

Commonwealth of Kentucky
Division for Air Quality
STATEMENT OF BASIS / SUMMARY

Conditional Major, Operating
Permit: F-24-016
Farmers Rural Electric Cooperation
175 Donnelley Drive,
Glasgow, KY 42141
3/26/2024

Kayla Thurman, Reviewer
SOURCE ID: 21-009-00084
AGENCY INTEREST: 136727
ACTIVITY: APE20240001

Table of Contents

SECTION 1 – SOURCE DESCRIPTION 2
SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM..... 3
SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS 4
SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS 6
SECTION 5 – PERMITTING HISTORY 7
SECTION 6 – PERMIT APPLICATION HISTORY..... 8
APPENDIX A – ABBREVIATIONS AND ACRONYMS 8

SECTION 1 – SOURCE DESCRIPTION

SIC Code and description: 4911, Electric Services (fossil fuel power generation)

Single Source Det. Yes No If Yes, Affiliated Source AI:

Source-wide Limit Yes No If Yes, See Section 4, Table A

28 Source Category Yes No If Yes, Category:

County: Barren

Nonattainment Area N/A PM₁₀ PM_{2.5} CO NO_x SO₂ Ozone Lead
If yes, list Classification:

PTE* greater than 100 tpy for any criteria air pollutant Yes No

If yes, for what pollutant(s)?

PM₁₀ PM_{2.5} CO NO_x SO₂ VOC

PTE* greater than 250 tpy for any criteria air pollutant Yes No

If yes, for what pollutant(s)?

PM₁₀ PM_{2.5} CO NO_x SO₂ VOC

PTE* greater than 10 tpy for any single hazardous air pollutant (HAP) Yes No

If yes, list which pollutant(s): List the pollutant(s)

PTE* greater than 25 tpy for combined HAP Yes No

*PTE does not include self-imposed emission limitations.

Description of Facility:

Farmers Rural Electric Cooperative Corporation is located at 175 Donnelley Drive in Glasgow, Kentucky. The facility consists of two diesel-fired engines and a 1,200 gallon fuel tank. These engines are not considered emergency engines.

SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM

Permit Number: F-24-016

Activities: APE20240001

Received: February 29, 2024

Application Complete Date(s): March 20, 2024

Permit Action: Initial Renewal Significant Rev Minor Rev Administrative

Construction/Modification Requested? Yes No

Previous 502(b)(10) or Off-Permit Changes incorporated with this permit action Yes No

Description of Action:

- Renewal of operating permit

F-24-016 Emission Summary		
Pollutant	2022 Actual (tpy)	PTE F-24-016 (tpy)
CO	0.52	148.36
NOx	1.944	558.51
PT	0.04	12.17
PM ₁₀	0.03	10.00
PM _{2.5}	0.03	9.70
SO ₂	0.0009	0.26
VOC	0.21	61.09
Lead	0.00004	0.01
Greenhouse Gases (GHGs)		
Carbon Dioxide	100.26	28,798
Methane	0.004	1.15
Nitrous Oxide	0.0008	0.23
CO ₂ Equivalent (CO ₂ e)	100.60	28,896
Hazardous Air Pollutants (HAPs)		
Combined HAPs:	-	0.18

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS

Emission Units 01 and 02 – Diesel-Fired Generator Engines				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
CO	23 ppmvd at 15% O ₂ or reduce CO emissions by 70% or more, except during startup	40 CFR 63, Subpart ZZZZ, Table 2d(3).	116.4755 lb/Mgal, AP-42 Table 3.4-1	Testing evry 3 years of 8,760 hours, whichever is first.
CO	Sourcewide 90 TPY	To Preclude 401 KAR 52:020	116.476 lb/Mgal, AP-42 Table 3.4-1	Engines are limited to a combined total of 1,410 hours per year, calculated as a twelve-month rolling total.
NO _x			438.496 lb/Mgal, AP-42 Table 3.4-1	
Initial Construction Date: 12/1/2005 and manufactured prior to 2001				
Process Description: Two Caterpillar 3516B 2,876 hp diesel-fired engines used during peak energy demand to supply power through the FRECC region. The engines are limited to a combined total of 1,410 hours of operation per year calculated on a twelve-month rolling total. The engines are equipped with a catalyst for control of CO emissions.				
Applicable Regulation: 401 KAR 63:002 , Section 2(4)(eeee), 40 CFR 63.6580 through 63.6675, Tables 1a through 8, and Appendix A (Subpart ZZZZ), <i>Natioonal Emission Standards for Hazardou Air Pollutants for Stationay Reciprocating Internal ombustion Engines</i>				
Non-Applicable Regulation: 40 CFR 60, Subpart IIII is not applicable as the engines were manufactured prior to 2001. The permit was requested permit shield in their initial application filed under AI 57202.				
Comments: The limit on the hours of operation has been requested by the applicant under AI 57202 to preclude 401 KAR 51:017 and 401 KAR 52:020.				

