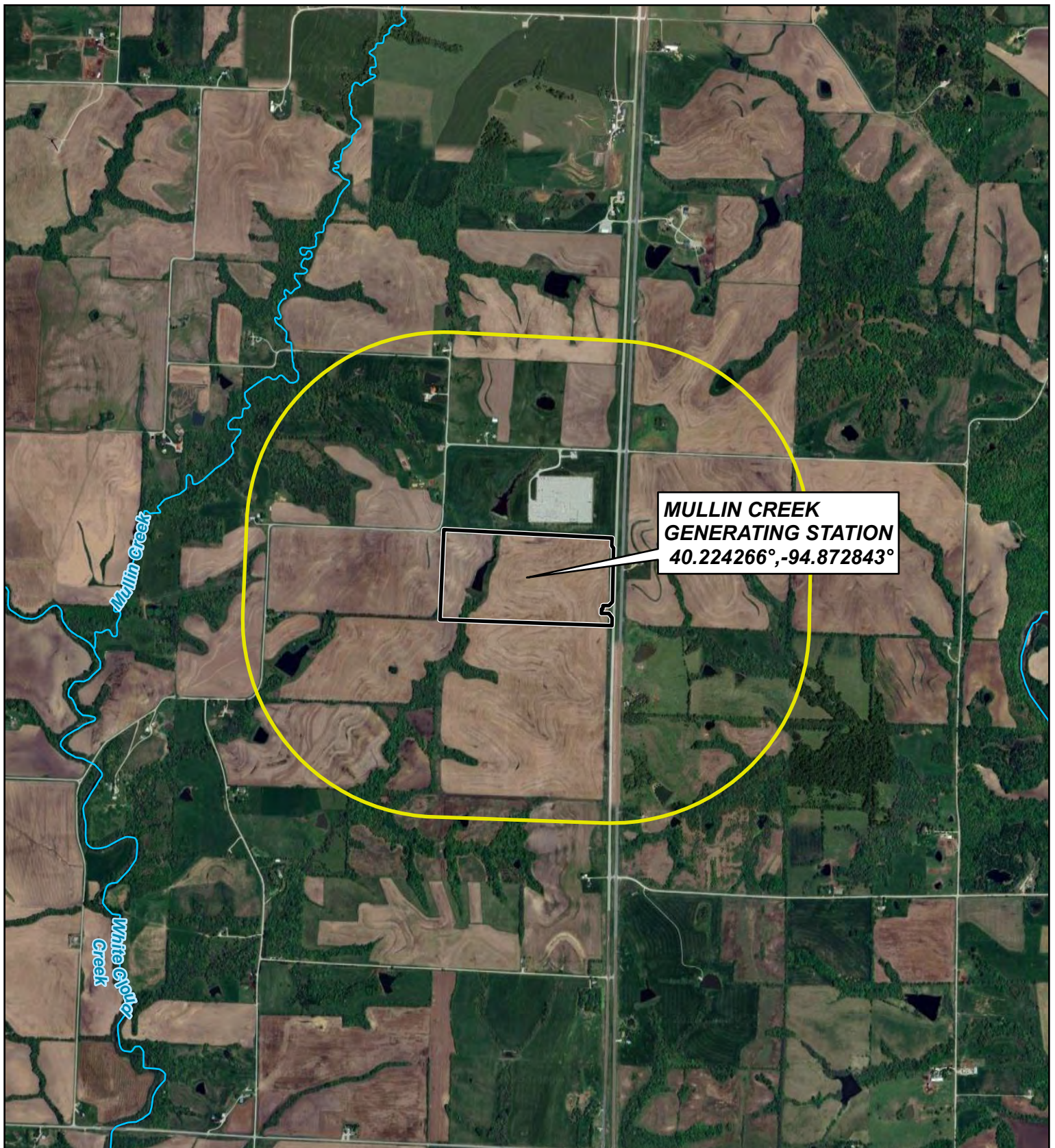
The guidance for determining visibility impacts in Class II areas are listed in Table 5-1, below. The first visibility parameter, ΔE , represents the perceptibility of a plume based on the color difference between the plume and a viewing background, such as the light-colored sky, or a darker terrain feature. The second parameter, contrast, represents the difference in light intensity between a given object and the surrounding objects that is caused by the plume.

TABLE 5-1 VISIBILITY PARAMETER SCREENING LEVELS

VISIBILITY PARAMETER	CLASS II SCREENING LEVELS
Relative Sensitivity, ΔE	4.0
Absolute Contrast	0.10

The results of VISCREEN for relative sensitivity and absolute contrast will be compared against the above Class II screening levels. If the results of VISCREEN for relative sensitivity and absolute contrast do not exceed the respective Class II screening levels, then the emissions from the proposed project are not expected to adversely impact visibility in Class II areas. The VISCREEN results will be included in the final modeling report.

APPENDIX A MAP OF FACILITY AND SURROUNDING AREA



Legend

-  Facility Boundary
-  3000' Radius
-  NHD Stream



0 1,000 2,000
Feet



EVERGY, INC.
MULLIN CREEK
GENERATING STATION

AREA MAP

NODAWAY COUNTY,
MISSOURI



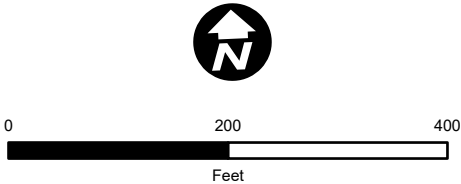
Date: 8/1/2025

APPENDIX B FACILITY LAYOUT



- Legend
-  Facility Boundary
 -  Point Source
 -  Building
 -  Tank

Datum: WGS 1984
Map Sources: Google Satellite Basemap



EVERGY, INC.
MULLIN CREEK
GENERATING STATION

PLOT PLAN

NODAWAY COUNTY,
MISSOURI



Date: 8/27/2025

APPENDIX C SOURCE CHARACTERIZATIONS AND RELEASE PARAMETER ASSIGNMENTS

**Evergy
Mullen Creek Energy Center
Modeled Stack Parameters**

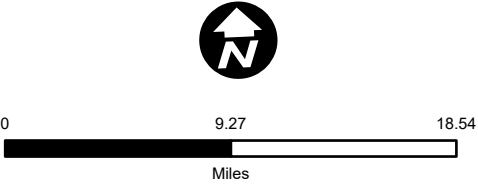
Modeling ID	Source Description	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temp (K)	Exit Velocity (m/s)	Stack Diameter (m)
EP1	SCGT1 (Normal) [Natural Gas]	340740.013	4454335.638	336.420	54.864	699.501	28.008	11.074
EP1a	SCGT1 (MECL) [Natural Gas]	340740.013	4454335.638	336.420	54.864	669.898	23.136	11.074
EP1b	SCGT1 (Startup) [Natural Gas]	340740.013	4454335.638	336.420	54.864	521.849	16.805	11.074
EP1c	SCGT1 (Normal) [Fuel Oil]	340740.013	4454335.638	336.420	54.864	632.141	25.437	11.074
EP1d	SCGT1 (MECL) [Fuel Oil]	340740.013	4454335.638	336.420	54.864	628.888	20.732	11.074
EP1e	SCGT1 (Startup) [Fuel Oil]	340740.013	4454335.638	336.420	54.864	481.434	15.262	11.074
EP3a	Fuel Gas Heater 1	340815.073	4454475.660	330.930	4.572	560.928	16.764	3.048
EP4	Emergency Generator 1	340720.432	4454461.589	327.510	4.420	774.817	75.606	0.457
EP5	Firepump 1 (Horizontal Exit)	340729.965	4454230.943	331.760	1.524	827.594	67.544	0.152
EP6	SCGT2 (Normal) [Natural Gas]	340659.883	4454336.856	334.960	54.864	699.501	28.008	11.074
EP6a	SCGT2 (MECL) [Natural Gas]	340659.883	4454336.856	334.960	54.864	669.898	23.136	11.074
EP6b	SCGT2 (Startup) [Natural Gas]	340659.883	4454336.856	334.960	54.864	521.849	16.805	11.074
EP6c	SCGT2 (Normal) [Fuel Oil]	340659.883	4454336.856	334.960	54.864	632.141	25.437	11.074
EP6d	SCGT2 (MECL) [Fuel Oil]	340659.883	4454336.856	334.960	54.864	628.888	20.732	11.074
EP6e	SCGT2 (Startup) [Fuel Oil]	340659.883	4454336.856	334.960	54.864	481.434	15.262	11.074
EP7a	Fuel Gas Heater 2 ("Carried")	340814.021	4454468.130	330.870	4.572	560.928	16.764	3.048
EP8	Emergency Generator 2	340641.471	4454462.668	325.550	4.420	774.817	75.606	0.457

APPENDIX D PROPERTY BOUNDARY AND RECEPTOR GRID OVERVIEW



- Legend
-  Facility Boundary
 -  Receptor Grid

Datum: UTM 1984
Map Sources: Google Satellite Basemap



EVERGY, INC.
MULLIN CREEK
GENERATING STATION

RECEPTOR GRID

NODAWAY COUNTY,
MISSOURI



Date: 8/1/2025

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MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

Mike Kehoe
Governor

Kurt U. Schaefer
Director

September 8, 2025

Steven Babler, Air Quality Sr Specialist I
Power Engineers, Inc.
16041 Foster
Overland Park, KS 66085

RE: Major Source Dispersion Modeling Protocol, Evergy, Inc. (Evergy), Barnard, Missouri

Dear Mr. Babler:

Personnel from the Missouri Department of Natural Resources' Air Pollution Control Program have reviewed the protocol document that describes the modeling methodology that will be used to evaluate the impact of ambient emissions at or beyond the property boundary of Evergy's Mullin Creek Generating Station near Barnard, Missouri. The following are section specific comments regarding this methodology.

2.3 Modeled Emission Rates and Limits

Table 2-3 outlines preliminary emission rates for the new Evergy facility, for the various scenarios. Please note, all emission estimates submitted in support of the proposed project must be reviewed and approved by the permit engineer assigned to the project prior to the issuance of the construction permit. The emission rates contained in the model input file will be considered preliminary and subject to change until this approval is granted.

If emergency equipment is included in the 1-hour averaging period runs, then a maximum hourly emission rate should be used in the model input file.

2.3.1 PM_{2.5} Emissions & 2.3.2 Ozone Emissions

EPA's guidance for Modeled Emission Rates for Precursors (MERPs) was updated in April 2024. Please use the memo entitled "*Clarification on the Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Demonstration Tool for Ozone and PM_{2.5} under the PSD Permitting Program*" dated April 30, 2024, as your guidance document for conducting your modeling analysis.

2.3.5 Emergency Equipment Emissions

Emergency equipment should be included in all short term and annual model runs if the facility does not want the restrictions that classify the equipment as being intermittent. How the emergency equipment is used will determine how the emission rate is to be calculated. For example, if the emergency generator is only being used in case of true emergencies and each month is tested for readiness for 30 minutes, a maximum hourly emission rate divided in half can be used. If the emergency generator plans to operate for

anything other than a true emergency and readiness testing, up to 100 hours per year, than the emission rate would need to be calculated accordingly.

2.3.6 NO₂ Modeling

If an in-stack ratio is used in the NO_x modeling, please first refer to EPA's Nitrogen Dioxide/Nitrogen Oxide In-Stack Ratio (ISR) Database to see if an exact in-stack ratio is available for the proposed equipment instead of using the default values.

3.1.1.3 PSD Pre-Application Analysis

Currently there is no significant monitoring concentration for PM_{2.5}, therefore pre-construction monitoring or the location of a representative monitor will be required for this facility. Also, since the preliminary emission rates show that emissions of NO_x will be greater than 100 tons per year, the company will be required to conduct ozone monitoring for the entirety of a single ozone season or find a representative ozone monitor.

3.1.2.1 NAAQS Analysis

When calculating a background concentration for the following pollutants and averaging times the following forms of each standard should be followed:

- NO_x annual – maximum measured concentration from the most recent 3-year period
- CO 1-hour and 8-hour – maximum measured concentration from the most recent 3-year period
- SO₂ 3-hour – maximum measured concentration from the most recent 3-year period
- PM₁₀ 24-hour - maximum measured concentration from the most recent 3-year period
- Lead – maximum measured concentration from the most recent 3-year period

3.1.2.2 PSD Class II Increment Consumption Analysis

A couple of points of clarification for the Class II Increment analysis. First, the minor source baseline date has already been triggered for Nodaway County for NO_x, PM₁₀ and SO₂. So, if an increment analysis is required for any of these three pollutants, interactive sources will need to be included in the model runs. This project however, once considered complete, will trigger the county for PM_{2.5}. Model runs for the annual and 24-hour PM_{2.5} increment will just need to include the project itself.

Secondly, while the 24-hour and annual averaging periods have been removed from the SO₂ NAAQs analysis, they are still required for an increment analysis. So, all four averaging periods will need to be below the significance level or an increment consumption analysis will be required.

3.1.4 Hazardous Air Pollutant Analysis

Please note that there is no longer a 10x annual Risk Assessment Level (RAL) for lead. There is a miss print in our HAPs table online. The only RAL associated with lead is the 0.15 µg/m³ on a 3-month rolling average.

3.2 Receptor Grid and Terrain Elevation

If available, the Air Program request the use of the 1/3 arc-second terrain digital elevation files instead of the use of the 1-arc-second.

3.4 Background Concentrations and Interactive Source Inventories

A detailed analysis should be submitted to the Air Pollution Control Program detailing the criteria used to determine representativeness of the monitors chosen to replace pre-construction monitoring/background concentrations for the facility. Please refer to EPA's guidance document entitled "*Guidance on Developing Background Concentrations for Use in Modeling Demonstrations*" dated November 20, 2024, that outlines what is required for this analysis. For example, the analysis should include a review of surrounding sources, mobile sources, land use, terrain, wind patterns, etc.

5.2 Soils and Vegetation Analysis

Please include a synergy analysis along with the 7 step soils analysis, detailed in the following document: "*Air Quality Criteria for Oxides of Nitrogen, Summary of Vegetation Impacts*". If you need a copy of this document, please email us and we will forward a copy to you.

Miscellaneous

Any changes to the facility layout that occur during construction should be reported to the department's Air Pollution Control Program upon completion of the project. At that time, staff will determine if the changes require the submittal of an updated air quality impact analysis.

Lastly, the department's Air Pollution Control Program requires that all of the model inputs and outputs be submitted electronically. A written description of the procedures used throughout the model analysis should be submitted with an emphasis placed upon any special considerations that were made during the course of the modeling study.

The remainder of the protocol document sufficiently addresses the proposed modeling techniques. If you need additional assistance, or have comments, please feel free to contact me on my direct line at (573)751-8327.

Sincerely,

Kelly Robson
Construction Permit Modeling Unit

APPENDIX E PSD AIR QUALITY IMPACTS ANALYSIS REPORT

December 2025

AIR QUALITY IMPACT ASSESSMENT

*In Support of the
Prevention of Significant Deterioration
Air Permit Application*

*Evergy, Inc
Mullin Creek Generating Station (Preliminary Name)
Barnard, Nodaway County, Missouri*

Submitted To:
*Department of Natural Resources
Air Pollution Control Program
Permit Section
P.O. Box 176
Jefferson City, Missouri 65102-0176*

*PROJECT NUMBER:
0246593.02.02*



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1.0 PROJECT IDENTIFICATION INFORMATION

Evergy, Inc (Evergy) is submitting a Preconstruction and Prevention of Significant Deterioration (PSD) air permit application to construct a new simple cycle power plant near Barnard, Missouri, in Nodaway County. The proposed new power plant will preliminarily be referred to as the Mullin Creek Generating Station (MCGS).

POWER Engineers, Inc. has prepared this proposed Air Quality Impact Assessment (AQIA) for evaluating the air quality impacts resulting from the proposed MCGS following written methodologies and procedures of the Missouri Department of Natural Resources (MDNR) and the United States Environmental Protection Agency (USEPA). The modeling protocol was submitted to MDNR on September 2, 2025, and received approval on September 12, 2025.

Applicant:	Evergy, Inc
Facility:	Mullin Creek Generating Station
Facility Air Permit Number:	TBD
Nearest City:	Barnard
County in which Plant is Located:	Nodaway County
Applicant's Modeler:	POWER Engineers, Inc.

2.0 INSTALLATION DESCRIPTION

Everbly is submitting an air permit application for the proposed energy generation facility which includes detailed information of the proposed MCGS.

An AQIA was conducted to demonstrate that emissions associated with this project will not cause or contribute to an exceedance of the National Ambient Air Quality Standards (NAAQS) or consumption of the PSD increments. Impacts from the proposed project were evaluated to ensure that they will not cause or contribute to adverse health effects or effects with respect to vegetation or corrosion. Additionally, impacts from the proposed project were evaluated to ensure that they will not cause or contribute to adverse effects with respect to growth, visibility, and soils.

2.1 Installation and Project Description

Everbly is proposing to build a new simple cycle power plant near Barnard, Missouri, in Nodaway County. An area map showing the location of the proposed MCGS is provided as Appendix A. As shown in the Area Map, the MCGS will be constructed in a remote area in Nodaway County.

The proposed MCGS facility will consist of two combustion turbines.

The power generation equipment is two Mitsubishi Model M501JAC simple cycle combustion turbines (SCCT) that can burn either natural gas or ultra-low sulfur diesel (ULSD). Proposed emission controls for the SCCTs include an aqueous ammonia-based Selective Catalytic Reduction system to reduce nitrogen oxides (NO_x) emissions and a catalytic oxidation unit to reduce carbon monoxide (CO) and volatile organic compounds (VOC) emissions. The emission control equipment and system design components proposed for the SCCT meet PSD Best Available Control Technology requirements.

This includes three natural gas-fired fuel gas heaters (only two in operation at a time) to heat the natural gas fuel fed to each SCCT: diesel storage tanks for the SCCTs, two diesel-fired internal combustion engines in support of emergency standby power generation, one emergency fire pump, and the diesel storage tanks for these engines. The emission control and/or design components of the ancillary emission sources at the MCGS meet PSD Best Available Control Technology requirements.

2.2 Installation Locational Data

All locational data is included in Zone 15 of the Universal Transverse Mercator (UTM) geographic coordinate system. The North American Datum 83 (NAD 83) is the geodetic reference system used to determine all UTM coordinates at the facility.

The center point and fence line corners are available in Table 2-1 below.

TABLE 2-1 FACILITY COORDINATES

COORDINATE	EASTING (X) (m)	NORTHING (Y) (m)
Center of Facility	340729.400	4454338.000
Fence Line Corner – 1	340258.296	4454544.205
Fence Line Corner – 2	341037.836	4454504.416
Fence Line Corner – 3	341036.717	4454468.892
Fence Line Corner – 4	341045.033	4454458.188
Fence Line Corner – 5	341039.330	4454203.591
Fence Line Corner – 6	341023.572	4454186.802
Fence Line Corner – 7	341023.333	4454168.260
Fence Line Corner – 8	341038.875	4454148.861
Fence Line Corner – 9	341037.573	4454098.477
Fence Line Corner – 10	340240.555	4454126.671

2.3 Modeled Emission Rates and Limits

Nodaway County is currently classified as in attainment/unclassifiable with all NAAQS.

The facility-wide potential-to-emit (PTE) emissions for criteria pollutants from the proposed MCGS are available in Table 2-2 and include emissions from the proposed SCCTs, fuel gas heaters, emergency generators, and emergency fire pump, for both the natural gas and the diesel scenarios. These PTE calculations for all PSD pollutants will be provided in the final PSD application. Additionally, an initial assessment summary for each PSD-regulated pollutant using Significant Emission Rates is also included in Table 2-2. Note that the ULSD operating scenario resulted in higher modeled concentrations compared to the natural gas fuel scenario. Therefore, the predicted concentrations presented in Table 2-2 reflect the ULSD fuel scenario.

TABLE 2-2 PSD SIGNIFICANCE SUMMARY

POLLUTANT	PRELIMINARY PTE (tpy)	SER (tpy)	TRIGGERS PSD REVIEW
Nitrogen oxides (NO _x , as NO ₂ and as an ozone precursor)	887.9	40	Yes
Carbon monoxide (CO)	5,199.7	100	Yes
Sulfur dioxide (SO ₂)	56.7	40	Yes
Volatile organic compounds (VOC)	1,728.7	40	Yes
Particulate matter (PM)	429.9	25	Yes
PM with a diameter of less than 10 microns (PM ₁₀)	429.9	15	Yes
PM with a diameter of less than 2.5 microns (PM _{2.5})	429.9	10	Yes
Sulfuric Acid Mist (H ₂ SO ₄)	97.4	7	Yes

Notes: PTE = potential to emit; tpy = tons per year; SER = Significant Emission Rates; PSD = Prevention of Significant Deterioration

The emission rates for criteria pollutants that are included in the AQIA are presented in Table 2-3. As discussed in Section 2-1, the two SCCTs can operate using either natural gas or ULSD.

The dispersion modeling analysis will be conducted for two scenarios: one using natural gas, and the other using ULSD. Table 2-3 includes emission rates for both operating scenarios.

Under the federal New Source Review program, the MCGS project will be a major source that requires PSD review for the New Source Review-regulated pollutants NO_x, CO, VOC, particulate matter (PM₁₀ and PM_{2.5}), sulfur dioxide (SO₂), and greenhouse gases (GHG – expressed as CO₂e). To satisfy PSD review requirements, NO₂, CO, PM₁₀, PM_{2.5}, and SO₂ were evaluated for comparison with the NAAQS and PSD increment. The project has net emission increases of NO_x and VOC that are each greater than 100 tons per year. Therefore, a NAAQS analysis and the gathering of air quality (monitoring) data is required for ozone (40 Code of Federal Regulations [CFR] 51.166(i)(5)(i)(f)). Please see Section 4.4 for information on the proposed monitor.

TABLE 2-3 POINT SOURCE MODELING EMISSION RATES

POINT SOURCE	NO _x (lb/hr)	NO _x (tpy)	CO (lb/hr)	CO (tpy)	PM ₁₀ /PM _{2.5} (lb/hr)	PM ₁₀ /PM _{2.5} (tpy)	SO ₂ (lb/hr)	SO ₂ (tpy)
SCCT1 (Normal) [Natural Gas]	44.0	244.0	21.0	400.0	20.0	87.6	6.4	27.8
SCCT1 (MECL) [Natural Gas]	25.0	---	13.0	---	12.5	---	3.7	---
SCCT1 (Startup) [Natural Gas]	300.0	---	1,593.8	---	---	---	---	---
SCCT1 (Normal) [ULSD]	77.0	440.9	56.0	2,597.3	49.0	214.6	6.0	28.3
SCCT1 (MECL) [ULSD]	53.0	---	39.0	---	34.8	---	4.4	---
SCCT1 (Startup) [ULSD]	293.9	---	5,877.6	---	---	---	---	---
Fuel Gas Heater 1	0.5	2.1	0.5	2.1	0.07	0.3	0.02	0.08
Emergency Generator 1	18.3	0.9	7.7	0.4	0.7	0.03	0.02	0.0008
Firepump	2.8	0.1	2.5	0.1	0.1	0.006	0.003	0.0002
SCCT2 (Normal) [Natural Gas]	44.0	244.0	21.0	400.0	20.0	87.6	6.4	27.8
SCCT2 (MECL) [Natural Gas]	25.0	---	13.0	---	12.5	---	3.7	---
SCCT2 (Startup) [Natural Gas]	300.0	---	1,593.8	---	---	---	---	---
SCCT2 (Normal) [ULSD]	77.0	440.9	56.0	2,597.3	49.0	214.6	6.0	28.3
SCCT2 (MECL) [ULSD]	53.0	---	39.0	---	34.8	---	4.4	---
SCCT2 (Startup) [ULSD]	293.9	---	5,877.6	---	---	---	---	---
Fuel Gas Heater 2	0.5	2.1	0.5	2.1	0.07	0.3	0.02	0.08
Emergency Generator 2	18.3	0.9	7.7	0.4	0.7	0.03	0.02	0.0008

Note: NO_x – nitrogen oxides; CO – carbon monoxide; PM₁₀ – particulate matter with a diameter of less than 10 microns; PM_{2.5} – particulate matter with a diameter of less than 2.5 microns; SO₂ – sulfur dioxide; lb/hr – pounds per hour; tpy – tons per year; SCCT – simple cycle combustion turbine; MECL – minimum emissions compliant load.