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS (CONTINUED)

Testing Requirements/Results

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Frequency	Test Method	Permit Limit	Test Result	Thruput and Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
01 & 02	None	CO (ppmvd at 15% O ₂)	40 CFR 63, Subpart ZZZZ	Initial	US EPA Method 10	23 ppmvd at 15% O ₂	EU01: 12.29 ppmvd CO at 15% O ₂ EU02: 7.45 ppmvd CO at O ₂	EU: 1708 ekW EU02: 1699 ekW	CMN2014 0001*	2/14/2014
01 & 02	None	CO (ppmvd at 15% O ₂)	40 CFR 63, Subpart ZZZZ	Every 3 years or 8,760 hours, whichever happens first	US EPA Method 10	23 ppmvd at 15% O ₂	EU01: 11.40 ppmvd CO at 15% O ₂ EU02: 9.07 ppmvd CO at 15% O ₂	EU: 2133.33 HP EU02: 2139.33 HP	CMN2019 0001	4/18/2019
01 & 02	None	CO (ppmvd at 15% O ₂)	40 CFR 63, Subpart ZZZZ	Every 3 years or 8,760 hours, whichever happens first	US EPA Method 10	23 ppmvd at 15% O ₂	EU01: 8.50 ppmvd CO at 15% O ₂ EU02: 5.93 ppmvd CO at 15% O ₂	EU: 2069.1 HP EU02: 2071.07 HP	CMN2022 0001	4/19/2022

Footnotes: *Initial test is located under AI 57202

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS

Table A - Group Requirements:

Emission and Operating Limit	Regulation	Emission Unit
90 tpy of NOx emissions	To preclude 401 KAR 52:020 and 401 KAR 51:017	Source-wide
90 tpy of CO emissions	To preclude 401 KAR 52:020	Source-wide

Table B - Summary of Applicable Regulations:

Applicable Regulations	Emission Unit
401 KAR 63:002, Section 2(4)(eeee), 40 CFR 63.6580 through 63.6675, Tables 1a through 8, and Appendix A (Subpart ZZZZ), <i>National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines</i>	EU 01 & 02

Table C - Summary of Precluded Regulations:

N/A

Table D – Summary of Non Applicable Regulations:

Non Applicable Regulations	Emission Unit
401 KAR 60:005, Section 2(2)(dddd), 40 CFR 60.4200 through 60.4219, Tables 1 through 8 (Subpart IIII), <i>Stabdards of Performance for Stationary Compression Ignition Internal Combustion Engines</i>	EU 01 & 02

Air Toxic Analysis

N/A

Single Source Determination

N/A

SECTION 5 – PERMITTING HISTORY

Permit	Permit Type	Activity#	Complete Date	Issuance Date	Summary of Action	PSD/Syn Minor
F-18-052	Initial	APE2018001	1/5/2018	9/3/2019	Initial Construction Permit	N/A

- The emissions units and facility was originally located at 504 S Bradway, Glasgow under AI 57202

SECTION 6 – PERMIT APPLICATION HISTORY

None.

APPENDIX A – ABBREVIATIONS AND ACRONYMS

AAQS	– Ambient Air Quality Standards
BACT	– Best Available Control Technology
Btu	– British thermal unit
CAM	– Compliance Assurance Monitoring
CO	– Carbon Monoxide
Division	– Kentucky Division for Air Quality
ESP	– Electrostatic Precipitator
GHG	– Greenhouse Gas
HAP	– Hazardous Air Pollutant
HF	– Hydrogen Fluoride (Gaseous)
MSDS	– Material Safety Data Sheets
mmHg	– Millimeter of mercury column height
NAAQS	– National Ambient Air Quality Standards
NESHAP	– National Emissions Standards for Hazardous Air Pollutants
NO _x	– Nitrogen Oxides
NSR	– New Source Review
PM	– Particulate Matter
PM ₁₀	– Particulate Matter equal to or smaller than 10 micrometers
PM _{2.5}	– Particulate Matter equal to or smaller than 2.5 micrometers
PSD	– Prevention of Significant Deterioration
PTE	– Potential to Emit
SO ₂	– Sulfur Dioxide
TF	– Total Fluoride (Particulate & Gaseous)
VOC	– Volatile Organic Compounds