Note: Annual average hourly emissions were utilized for the Emergency Generators and the Firepump in the 1-hour NO₂ and SO₂ analyses (based on maximum annual operation of 100 hours/year).

Note: For 3-hour, 8-hour, and 24-hour averaging periods, hourly emissions modeled for the Emergency Generators and the Firepump corresponds to a maximum of 30 minutes of testing emissions.

Note: Fuel Gas Heater 1 and Fuel Gas Heater 2 are only included in the Natural Gas scenario.

2.3.1 PM_{2.5} Emissions

Guidance from the 2018 USEPA Regional, State, and Local Modelers' Workshop in Boston, Massachusetts, June 5, 2018, was followed in the modeling of PM_{2.5} emissions. The secondary PM_{2.5} impacts were estimated using guidance from the USEPA's *Clarification on the Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Demonstration Tool for Ozone and PM_{2.5} under the PSD Permitting Program, April 30, 2024*. MERPs derived

using the USEPA's photochemical modeling results for hypothetical sources (intended to support Class II NAAQS Tier 1 demonstrations) located in Missouri were used to estimate the air quality PM_{2.5} impacts associated with project-related emissions of NO_x and SO₂. These conservative secondary PM_{2.5} impact estimates were included in the preliminary impact determination.

2.3.2 Ozone Emissions

Guidance from the 2018 USEPA Regional, State, and Local Modelers' Workshop in Boston, Massachusetts, June 5, 2018, was followed in the modeling of ozone (O₃) emissions. The ozone impacts were estimated using guidance the USEPA's *Clarification on the Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Demonstration Tool for Ozone and PM_{2.5} under the PSD Permitting Program, April 30, 2024*. MERPs derived using the USEPA's photochemical modeling results for hypothetical sources (intended to support Class II NAAQS Tier 1 demonstrations) located in Missouri were used to estimate the air quality O₃ impacts associated with project-related emissions of NO_x and VOCs.

2.3.3 Hazardous Air Pollutant Emissions

According to guidance from the MDNR, if a project's potential Hazardous Air Pollutant (HAP) emissions exceed the Screening Modeling Action Levels (SMALs), then a demonstration of compliance with the Risk Assessment Levels (RALs) is required. A total of forty-one HAPs were analyzed, and ten HAPs required an RAL review that includes various operating scenarios and averaging times for each pollutant. PTE emissions included in Table 2-4 account for these ten HAPs from all proposed sources at the facility.

TABLE 2-4 HAZARDOUS AIR POLLUTANT SCREENING MODELING ACTION LEVELS ANALYSIS

HAP	SMAL (tpy)	PRELIMINARY PTE (tpy)	TRIGGERS RAL REVIEW
1,3-Butadiene	0.07	0.48	Yes
Acrolein	0.04	0.23	Yes
Arsenic	0.005	0.33	Yes
Beryllium	0.008	0.01	Yes
Cadmium	0.01	0.14	Yes
Formaldehyde	2	3.80	Yes
Lead	0.01	0.42	Yes
Mercury	0.01	0.04	Yes
PAH	0.01	1.20	Yes
Selenium	0.1	0.75	Yes

Notes: SMAL = Screening Modeling Action Level; tpy = tons per year; PTE = Potential to Emit; RAL = Risk Assessment Level

2.3.4 Operating Load Scenarios

To ensure compliance at all normal operating modes modeling was performed for various modeling scenarios to ensure that the worst-case modeling parameters were modeled from both an emissions perspective (emission rate) and from a dispersion characteristic perspective (stack velocity). The following operating scenarios were included in the AQIA, and Everbly believes

they provide coverage over all future operating scenarios. Each was applied to a natural gas only scenario and an ULSD only scenario.

Startup: Startup of the SCCTs is not a steady-state operating scenario and the SCCTs will not be operated for long periods of time in “start-up” mode. Startup will typically last for approximately 32 minutes on natural gas and 49 minutes on ULSD, but calculated emissions and modeled values are based on 60 minutes. The NO_x and CO startup/shutdown emissions were conservatively modeled using the maximum expected hourly startup emission rate to ensure compliance with the short-term air quality standards for these pollutants. This maximum hourly rate was modeled assuming startup operations occur every hour of the year.

Minimum Emission Compliant Load (MECL): This is minimum load that the unit will be operated at for extended periods. This is the worst-case (lowest) stack velocity for which the unit will operate at for a continuous 1-hour period during normal operation.

Maximum Load: This is the maximum load the unit can operate and has the highest emission rate. To be conservative the modeling assumes that the maximum load can be achieved 8,760 hours per year. This is the basis for all PTE calculations which are included in the PSD application.

Modeling source groups were used to obtain conservative estimates for the emission scenarios discussed above. Table 2-5 describes the source groups used in both preliminary and full impact modeling for each pollutant.

TABLE 2-5 SOURCE GROUPS

POINT SOURCE	MODEL ID	NATURAL GAS			ULSD		
		NORMAL	MECL	STARTUP	NORMAL	MECL	STARTUP
SCCT1 (Normal) [Natural Gas]	EP1	X					
SCCT1 (MECL) [Natural Gas]	EP1a		X				
SCCT1 (Startup) [Natural Gas]	EP1b			X			
SCCT1 (Normal) [ULSD]	EP1c				X		
SCCT1 (MECL) [ULSD]	EP1d					X	
SCCT1 (Startup) [ULSD]	EP1e						X
Fuel Gas Heater 1	EP3a	X	X	X			
Emergency Generator 1	EP4	X	X	X	X	X	X
Firepump 1	EP5	X	X	X	X	X	X
SCCT2 (Normal) [Natural Gas]	EP6	X					
SCCT2 (MECL) [Natural Gas]	EP6a		X				
SCCT2 (Startup) [Natural Gas]	EP6b			X			
SCCT2 (Normal) [ULSD]	EP6c				X		
SCCT2 (MECL) [ULSD]	EP6d					X	
SCCT2 (Startup) [ULSD]	EP6e						X
Fuel Gas Heater 2	EP7a	X	X	X			
Emergency Generator 2	EP8	X	X	X	X	X	X

Note: SCCT – simple cycle combustion turbine; MECL – minimum emissions compliant load

2.3.5 Emergency Equipment Emissions

Diesel-fired emergency generator engines and a diesel-fired emergency fire water pump are included in the proposed application. Emissions associated with the emergency readiness testing of the emergency engines and the emergency fire water pump were modeled.

Evergy plans to test the proposed emergency engines and the emergency fire water pump for a period of 30 minutes per month. The modeling of the proposed equipment includes a maximum of 30 minutes of testing emissions for the following modeled averaging periods: 3-hour, 8-hour, and 24-hour.

The USEPA's *Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO₂ National Ambient Air Quality Standard; March 1, 2011* states that compliance demonstrations for the 1-hour NO₂ and SO₂ NAAQS be based on emission scenarios that can logically be assumed to be relatively continuous or which occur frequently enough to contribute significantly to the annual distribution of daily maximum 1-hour concentrations. As such, the 1-hour NO₂ associated with these intermittent sources were modeled per USEPA guidelines, multiplying the maximum hourly emission rate by the ratio of the proposed hours per year and total available hours per year. Although expected operations correspond to each proposed engine being tested a total of six hours per year, the modeling includes a conservative annual emissions estimate corresponding to 100 hours per year. Therefore, the modeling of 1-hour NO₂ emissions associated with the intermittent sources was modeled using these higher annual emission assumptions. As previously described, Evergy typically tests a single engine at a time. However, the modeling of emergency readiness testing was conservatively conducted assuming both diesel engines are tested simultaneously.

2.3.6 NO₂ Modeling

Following guidance included in the USEPA's *Guideline on Air Quality Models; Appendix W to 40 CFR Part 51; January 17, 2017*; the Tier 2 default Ambient Ratio Method 2 NO_x-to-NO₂ conversion was utilized within the AERMOD model. The Appendix W default minimum ambient NO₂/NO_x ratio of 0.5 and the maximum ambient ratio of 0.9 were used.

2.4 Source Characterization and Facility Layout

Each source to be included in the air dispersion modeling is classified as a point source. There are no volume sources or area sources in the AQIA.

2.4.1 Point Source Emission Releases

Exhaust values for the proposed project's air emission sources are listed in Table 2-6 and Appendix C. Each source was modeled as a vertical stack point source at its physical release height or at the Building Profile Input Program (BPIPPRM)-calculated Good Engineering Practice stack height, whichever was lower.

TABLE 2-6 PRELIMINARY POINT SOURCE MODELING PARAMETERS

POINT SOURCE	EASTING (X) (m)	NORTHING (Y) (m)	STACK HEIGHT (ft)	STACK DIAMETER (ft)	EXIT TEMPERATURE (F)	EXIT VELOCITY (fps)
SCCT1 (Normal) [Natural Gas]	340739.529	4454340.448	180	36.3	799.4	91.9
SCCT1 (MECL) [Natural Gas]	340739.529	4454340.448	180	36.3	746.1	75.9
SCCT1 (Startup) [Natural Gas]	340739.529	4454340.448	180	36.3	479.7	55.1
SCCT1 (Normal) [ULSD]	340739.529	4454340.448	180	36.3	678.2	83.5
SCCT1 (MECL) [ULSD]	340739.529	4454340.448	180	36.3	672.3	68.0
SCCT1 (Startup) [ULSD]	340739.529	4454340.448	180	36.3	406.9	50.1
Fuel Gas Heater 1	340812.384	4454458.692	15	0.8	550.0	55.0
Emergency Generator 1	340726.146	4454478.010	14.5	1.5	935.0	248.1
Firepump	340728.143	4454196.683	5	0.5	1030.0	221.6
SCCT2 (Normal) [Natural Gas]	340659.770	4454342.506	180	36.3	799.4	91.9
SCCT2 (MECL) [Natural Gas]	340659.770	4454342.506	180	36.3	746.1	75.9
SCCT2 (Startup) [Natural Gas]	340659.770	4454342.506	180	36.3	479.7	55.1
SCCT2 (Normal) [ULSD]	340659.770	4454342.506	180	36.3	678.2	83.5
SCCT2 (MECL) [ULSD]	340659.770	4454342.506	180	36.3	672.3	68.0
SCCT2 (Startup) [ULSD]	340659.770	4454342.506	180	36.3	406.9	50.1
Fuel Gas Heater 2	340812.174	4454466.033	15	0.8	550.0	55.0
Emergency Generator 2	340646.354	4454479.667	14.5	1.5	935.0	248.1

Note: SCCT – combined cycle combustion turbine; m – meter; ft – feet; °F – degrees Fahrenheit; fps – feet per second

2.4.2 Facility Layout

A copy of the plot plan is provided as Appendix B. The plot plan includes the names and locations of emission points and structures relative to the MCGS' property.

Building downwash effects were included in the modeling based on guidance provided in the USEPA's *User's Guide to the Building Profile Input Program, October 1993*. The USEPA currently requires that all building downwash be determined using the BPIPPRM subroutine. Providence/Oris LLC's "BEE-Line BEEST for Windows" was used for calculating downwash parameters for this analysis. This program includes downwash software which uses the latest BPIPPRM subroutine (version 04274) in its calculations.

There are five buildings being proposed at the MCGS:

- » Two Turbine Buildings
- » Air Cooled Condenser Building
- » Administration Building
- » Water Treatment Building

There are also five tanks being proposed at the MCGS that also contribute to downwash effects:

- » Two Demineralized Water Storage Tanks
- » One Service Firewater Storage Tank

» Two Diesel Storage Tanks

Information regarding the MCGS' proposed structures was entered into the BPIPPRM-based software program. The downwash parameter values were calculated for each point source by the software program and inserted into the AERMOD input files in the appropriate locations and formats. Downwash summary tables created by the BPIPPRM subroutines are included as part of the electronic files included in the AQIA submitted to the MDNR.

3.0 CLASS I ANALYSIS

The Federal Land Managers' Air Quality Related Values Work Group Phase I report requires all facilities within 100 km of a Class I area to develop a modeling protocol. There are two Class I areas in Missouri, both located over 100 km from the MCGS. The Hercules-Glades Wilderness Area (over 400 km away) and the Mingo Wildlife Refuge (over 500 km away). Additionally, there are no Class I areas in Iowa, Nebraska, or Kansas, states that are within 100 km of the MCGS. As such, no specific Class I analysis and subsequent modeling protocol will be completed. Instead, please see sections 4 and 5 for Class II and Additional Impact Analyses.

4.0 CLASS II ANALYSIS

4.1 Model Selection

The American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD), version 24142, was used to perform the dispersion modeling in this AQIA. AERMOD is the latest generation of atmospheric dispersion models suitable for industrial sources and is the model preferred by the USEPA for such applications. To facilitate the running of AERMOD, the Providence/ORIS, LLC's "BEE-Line BEEST for Windows" graphic user interface (version 12.13a) was used.

4.2 Receptor Grid and Terrain Elevation

The receptor grids used in the preliminary and full impacts analyses are described in this Section. The NAD83 datum was used for the receptor Universal Transverse Mercator coordinates. Providence/ORIS, LLC's "BEE-Line BEEST for Windows" was used to calculate the appropriate domain boundaries.

The receptor coverage utilized for the preliminary analyses consists of the following:

- » 50-meter spaced receptors along the proposed MCGS property boundary. These receptors follow the fence line around the property.
- » 100-meter spaced receptors to a distance of 1 kilometer (km) from the proposed MCGS property boundary.
- » 250-meter spaced receptors to a distance of 2.5 km from the proposed MCGS property boundary.
- » 500-meter spaced receptors to a distance of 5 km from the proposed MCGS property boundary.
- » 1,000-meter spaced receptors to a distance of 50 km from the proposed MCGS property boundary to ensure that (1) the maximum predicted concentration is located, (2) all locations with predicted concentrations greater than the SILs were identified, and (3) that concentration gradients associated with the project-related emissions clearly decrease in magnitude outside of the areas of impact.

For the full impacts analysis, the receptor grid was based on the above spacing but only included receptors in the Everly significant impact area. This receptor grid was designed to capture the maximum off-property ground-level concentrations for all pollutants, operating scenarios, and review types. If the modeled concentrations predict any NAAQS or PSD Increment violations, then Everly will provide modeling analyses to show that the project will not cause or contribute to a violation. Everly will also provide a culpability analysis for the modeled violations.

Digital terrain data was processed using the USEPA's AERMAP program (version 24142) to calculate (interpolate) the terrain elevations and local terrain maximums of points along the receptor grid as well as sources, buildings, and tanks onsite. Input data is comprised of 1/3-arc-second (approximately 10 meters) United States Geological Survey National Elevation Dataset data in GeoTIFF format.

4.3 Meteorological Data and Surface Characteristics

MDNR provided the pre-processed meteorological data for this project on May 23, 2025. The pre-processed meteorological data consisted of surface data from the St. Joseph, Missouri Rosecrans Memorial Airport meteorological station (Station ID 13993) and upper air data from the Topeka, Missouri Philip Billard Municipal Airport meteorological station (Station ID 13996). The MDNR processed the data using AERMET version 24142 and incorporated the AERMINUTE data along with the low wind speed threshold of 0.5 meters per second. The provided data is from the most recent five-year period, 2020 to 2024, and was utilized in the preliminary SIL modeling, and full impacts NAAQS and PSD increment analyses. The meteorology data provided by the MDNR includes the ADJ_U* option from AERMET. The base elevation for the Rosecrans Memorial Airport meteorological station is 246.1 meters and the base elevation for the Topeka Philip Billard Municipal Airport meteorological station is 268.1 meters.

4.4 Background Concentrations and Interactive Source Inventories

Estimates for the current ambient air background concentrations at the proposed project site may be required for two distinct and separate purposes: (1) to demonstrate that the ambient air concentrations of PSD-significant pollutants are currently in compliance with the NAAQS and (2) for use in a full impact NAAQS modeling analysis. Based on draft Preliminary Impact Determination results, background ambient air concentration data is required for NO₂ and PM_{2.5}. Everbly proposes to use ambient air quality data from existing air quality monitoring stations to establish representative background concentrations for these contaminants.

Following guidance included in the USEPA *Guidance on Developing Background Concentrations for Use in Modeling Demonstrations; November 20, 2024*; the forms of monitor concentrations for the averaging periods for NO₂, PM_{2.5}, and O₃ were selected. Details related to the selection of monitors can be found in Table 4-1 below.

TABLE 4-1 PROPOSED MONITOR SELECTION

CONTAMINANT	MONITORING STATION	USEPA ID	LAND CLASSIFICATION	DISTANCE TO FACILITY
NO ₂	Troost – Jackson Co., Missouri	29-095-0034	Urban	127 km
PM _{2.5}	St. Joseph Pump Station – Buchanan Co., Missouri	29-021-0005 Monitor 5	Urban	54 km
O ₃	Savannah – Andrew Co., Missouri	29-003-0001 Monitor 2	Rural	29 km

As noted in Section 5.2, the MCGS has a rural setting. While the NO₂ and PM_{2.5} monitors are located in urban settings, selected monitors were also the nearest to the proposed MCGS location. When multiple monitors were available, the most conservative monitor was selected to provide a representative estimate for the background concentration at the project site. The facility and the monitor also have relatively smooth terrain within a few kilometers of their locations.

The monitors are also representative of pollution transport from nearby sources as they are also the closest monitors to those sources. As noted in Section 4.6.2.1, the background

concentration includes contributions from the offsite modeled sources (i.e., existing sources are double counted).

Everbly proposes using the data in Table 4-2 to establish representative background concentrations. Note that the Preliminary Impact Determination results for CO, SO₂, PM_{2.5}, and PM₁₀, are less than the SIL. Therefore, ambient backgrounds are not required for full impact NAAQS modeling analysis.

TABLE 4-2 PROPOSED BACKGROUND CONCENTRATION

CONTAMINANT	MONITORING STATION	USEPA ID	AVERAGING PERIOD	CONCENTRATION (µg/m ³)	FORM
NO ₂	Troost – Jackson Co., Missouri	29-095-0034	1-hour	87.7	3-Year Average of 98 th Percentiles of the Daily 1-Hour Maximum 2022-2024
			Annual	30.3	1 st High, 2024
PM _{2.5}	St. Joseph Pump Station – Buchanan Co., Missouri	29-021-0005 Monitor 5	24-hour	19.0	3-Year Average of 98 th Percentiles of the Daily 1-Hour Maximum 2022-2024
			Annual	8.4	3-Year Average of Weighted Annual Mean 2022-2024
O ₃	Savannah – Andrew Co., Missouri	29-003-0001 Monitor 2	8-hour	66.3 ppb	3-Year Average of 4th High of the Daily Max 8-Hour Average 2022-2024

An inventory of off-property interactive sources for the cumulative analyses (NAAQS and PSD Class II Increment) was also requested and provided by MDNR. This inventory is expected to include permitted sources. Note that a conservative full-impact PSD increment-consumption analysis was conducted using the off-property interactive source inventories developed for the full-impact NAAQS analysis.

4.5 Pre-construction Air Quality Monitoring

The *New Source Review Workshop Manual-Prevention of Significant Deterioration and Nonattainment Area Permitting; USEPA, Draft October 1990* (page C.16) states that continuous ambient monitoring data may be required unless "either (1) the predicted ambient impact, i.e., the highest modeled concentration for the applicable averaging time, caused by the proposed significant emissions increase (or significant net emissions increase), or (2) the existing ambient pollutant concentrations, are less than the prescribed significant monitoring value" (i.e., SMC value).

The proposed project will emit PSD-significant amounts of NO₂, PM₁₀, PM_{2.5}, SO₂, CO, and O₃ precursors. Based on the Preliminary Impact Determination results, a compilation of representative monitoring data is not be required for CO, SO₂, or PM₁₀. Based on the proposed net emission increases of VOC and NO_x, a compilation of representative monitoring data is required for O₃.

On January 22, 2013, the United States Court of Appeals for the District of Columbia Circuit granted a request from the USEPA to vacate and remand to the USEPA the portions of two PSD PM_{2.5} rules [40 CFR 51.166(k)(2) and 40 CFR 52.21(k)(2)] addressing select provisions of the PM_{2.5} SILs so that the USEPA could voluntarily correct an error in these provisions. The USEPA amended its regulations and removed the vacated PM_{2.5} SILs effective December 9, 2013 – requiring all applicants to compile PM_{2.5} monitoring data.

Evergy believes the background ambient air concentration data in Table 4-2 will offer conservative estimates of the background PM_{2.5} and O₃ concentrations. Therefore, Evergy proposes to utilize that monitoring data in lieu of performing pre-construction monitoring for PM_{2.5} and O₃.

4.6 Modeling Results

4.6.1 Preliminary Impact Determination

4.6.1.1 Modeled Emission Rates for Precursors Analysis

As described in Sections 2.3.1 and 2.3.2, a Tier 1 approach was used to estimate the secondary PM_{2.5} and O₃ impacts associated with the precursor emissions. The calculations are provided as Appendix E. The estimated secondary PM_{2.5} and O₃ analysis results are summarized in Table 4-3.

TABLE 4-3 MERP ANALYSIS RESULTS

POLLUTANT	AVERAGING PERIOD	ESTIMATED MERP CONCENTRATION (µg/m ³)	
		NATURAL GAS	ULSD
PM _{2.5}	24-hour	0.0575	0.185
	Annual	0.00212	0.00662
O ₃	8-hour	1.488	2.639

These estimated impacts are included in the SIL analysis and in applicable full impact analyses.

4.6.1.2 Significant Impact Level Analysis

This modeling was conducted for proposed emissions for both natural gas and ULSD fuel scenarios to determine whether full impact modeling was required and, if so, to determine the area of impact. The predicted ground-level concentrations for both scenarios and SILs are summarized in Table 4-4.

TABLE 4-4 SIL ANALYSIS RESULTS

POLLUTANT	AVERAGING PERIOD	MODELING SCENARIO (SOURCE GROUP)	MAXIMUM PREDICTED CONCENTRATIONS AT EACH RECEPTOR (ug/m ³)			SIGNIFICANT IMPACT LEVEL (ug/m ³)
			FORM	NATURAL GAS	ULSD	
CO	1-Hour	NORM	1 st High (Individual Year in a 5 Year Period)	47.73	5.73	2,000
		MECL		47.73	5.70	
		START		181.35	756.68	
	8-Hour	NORM	1 st High (Individual Year in a 5 Year Period)	28.46	23.23	500
		MECL		28.46	23.23	
		START		79.85	347.40	
NO ₂	1-Hour	NORM	Highest 5-Year Average of the H1H	38.43	5.34	7.5
		MECL		38.43	5.32	
		START		38.43	22.19	
	Annual	NORM	1 st High (Individual Year in a 5 Year Period)	1.01	0.17	1
		MECL		1.01	0.17	
SO ₂	1-Hour	NORM	Highest 5-Year Average of the H1H	1.64	0.29	7.8
		MECL		1.64	0.24	
	3-Hour	NORM	1 st High (Individual Year in a 5 Year Period)	1.44	0.27	25.0
		MECL		1.44	0.22	
	24-Hour	NORM	1 st High (Individual Year in a 5 Year Period)	0.66	0.062	7.8
		MECL		0.66	0.060	
	Annual	NORM	1 st High (Individual Year in a 5 Year Period)	0.042	0.0036	1.0
PM ₁₀	24-Hour	NORM	1 st High (Individual Year in a 5 Year Period)	2.54	0.51	5
		MECL		2.54	0.48	
	Annual	NORM	1 st High (Individual Year in a 5 Year Period)	0.16	0.027	1
PM _{2.5} (NAAQS)	24-Hour	NORM	Highest 5-Year Average of the H1H	2.04 *	0.49 *	1.2
		MECL		2.04 *	0.46 *	
	Annual	NORM	Highest 5-Year Average of the H1H	0.15 *	0.031 *	0.13
PM _{2.5} (Increment)	24-Hour	NORM	1 st High (Individual Year in a 5 Year Period)	2.60 *	0.69 *	1.2
		MECL		2.60 *	0.66 *	
	Annual	NORM	1 st High (Individual Year in a 5 Year Period)	0.16 *	0.034 *	0.13
O ₃	8-Hour	N/A	Conservative Estimate	1.49**	2.64**	1 PPB

* Includes estimated secondary PM_{2.5} impact from Section 4.6.1.1 MERP analysis

** Estimated O₃ impact from Section 4.6.1.1 MERP analysis

Notes: ug/m³ = micrograms per cubic meter; ppb = parts per billion

The predicted CO, SO₂, and PM₁₀ are less than their respective SILs. No additional modeling is required for these pollutants and averaging periods.

The predicted 1-hour and Annual NO₂, 24-hour and Annual PM_{2.5}, and 8-hour O₃ concentrations are greater than their respective SILs. Therefore, full impact modeling analyses were conducted for these pollutants and averaging periods.

4.6.1.3 PSD Pre-Application Analysis

To determine if a full impact (refined) modeling analysis and/or pre-construction ambient air monitoring is necessary, a preliminary modeling analysis was completed. The results were compared to the SIL values and Significant Monitoring Concentration (SMC) thresholds.

If the resulting maximum concentration is below the SIL threshold, no further analysis was required for that pollutant and averaging time. If the resulting maximum concentration exceeds the SIL threshold, then full impact modeling was conducted for that pollutant and averaging time.

If the resulting maximum concentration was below the pre-construction SMC threshold, then the facility is required to conduct pre-construction monitoring. If a pollutant exceeded the SMC threshold, the facility may be allowed, with approval by MDNR, to use representative monitoring data from state monitors in lieu of pre-construction ambient monitoring data. Please see Section 4.5 for additional discussion.

The predicted ground-level concentrations and SMC are summarized in Table 4-5.

TABLE 4-5 PSD PRE-CONSTRUCTION MONITORING REQUIREMENT ANALYSIS RESULTS

POLLUTANT	AVERAGING PERIOD	MODELING SCENARIO (SOURCE GROUP)	MAXIMUM PREDICTED CONCENTRATIONS AT EACH RECEPTOR (ug/m ³)			SIGNIFICANT MONITORING CONCENTRATION (ug/m ³)
			FORM	NATURAL GAS	ULSD	
CO	8-Hour	NORM	1 st High (Individual Year in a 5 Year Period)	28.46	23.23	575
		MECL		28.46	23.23	
		START		79.85	347.40	
NO ₂	Annual	NORM	1 st High (Individual Year in a 5 Year Period)	1.01	0.17	14
SO ₂	24-Hour	NORM	1 st High (Individual Year in a 5 Year Period)	0.66	0.062	13
		MECL		0.66	0.060	
PM ₁₀	24-Hour	NORM	1 st High (Individual Year in a 5 Year Period)	2.54	0.51	10
		MECL		2.54	0.48	
Lead	3-Month	NORM	1 st High (Individual Year in a 5 Year Period)	3.00E-05	1.00E-04	0.01
		MECL		3.00E-05	1.20E-04	
		START		3.00E-05	2.20E-04	
Beryllium	24-Hour	NORM	1 st High (Individual Year in a 5 Year Period)	1.00E-05	6.40E-04	0.001
		MECL		1.00E-05	---	
		START		1.00E-05	---	
Mercury	24-Hour	NORM	1 st High (Individual Year in a 5 Year Period)	1.20E-04	9.70E-04	0.25
		MECL		1.20E-04	1.70E-04	
		START		1.20E-04	2.20E-04	

The predicted concentrations for all pollutants in Table 4-5 are expected to be less than the SMC. Pre-construction monitoring data is not required for these pollutants.

As noted in Section 4.5, pre-construction monitoring analysis is not exempted for PM_{2.5}. Evergy proposes the use of existing ambient air monitoring data from a representative monitor to meet the PM_{2.5} pre-construction monitoring data requirement. As discussed in Section 2.3, the proposed project will have net emission increases of NO_x greater than 100 tons per year. Therefore, Evergy also proposes the use of existing ambient air monitoring data from a representative monitor to meet the O₃ pre-construction monitoring data requirement.

A summary of the existing PM_{2.5} and O₃ ambient air monitoring data is provided in Table 4-2.

4.6.2 Full Impact Analysis

4.6.2.1 NAAQS Analysis

Based on the results of the preliminary impact determination, full impact NAAQS modeling analyses are not required for CO, SO₂, and PM₁₀. Full NAAQS modeling is only required for 1-hour and Annual NO₂, 24-hour and Annual PM_{2.5}, and 8-Hour O₃.

The form of the predicted ground-level concentrations from the NAAQS modeling, the form of the background concentrations, and the NAAQS for all criteria pollutants are summarized in Table 4-6. The predicted ground-level concentrations from the NAAQS modeling, the

background concentrations for the project area, and the sum of the two values are summarized in Table 4-7. The predicted total concentration includes on-property sources, off-property sources, and background concentrations. The inventory of off-site interactive sources that are included in the full impacts analysis are discussed in Section 4.4. The final modeling is conservative because the background concentration includes contributions from the offsite modeled sources (i.e., existing sources are double counted). The total impacts are compared to the NAAQS.

TABLE 4-6 NAAQS ANALYSIS – FORM OF MODELING RESULTS AND BACKGROUND CONCENTRATION

POLLUTANT	AVERAGING PERIOD	MAXIMUM PREDICTED CONCENTRATIONS AT EACH RECEPTOR ($\mu\text{g}/\text{m}^3$)	BACKGROUND CONCENTRATION ($\mu\text{g}/\text{m}^3$)	NAAQS ($\mu\text{g}/\text{m}^3$)
NO ₂	1-Hour	5-Year Average of 98 th Percentiles of the Daily 1-Hour Maximums	3-Year Average of 98 th Percentiles of the Daily 1-Hour Maximums	188
	Annual	Annual Arithmetic Mean	Maximum Concentration from the Most Recent 3-Year Period	100
PM _{2.5}	24-Hour	5-Year Average of 98 th Percentiles of the Daily 1-Hour Maximums	3-Year Average of 98 th Percentiles of the 24-Hour Values	35
	Annual	Annual Arithmetic Mean Averaged Over 3 Years	Maximum Concentration from the Most Recent 3-Year Period	9
O ₃	8-Hour	Conservative Maximum (from MERP analysis)	3-Year Average of the 4 th Highest Daily 8-Hour Maximums	70 ppb

TABLE 4-7 NAAQS ANALYSIS RESULTS

POLLUTANT	AVERAGING PERIOD	MODELING SCENARIO (SOURCE GROUP)	MAXIMUM PREDICTED CONCENTRATIONS ($\mu\text{g}/\text{m}^3$)		BACKGROUND CONCENTRATION ($\mu\text{g}/\text{m}^3$)	TOTAL CONCENTRATION ($\mu\text{g}/\text{m}^3$)		NAAQS ($\mu\text{g}/\text{m}^3$)
			NATURAL	ULSD		NATURAL	ULSD	
			GAS			GAS		
NO ₂	1-Hour	NORM	324.20	---	87.7	411.93	---	188
		MECL	324.20	---		411.93	---	
		START	325.69	451.93		413.42	539.66	
	Annual	NORM	15.73	---	30.3	46.03	---	100
PM _{2.5}	24-Hour	NORM	1,625.48	---	19.0	1,644.48	---	35
		MECL	1,625.47	---		1,644.47	---	
	Annual	NORM	368.39	---	8.4	376.79	---	9
O ₃	8-Hour	N/A	1.49	2.95	66.3	67.79	69.25	70 ppb

The total predicted Annual NO₂ is less than its respective NAAQS. No additional modeling is required for that pollutants and averaging period. The total predicted 1-hour NO₂ and 24-hour and Annual PM_{2.5} maximum concentrations require further analysis for the NAAQS compliance

demonstration. The predicted 1-hour NO₂ and 24-hour and Annual PM_{2.5} total concentrations from the MCGS project sources are less than the NAAQS. Therefore, it is clear that the large 1-hour NO₂ and 24-hour and Annual PM_{2.5} modeled concentrations listed in Table 4-7 are caused by off property sources. To establish this fact and demonstrate compliance with the NAAQS, additional analysis was performed.

Exceedances of the NAAQS threshold exist within the significant impact area for the modeled source groups. Additional modeling was conducted to demonstrate that the proposed emissions from MCGS project sources do not cause or contribute to the modeled exceedances. This analysis was conducted using AERMOD's MAXDCONT tool. The analysis was conducted for each receptor that had a predicted exceedance of the NAAQS. For each modeled receptor, the MAXDCONT analysis was conducted for each level of impact, (8th high, 9th high, 10th high, etc.) and terminated when the model obtained a concentration result that is less than the NAAQS.

The results of the MAXDCONT modeling analyses are included in the electronic files. The results show that for all periods with predicted NAAQS exceedances, the contribution of the MCGS project sources does not exceed SILs. This demonstrates that the MCGS sources do not cause or contribute to any of the modeled exceedances of the 1-hour NO₂ and 24-hour and Annual PM_{2.5} NAAQS. No additional modeling demonstrations are required for these pollutants and averaging periods.

Copies of each maximum contributions analysis are included as part of the electronic files submitted to MDNR.

4.6.2.2 PSD Class II Increment Consumption Analysis

For the NO₂, CO, PM₁₀, PM_{2.5}, and SO₂ pollutants, the minor source baseline dates for Nodaway County are triggered on the date when the complete application for this project is submitted.

Based on the results of the preliminary impact determination, full impact PSD increment consumption modeling analyses are required for 24-hour PM_{2.5}, Annual PM_{2.5} and annual NO₂.

The predicted ground-level concentrations and PSD increment consumption limits are summarized in Table 4-8.

TABLE 4-8 PSD INCREMENT CONSUMPTION ANALYSIS RESULTS

POLLUTANT	AVERAGING PERIOD	MODELING SCENARIO (SOURCE GROUP)	MAXIMUM PREDICTED CONCENTRATIONS AT EACH RECEPTOR (µg/m³)		PSD INCREMENT CONSUMPTION LIMIT (µg/m³)
			NATURAL GAS		
PM _{2.5}	24-Hour	NORM	2 ND High (Individual Year in a 3 Year Period)	3,092.33	9
		MECL		3,092.33	
	Annual	NORM	1 st High (Individual Year in a 3 Year Period)	415.10	4
NO ₂	Annual	NORM	Maximum Concentration from the Most Recent 3-Year Period	15.73	25

The total predicted annual NO₂ maximum concentration is below the standard and no further analysis is necessary.

The total predicted 24-hour and Annual PM_{2.5} maximum concentrations require further analysis for the PSD increment consumption compliance demonstration. The predicted 24-hour and Annual PM_{2.5} total concentrations from the MCGS project sources are less than the PSD Increment Consumption Limits. Therefore, it is clear that the large 24-hour and Annual PM_{2.5} modeled concentrations listed in Table 4-8 are caused by off property sources. To establish this fact and demonstrate PSD increment consumption compliance, additional analysis was performed.

Exceedances of the PSD Increment Consumption threshold exist within the significant impact area for the modeled source groups. The results of the modeling analyses are included in the electronic files. The results show that for all periods with predicted PSD exceedances, the contribution of the MCGS project sources does not exceed SILs. This demonstrates that the MCGS sources do not cause or contribute to any of the modeled exceedances of the 24-hour and Annual PM_{2.5} PSD Increment Consumption. No additional modeling demonstrations are required for these pollutants and averaging periods.

Copies of each maximum contributions analysis are included as part of the electronic files submitted to MDNR.

4.6.3 Missouri Ambient Air Quality Standards

Missouri has specific ambient air quality standards for hydrogen sulfide, sulfuric acid, and fluoride. An impacts analysis is required for these pollutants if the project emission rates exceed their respective de minimis thresholds included in the 10 CSR 10-6.020 (3) (A) Table 1.

The proposed project will emit emissions of sulfuric acid. There are no proposed emissions of hydrogen sulfide and fluoride associated with MCGS.

The proposed sulfuric acid emissions exceed the de minimis thresholds included in the 10 CSR 10-6.020 (3) (A) Table 1. Therefore, an impacts analysis was conducted for sulfuric acid to demonstrate compliance with the Missouri Ambient Air Quality Standards (MOAQS).

The predicted ground-level concentrations and MOAQS are summarized in Table 4-9 below.

TABLE 4-9 MISSOURI AIR QUALITY STANDARDS, MOAQS

POLLUTANT	AVERAGING TIME	MODELING SCENARIO (SOURCE GROUP)	MAXIMUM PREDICTED CONCENTRATIONS (µg/m³)		MOAQS (µg/m³)
			NATURAL GAS	ULSD	
Sulfuric Acid	1-Hour	NORM	0.68	0.81	30.0
	24-Hour	NORM	0.10	0.11	10.0

4.6.4 Hazardous Air Pollutant Analysis

Based on the results of the HAP emission analysis, 10 pollutants triggered an RAL review. The predicted ground-level concentrations and the RAL limits are summarized in Table 4-10.

TABLE 4-10 MISSOURI RISK ASSESSMENT LEVELS, RALS

HAP	AVERAGING PERIOD	MODELING SCENARIO (SOURCE GROUP)	MAXIMUM PREDICTED CONCENTRATIONS (µg/m³)		RAL (µg/m³)
			NATURAL GAS	ULSD	
1,3-Butadiene	24-Hour	NORM	2.00E-05	5.60E-04	1.2
		MECL	2.00E-05	7.40E-04	
		START	4.00E-05	1.36E-03	
	Annual	NORM	---	3.00E-05	0.003
		MECL	---	3.00E-05	
		START	---	6.00E-05	
	10 x Annual	NORM	4.00E-05	2.80E-04	0.03
		MECL	4.00E-05	3.20E-04	
		START	4.00E-05	6.40E-04	
Acrolein	24-Hour	NORM	2.30E-04	---	6.9
		MECL	2.90E-04	---	
		START	5.40E-04	---	
	Annual	NORM	1.00E-05	1.00E-05	0.02
		MECL	1.00E-05	1.00E-05	
		START	2.00E-05	1.00E-05	
Arsenic	8-Hour	NORM	1.50E-04	9.50E-04	0.015
		MECL	1.50E-04	1.25E-03	

HAP	AVERAGING PERIOD	MODELING SCENARIO (SOURCE GROUP)	MAXIMUM PREDICTED CONCENTRATIONS (µg/m³)		RAL (µg/m³)
			NATURAL GAS	ULSD	
	24-Hour	START	1.50E-04	2.23E-03	0.015
		NORM	9.00E-05	3.90E-04	
		MECL	9.00E-05	5.10E-04	
		START	9.00E-05	9.30E-04	
	Annual	NORM	1.00E-05	2.00E-05	0.0002
		MECL	1.00E-05	5.60E-04	
		START	1.00E-05	7.40E-04	
	10 x Annual	NORM	5.00E-05	1.36E-03	0.002
		MECL	5.00E-05	3.00E-05	
		START	5.00E-05	3.00E-05	
Beryllium	8-Hour	NORM	1.00E-05	6.00E-05	0.000356
		MECL	1.00E-05	2.80E-04	
		START	1.00E-05	3.20E-04	
	24-Hour	NORM	1.00E-05	6.40E-04	0.02
		MECL	1.00E-05	---	
		START	1.00E-05	---	
	Annual	NORM	---	---	0.0004
		MECL	---	1.00E-05	
		START	---	1.00E-05	
	10 x Annual	NORM	---	1.00E-05	0.004
		MECL	---	9.50E-04	
		START	---	1.25E-03	
Cadmium	8-Hour	NORM	8.30E-04	2.23E-03	0.00889
		MECL	8.30E-04	3.90E-04	
		START	8.30E-04	5.10E-04	
	24-Hour	NORM	5.10E-04	9.30E-04	0.006
		MECL	5.10E-04	2.00E-05	
		START	5.10E-04	2.00E-05	
	Annual	NORM	3.00E-05	4.00E-05	0.001
		MECL	3.00E-05	1.90E-04	
		START	3.00E-05	2.20E-04	
	10 x Annual	NORM	2.90E-04	4.40E-04	0.01
		MECL	2.90E-04	3.00E-05	
		START	2.90E-04	4.00E-05	
Formaldehyde	24-Hour	NORM	3.45E-02	6.00E-05	9.8
		MECL	3.45E-02	1.00E-05	
		START	3.45E-02	1.00E-05	
	Annual	NORM	2.07E-03	3.00E-05	0.08
		MECL	2.08E-03	---	
		START	2.10E-03	---	

HAP	AVERAGING PERIOD	MODELING SCENARIO (SOURCE GROUP)	MAXIMUM PREDICTED CONCENTRATIONS (µg/m³)		RAL (µg/m³)
			NATURAL GAS	ULSD	
	10 x Annual	NORM	2.07E-02	---	0.8
		MECL	2.08E-02	1.00E-05	
		START	2.10E-02	1.00E-05	
Lead	3-Month	NORM	3.00E-05	1.00E-04	0.15
		MECL	3.00E-05	1.20E-04	
		START	3.00E-05	2.20E-04	
Mercury	24-Hour	NORM	1.20E-04	9.70E-04	0.14
		MECL	1.20E-04	1.70E-04	
		START	1.20E-04	2.20E-04	
	Annual	NORM	1.00E-05	4.10E-04	0.07
		MECL	1.00E-05	1.00E-05	
		START	1.00E-05	1.00E-05	
PAH	24-Hour	NORM	8.00E-05	2.00E-05	0.16
		MECL	1.00E-04	8.00E-05	
		START	1.90E-04	1.00E-04	
	Annual	NORM	---	1.90E-04	0.016
		MECL	---	1.47E-03	
		START	1.00E-05	1.95E-03	
	10 x Annual	NORM	4.00E-05	3.56E-03	0.16
		MECL	5.00E-05	1.50E-04	
		START	8.00E-05	1.50E-04	
Selenium	24-Hour	NORM	1.00E-05	1.80E-04	0.54
		MECL	1.00E-05	1.45E-03	
		START	1.00E-05	1.47E-03	
	Annual	NORM	---	1.77E-03	0.54
		MECL	---	7.00E-05	
		START	---	9.00E-05	

The predicted concentrations for all HAPs that triggered an RAL review are below their respective RALs. No additional modeling is required for these pollutants and averaging periods.

5.0 ADDITIONAL IMPACT ANALYSES

Additional impact analyses for criteria pollutants subject to PSD and which will be emitted by the proposed sources evaluated the impacts of air, ground, and water pollution on soils, vegetation, and visibility caused by emissions and from growth associated with the facility.

Impacts from the proposed project will not cause or contribute to adverse effects with respect to visibility, soils, and growth.

5.1 Growth

An in-depth growth analysis is only required if the project would result in a significant shift in population and associated activity into the area (i.e., a population increase on the order of thousands of people). Employment within this area (i.e., within the modeling domain) will not significantly increase because of the proposed project. Approximately 40 permanent jobs are expected at the proposed MCGS after the plant is constructed and operational. It can be concluded that the air quality impacts associated with secondary growth will not be significant because the increase in population will be very small, especially when compared to the overall existing population size of Nodaway County (21,241 as of the 2020 census).

Also, there will not be any significant impacts due to any changes in the population size or density, or changes in the type of development in the area. Therefore, possible adverse impacts from this project are not expected.

5.2 Soils and Vegetation Analysis

5.2.1 Land Use Determination

The proposed MCGS will be located near Barnard, Nodaway County, Missouri. The area surrounding the site is largely agricultural, with some residential and industrial facilities. It is relatively uniform in terms of land use, vegetative cover, and terrain variability.

Auer land use technique was followed to determine the vegetation in the surrounding area. The land use within the total area circumscribed by a 1-kilometer (km) radius circle around the proposed MCGS was classified using National Land Cover Dataset, which was subsequently converted to Auer classification category land types. United States Geological Survey National Land Cover Dataset 2023 land cover data for the modeling domain were input to AERSURFACE (24142).

TABLE 5-1 LAND USE DETERMINATION

LAND COVER ID	LAND COVER DESCRIPTION	AUER CATEGORY BEST FIT	PERCENT
11	Open Water	A5	0.34%
21	Developed, Open Space	R1	2.40%
22	Developed, Low Intensity	R2	4.46%
23	Developed, Medium Intensity	I2	2.77%
24	Developed, High Intensity	I1	1.46%
31	Barren Land (Rock/Sand/Clay)	R2	0.03%
41	Deciduous Forest	A4	5.66%
52	Shrub/Scrub	---	0.06%
81	Pasture/Hay	A2	22.77%
82	Cultivated Crops	A2	60.06%

The emissions from the proposed project will not significantly affect any soils or vegetation within the area (i.e., the modeling domain). 91.29% of the land use in the modeling domain is rural. Most of the rural land is comprised of local cultivated crops that have greater than 95% vegetation, and grasslands/herbaceous plants that have greater than 90% vegetation.

5.2.2 Soils and Vegetation Analysis

Additionally, in accordance with guidance from the MDNR, *Soils and Vegetation Analysis, January 2020*, a seven-step analysis was completed to determine the impact of the proposed MCGS on soils and vegetation in the area (i.e., the modeling domain).

Step 1

Predicted concentrations obtained during the NAAQS compliance demonstration for SO₂, O₃, annual NO₂, beryllium, and lead were compared to Table 1 of the guidance to determine vegetative sensitivity. Additional modeling was conducted for NO₂ (4-hour, 8-hour, and 1-month), and CO. MDNR's Table 1 screening levels and the corresponding modeling results are summarized in Table 5-2.

TABLE 5-2 SCREENING CONCENTRATIONS FOR DIRECT TISSUE EXPOSURE

POLLUTANT	AVERAGING TIME	VEGETATIVE SENSITIVITY (µg/m ³)			MODELING RESULTS (µg/m ³)	
		SENSITIVE	INTERMEDIATE	RESISTANT	NATURAL GAS	ULSD
SO ₂	1-Hour	917	---	---	1.64	0.29
	3-Hour	786	2,096	13,100	1.44	0.27
	Annual	---	18		0.042	0.0036
O ₃	1-Hour	392	686	1,078	1.49 ¹	2.64 ¹
	4-Hour	196	294	686	1.49 ¹	2.64 ¹
	8-Hour	118	294	588	1.49	2.64
NO ₂	4-Hour	3,760	9,400	16,920	61.97	61.94
	8-Hour	3,760	7,520	15,040	25.20	23.94
	1-Month	---	564	---	20.56	1.37
	1-Year	---	94-188	---	1.01	0.17
CO	1-Week	1,800,000	---	18,000,000	13.00	7.95
Hydrogen Sulfide	4-Hour	28000-84000	---	560,000	---	---
Ethylene	3-4-Hour	---	47	---	---	---
	24-Hour	---	1.2	---	---	---
Fluoride	10 Days	---	0.5-10	---	---	---
Beryllium	1-Month	---	0.01	---	0	0
Lead	3-Month	---	1.5	---	3.00E-05	2.20E-04

¹ Values used for 8-hour O₃

Modeling results show that there are no exceedances of the vegetative sensitivity thresholds.

Step 2

The MDNR guidance document does not recommend a direct screen for the synergy between pollutants. As such no additional synergy analysis was performed. However, MCGS has very low SO₂ and ozone modeled impacts which minimizes the possibility of synergy between pollutants.

Step 3

Predicted concentrations of trace elements along with default lifetime and soil depth values were used to calculate deposition concentration. The modeled and calculated values are summarized in Table 5-3.

TABLE 5-3 CALCULATION OF DEPOSITED SOIL CONCENTRATION

POLLUTANT	MAXIMUM ANNUAL CONCENTRATION (X) (µg/m³)		FACILITY LIFETIME (N) (YEARS)	SOIL DEPTH (D) (CM)	CONSTANT (C)	DEPOSIT CONCENTRATION (DC) (PPMW)		SCREENING CONCENTRATION (PPMW)
	NATURAL GAS	ULSD				NATURAL GAS	ULSD	
Arsenic	1.00E-05	4.00E-05	40	3	21.5	2.87E-03	1.15E-02	3
Boron	---	---	40	3	21.5	---	---	0.5
Cadmium	3.00E-05	2.00E-05	40	3	21.5	8.60E-03	5.73E-03	2.5
Chromium	4.00E-05	4.00E-05	40	3	21.5	1.15E-02	1.15E-02	8.4
Cobalt	---	---	40	3	21.5	---	---	---
Copper	---	---	40	3	21.5	---	---	40
Fluoride	---	---	40	3	21.5	---	---	400
Lead	1.00E-05	6.00E-05	40	3	21.5	2.87E-03	1.72E-02	1000
Manganese	1.00E-05	9.00E-05	40	3	21.5	2.87E-03	2.58E-02	2.5
Mercury	1.00E-05	0.00E+00	40	3	21.5	2.87E-03	0.00E+00	455
Nickel	6.00E-05	2.00E-05	40	3	21.5	1.72E-02	5.73E-03	500
Selenium	0.00E+00	1.00E-04	40	3	21.5	0.00E+00	2.87E-02	13
Vanadium	---	---	40	3	21.5	---	---	2.5
Zinc	---	---	40	3	21.5	---	---	---

Modeling results show that there are no exceedances of the screening concentrations.

Step 4

Deposit Concentrations calculated in Step 3 are used to calculate the percentage increase in trace elements. These increases are calculated in Table 5-4.

TABLE 5-4 CALCULATION OF DEPOSITED SOIL CONCENTRATION

POLLUTANT	DEPOSIT CONCENTRATION (DC) (PPMW)		CONSTANT (C)	ENDOGENOUS SOIL CONCENTRATION (ESC) (PPMW)		% INCREASE	
	NATURAL GAS	ULSD		NATURAL GAS	ULSD		
Arsenic	2.87E-03	1.15E-02	100	6	0.05	0.19	
Boron	---	---	100	10	---	---	
Cadmium	8.60E-03	5.73E-03	100	0.06	14.33	9.56	
Chromium	1.15E-02	1.15E-02	100	100	0.01	0.01	
Cobalt	---	---	100	8	---	---	
Copper	---	---	100	20	---	---	
Fluoride	---	---	100	200	---	---	
Lead	2.87E-03	1.72E-02	100	10	0.03	0.17	
Manganese	2.87E-03	2.58E-02	100	850	0.00034	0.0030	
Mercury	2.87E-03	0.00E+00	100	1	0.29	0	
Nickel	1.72E-02	5.73E-03	100	40	0.04	0.01	
Selenium	0.00E+00	2.87E-02	100	0.5	0	5.73	
Vanadium	---	---	100	100	---	---	
Zinc	---	---	100	50	---	---	

The increase in endogenous soil concentrations for arsenic, chromium, lead, manganese, mercury, nickel, and selenium are below 10% threshold. However, the increase for cadmium is slightly over 10%. Note that the 10% increase only occurs at the property boundary. Beyond the property boundary, the increase for cadmium drops below 5%. Cadmium is not expected to have any significant impact on soil quality. Therefore, no further action is required.

Step 5

Data from Table 5-3 and a plant to soil ratio are used to calculate the tissue concentration. These values are presented in Table 5-5.

TABLE 5-5 PLANT TO SOIL CONCENTRATION RATIOS

POLLUTANT	MAXIMUM ANNUAL CONCENTRATION (X) ($\mu\text{g}/\text{m}^3$)		FACILITY LIFETIME (N) (YEARS)	SOIL DEPTH (D) (CM)	CONSTANT (C)	DEPOSIT CONCENTRATION (DC) (PPMW)		SCREENING CONCENTRATION (PPMW)	PLANT: SOIL RATIO (CR)	TISSUE CONCENTRATION (TC) PPMW	
	NATURAL	ULSD				NATURAL	ULSD			NATURAL	ULSD
	GAS					GAS				GAS	
Arsenic	1.00E-05	4.00E-05	40	3	21.5	2.87E-03	1.15E-02	3	1.40E-01	4.01E-04	1.61E-03
Boron	---	---	40	3	21.5	---	---	0.5	5.30E+00	---	---
Cadmium	3.00E-05	2.00E-05	40	3	21.5	8.60E-03	5.73E-03	2.5	1.07E+01	9.20E-02	6.13E-02
Chromium	4.00E-05	4.00E-05	40	3	21.5	1.15E-02	1.15E-02	8.4	2.00E-02	2.29E-04	2.29E-04
Cobalt	---	---	40	3	21.5	---	---	---	1.10E-01	---	---
Copper	---	---	40	3	21.5	---	---	40	4.70E-01	---	---
Fluoride	---	---	40	3	21.5	---	---	400	3.00E-02	---	---
Lead	1.00E-05	6.00E-05	40	3	21.5	2.87E-03	1.72E-02	1000	4.50E-01	1.29E-03	7.74E-03
Manganese	1.00E-05	9.00E-05	40	3	21.5	2.87E-03	2.58E-02	2.5	6.60E-02	1.89E-04	1.70E-03
Mercury	1.00E-05	0.00E+00	40	3	21.5	2.87E-03	0.00E+00	455	2.00E-02	5.73E-05	0.00E+00
Nickel	6.00E-05	2.00E-05	40	3	21.5	1.72E-02	5.73E-03	500	4.50E-02	7.74E-04	2.58E-04
Selenium	0.00E+00	1.00E-04	40	3	21.5	0.00E+00	2.87E-02	13	1.00E+00	0.00E+00	2.87E-02
Vanadium	---	---	40	3	21.5	---	---	2.5	1.00E-02	---	---
Zinc	---	---	40	3	21.5	---	---	---	6.40E-01	---	---

The results of this analysis are used in Step 6.

Step 6

Including results from Tables 3 and 5, deposited concentrations were compared to soil screening levels, and tissue concentrations were compared to dietary and tissue screening levels. These comparisons can be found in Table 5-6.

TABLE 5-6 TRACE ELEMENT ADVERSE IMPACT SCREEN

POLLUTANT	DEPOSIT CONCENTRATION (DC) (PPMW)		SOIL SCREENING LEVEL (PPMW)	TISSUE CONCENTRATION (TC) (PPMW)		DIETARY SCREENING LEVEL (PPMW)	TISSUE SCREENING LEVEL (PPMW)
	NATURAL GAS	ULSD		NATURAL GAS	ULSD		
Arsenic	2.87E-03	1.15E-02	3	4.01E-04	1.61E-03	3.00	0.25
Boron	---	---	0.5	---	---	---	11.00
Cadmium	8.60E-03	5.73E-03	2.5	9.20E-02	6.13E-02	15.00	3.00
Chromium	1.15E-02	1.15E-02	8.4	2.29E-04	2.29E-04	---	1.00
Cobalt	---	---	---	---	---	1.0-3.0	19.00
Copper	---	---	40	---	---	20.0-30.0	0.73
Fluoride	---	---	400	---	---	100.0-300.0	310.00
Lead	2.87E-03	1.72E-02	1000	1.29E-03	7.74E-03	80.0-150.0	126.00
Manganese	2.87E-03	2.58E-02	2.5	1.89E-04	1.70E-03	500.0-5000.0	400.00
Mercury	2.87E-03	0.00E+00	455	5.73E-05	0.00E+00	---	---
Nickel	1.72E-02	5.73E-03	500	7.74E-04	2.58E-04	1000.00	60.00
Selenium	0.00E+00	2.87E-02	13	0.00E+00	2.87E-02	5.0-30.0	100.00
Vanadium	---	---	2.5	---	---	10.0-500.0	---
Zinc	---	---	---	---	---	500.0-1000.0	300.00

The calculated deposit concentrations and tissue concentrations do not exceed any applicable screening levels.

Step 7

In conclusion, since no exceedances were identified in Table 5-6, emissions from the proposed project are not expected to significantly affect any soils or vegetation within the area (i.e., the modeling domain).

5.3 Class II Visibility Impairment

Along with the Class I Visibility Assessment in Section 3.0, an additional assessment of Class II areas was completed. A list of Class II areas was requested from MDNR and provided on July 28, 2025.

Visibility impacts resulting from the proposed MCGS project emissions that could occur in the identified areas were assessed using the USEPA's VISCREEN model in accordance with the *New Source Review Workshop Manual-Prevention of Significant Deterioration and Nonattainment Area Permitting; USEPA, Draft October 1990* guidance and the USEPA's *Workbook for Plume Visual Impact Screening and Analysis; USEPA October 1992*.

The guidance for determining visibility impacts in Class II areas are listed in Table 5-2, below. The first visibility parameter, ΔE , represents the perceptibility of a plume based on the color difference between the plume and a viewing background, such as the light-colored sky, or a darker terrain feature. The second parameter, contrast, represents the difference in light intensity between a given object and the surrounding objects that is caused by the plume.

TABLE 5-2 VISIBILITY PARAMETER SCREENING LEVELS

VISIBILITY PARAMETER	CLASS II SCREENING LEVELS
Relative Sensitivity, ΔE	4.0
Absolute Contrast	0.10

VISCREEN was run for two scenarios, one using natural gas and the other using ULSD. The maximum results for VISCREEN for each location for relative sensitivity and absolute contrast were compared against the above Class II screening levels. Maximum results were from the ULSD scenario for each location. VISCREEN for each location for relative sensitivity and absolute contrast were compared against the above Class II screening levels. The VISCREEN modeling results summarized in Tables 5-3 through 5-6 present estimates of ΔE and absolute contrast against both sky and terrain backgrounds.

TABLE 5-3 VISCREEN RESULTS FOR VISIBILITY IMPACTS IN LOESS BLUFFS NATIONAL WILDLIFE REFUGE

BACKGROUND	THETA	AZIMUTH	DISTANCE (km)	ALPHA	RELATIVE SENSITIVITY VALUE ΔE		ABSOLUTE CONTRAST VALUE	
					SCREENING CRITERIA	PLUME	SCREENING CRITERIA	PLUME
Sky	10	84	32.3	84	4.00	2.975	0.10	0.019
Sky	140	84	32.3	84	4.00	0.947	0.10	-0.022
Terrain	10	84	32.3	84	4.00	1.756	0.10	0.022
Terrain	140	84	32.3	84	4.00	0.333	0.10	0.014

TABLE 5-4 VISCREEN RESULTS FOR VISIBILITY IMPACTS IN ROSECRANS MEMORIAL AIRPORT

BACKGROUND	THETA	AZIMUTH	DISTANCE (km)	ALPHA	RELATIVE SENSITIVITY VALUE ΔE		ABSOLUTE CONTRAST VALUE	
					SCREENING CRITERIA	PLUME	SCREENING CRITERIA	PLUME
Sky	10	84	48.9	84	4.00	2.325	0.10	0.018
Sky	140	84	48.9	84	4.00	0.787	0.10	-0.020
Terrain	10	84	48.9	84	4.00	1.476	0.10	0.018
Terrain	140	84	48.9	84	4.00	0.267	0.10	0.011

TABLE 5-5 VISCREEN RESULTS FOR VISIBILITY IMPACTS IN NORTHWEST MISSOURI REGIONAL AIRPORT

BACKGROUND	THETA	AZIMUTH	DISTANCE (km)	ALPHA	RELATIVE SENSITIVITY VALUE ΔE		ABSOLUTE CONTRAST VALUE	
					SCREENING CRITERIA	PLUME	SCREENING CRITERIA	PLUME
Sky	10	84	14.1	84	4.00	3.999	0.10	0.021
Sky	140	84	14.1	84	4.00	1.096	0.10	-0.021
Terrain	10	84	14.1	84	4.00	2.162	0.10	0.028
Terrain	140	84	14.1	84	4.00	0.429	0.10	0.020

TABLE 5-6 VISCREEN RESULTS FOR VISIBILITY IMPACTS IN SWAN LAKE NATIONAL WILDLIFE REFUGE

BACKGROUND	THETA	AZIMUTH	DISTANCE (km)	ALPHA	RELATIVE SENSITIVITY VALUE ΔE		ABSOLUTE CONTRAST VALUE	
					SCREENING CRITERIA	PLUME	SCREENING CRITERIA	PLUME
Sky	10	84	154.1	84	4.00	0.758	0.10	0.010
Sky	140	84	154.1	84	4.00	0.204	0.10	-0.007
Terrain	10	84	154.1	84	4.00	0.557	0.10	0.006
Terrain	140	84	154.1	84	4.00	0.082	0.10	0.002

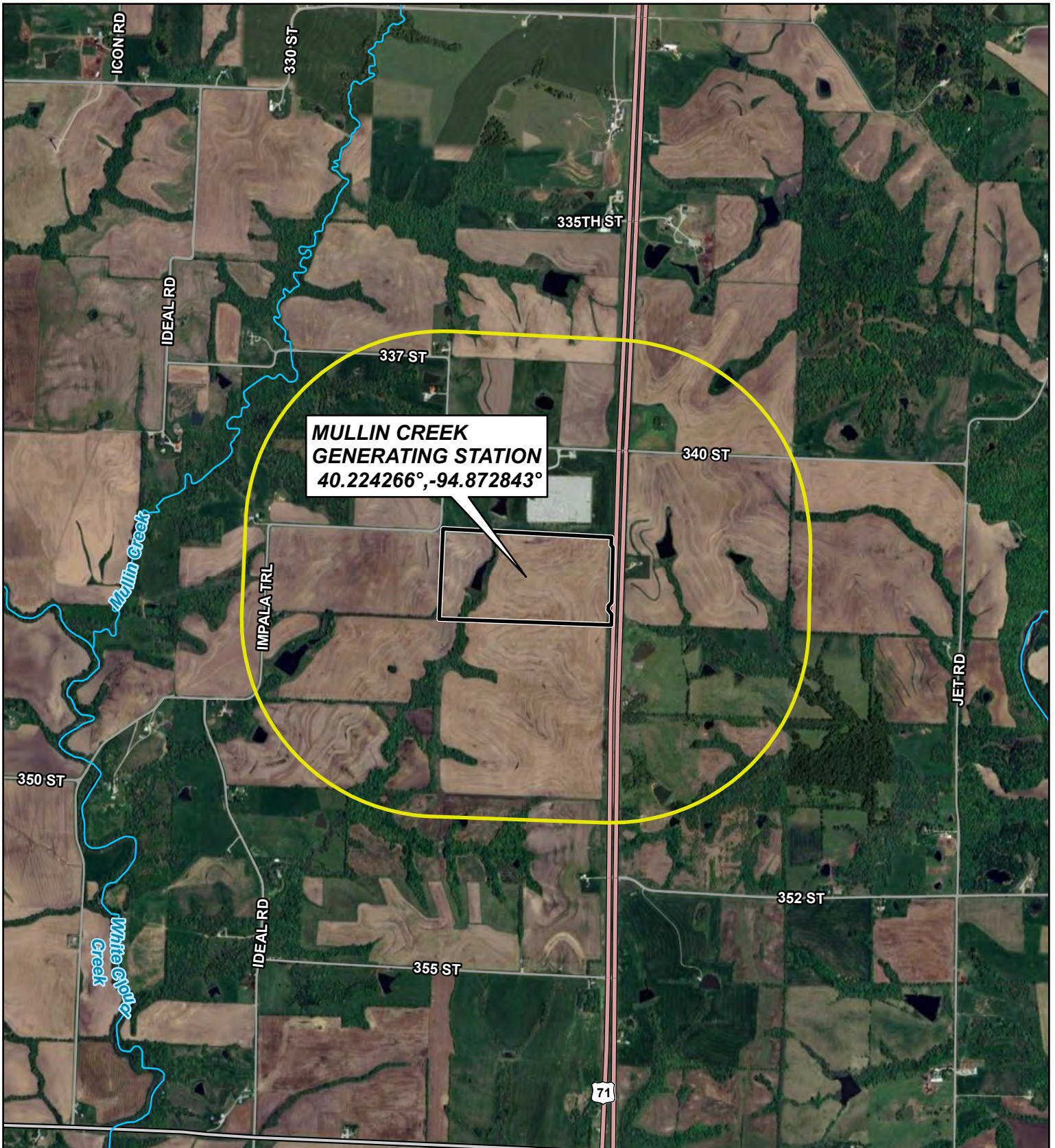
The results of VISCREEN show that the relative sensitivity at the Northwest Missouri Regional Airport exceeds the Class II screening level in one case. For the rest of the relative sensitivity and absolute contrasts, the Class II screening levels are not exceeded. Therefore, emissions from the MCGS are not expected to adversely impact visibility in the provided Class II areas. VISCREEN input and output files are included as part of the electronic files submitted to MDNR.

6.0 MODELING INPUT AND OUTPUT FILES

Electronic copies of the following items are available to submit to MDNR:

- » All input and output modeling files.
- » All files produced by a software entry program.
- » All automatic downwash program input and output files. (BPIP)
- » All meteorological data files.
- » All boundary property files. (AERMAP)
- » All land use determination files. (AERSCREEN)
- » All visibility impairment analysis files. (VISCREEN)

APPENDIX A MAP OF FACILITY AND SURROUNDING AREA



Legend

-  Facility Boundary
-  3000' Radius
-  NHD Stream



0 1,000 2,000
Feet



EVERGY, INC.
MULLIN CREEK
GENERATING STATION

AREA MAP

NODAWAY COUNTY,
MISSOURI



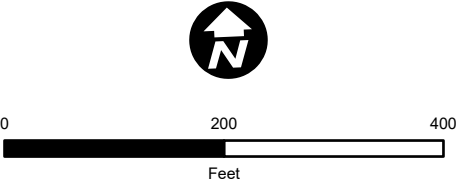
Date: 9/23/2025

APPENDIX B FACILITY LAYOUT



- Legend
- Facility Boundary
 - Point Source
 - Building
 - Tank

Datum: WGS 1984
Map Sources: Google Satellite Basemap



EVERGY, INC.
MULLIN CREEK
GENERATING STATION

PLOT PLAN

NODAWAY COUNTY,
MISSOURI



Date: 9/23/2025

APPENDIX C SOURCE CHARACTERIZATIONS AND RELEASE PARAMETER ASSIGNMENTS

**Evergy
Mullen Creek Energy Center
Modeled Stack Parameters**

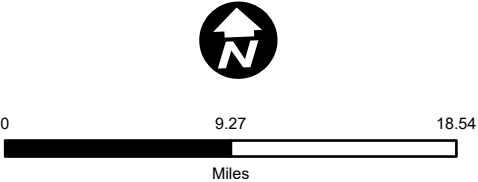
Modeling ID	Source Description	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temp (K)	Exit Velocity (m/s)	Stack Diameter (m)
EP1	SCGT1 (Normal) [Natural Gas]	340739.529	4454340.448	335.510	54.864	699.501	28.008	11.074
EP1a	SCGT1 (MECL) [Natural Gas]	340739.529	4454340.448	335.510	54.864	669.898	23.136	11.074
EP1b	SCGT1 (Startup) [Natural Gas]	340739.529	4454340.448	335.510	54.864	521.849	16.805	11.074
EP1c	SCGT1 (Normal) [Fuel Oil]	340739.529	4454340.448	335.510	54.864	632.141	25.437	11.074
EP1d	SCGT1 (MECL) [Fuel Oil]	340739.529	4454340.448	335.510	54.864	628.888	20.732	11.074
EP1e	SCGT1 (Startup) [Fuel Oil]	340739.529	4454340.448	335.510	54.864	481.434	15.262	11.074
EP3a	Fuel Gas Heater 1	340812.384	4454458.692	330.740	4.572	560.928	16.764	0.254
EP4	Emergency Generator 1	340726.146	4454478.010	327.280	4.420	774.817	75.606	0.457
EP5	Firepump 1 (Horizontal Exit)	340728.143	4454196.683	331.010	1.524	827.594	67.544	0.152
EP6	SCGT2 (Normal) [Natural Gas]	340659.770	4454342.506	334.200	54.864	699.501	28.008	11.074
EP6a	SCGT2 (MECL) [Natural Gas]	340659.770	4454342.506	334.200	54.864	669.898	23.136	11.074
EP6b	SCGT2 (Startup) [Natural Gas]	340659.770	4454342.506	334.200	54.864	521.849	16.805	11.074
EP6c	SCGT2 (Normal) [Fuel Oil]	340659.770	4454342.506	334.200	54.864	632.141	25.437	11.074
EP6d	SCGT2 (MECL) [Fuel Oil]	340659.770	4454342.506	334.200	54.864	628.888	20.732	11.074
EP6e	SCGT2 (Startup) [Fuel Oil]	340659.770	4454342.506	334.200	54.864	481.434	15.262	11.074
EP7a	Fuel Gas Heater 2 ("Carried")	340812.174	4454466.033	330.840	4.572	560.928	16.764	0.254
EP8	Emergency Generator 2	340646.354	4454479.667	326.330	4.420	774.817	75.606	0.457

APPENDIX D PROPERTY BOUNDARY AND RECEPTOR GRID OVERVIEW



- Legend
-  Facility Boundary
 -  Receptor Grid

Datum: UTM 1984
Map Sources: Google Satellite Basemap



EVERGY, INC.
MULLIN CREEK
GENERATING STATION

RECEPTOR GRID

NODAWAY COUNTY,
MISSOURI



Date: 8/1/2025

APPENDIX E MERP ANALYSIS

Evergy - Nodaway, MO - Two SCGTs
Nodaway, Co., Missouri
Secondary PM_{2.5} Calculation

Table 1: PM_{2.5} SILs

Averaging Period	SIL (µg/m ³)
24-Hour	1.2
Annual	0.13

Table 2a: MERP Analysis - Scenario 1

Hypothetical Source								Nodaway MO Two SCGT's Analysis		
Source ID	Release Type	Emissions (TPY)	Pollutant	EPA Photochemical Modeling Impacts (µg/m ³)		MERT (TPY)		Project Emissions (TPY)	Estimated Secondary PM _{2.5} Impacts (µg/m ³)	
				24-Hour	Annual	24-Hour	Annual		24-Hour	Annual
Ray Co.	H ¹	500	NO _x	0.0494	0.00187	12,156	34,706	494.072	0.0488	0.00185
Ray Co.	H ¹	500	SO ₂	0.0780	0.00240	7,688	27,071	55.824	0.00871	0.000268
									0.0575	0.00212

Table 2b: MERP Analysis - Scenario 2

Hypothetical Source								Nodaway MO Two SCGT's Analysis		
Source ID	Release Type	Emissions (TPY)	Pollutant	EPA Photochemical Modeling Impacts (µg/m ³)		MERT (TPY)		Project Emissions (TPY)	Estimated Secondary PM _{2.5} Impacts (µg/m ³)	
				24-Hour	Annual	24-Hour	Annual		24-Hour	Annual
Ray Co.	H ¹	500	NO _x	0.0996	0.00359	6,025	18,110	883.691	0.176	0.00634
Ray Co.	H ¹	500	SO ₂	0.0780	0.00240	7,688	27,071	56.567	0.00883	0.000272
									0.185	0.00662

1. Release Type used is 90 m due to main stack heights being closer to 90 m than 10 m.

Evergy - Nodaway, MO - Two SCGTs
Nodaway, Co., Missouri
Secondary PM2.5 Calculation

Table 1: O3 SILs

Averaging Period	SIL (ppb)
8-Hour	1

Table 2: MERP Analysis - Scenario 1

Table 2: MERP Analysis						Analysis	
Source ID	Release Type	Emissions (TPY)	Pollutant	EPA Photochemical Modeling Impacts (µg/m3)	MERT (TPY)	Project Emissions (TPY)	Estimated O ₃ Impacts
				8-Hour	8-Hour		8-Hour
Ray	H ¹	500	NOx	1.387	361	494.072	1.370
Ray	L ²	500	VOC	0.144	3,477	411.109	0.118
							1.488

Table 2: MERP Analysis - Scenario 2

Table 2: MERP Analysis						Analysis	
Source ID	Release Type	Emissions (TPY)	Pollutant	EPA Photochemical Modeling Impacts (µg/m3)	MERT (TPY)	Project Emissions (TPY)	Estimated O ₃ Impacts
				8-Hour	8-Hour		8-Hour
Ray	H ¹	1000	NOx	2.423	413	883.691	2.142
Ray	L ²	500	VOC	0.144	3,477	1,728.089	0.497
							2.639

1. Release Type used is 90 m due to main stack heights being closer to 90 m than 10 m.
2. Although main stack heights are closer to 90 m than 10 m, the only hypothetical impact available is at a 10 m stack height.
3. Although Project Emissions are closer to the 1,000 tpy hypothetical impact, the only value available is at the 500 tpy emission rate.

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