

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

Title V, Operating
Permit: V-21-048 R1

East Kentucky Power Cooperative (EKPC), Inc.
3095 Commerce Parkway
LaGrange, KY 40031

July 30, 2026
Kayla Thurman, Reviewer

SOURCE ID:	21-185-00036
AGENCY INTEREST:	39541
ACTIVITY:	APE20260001

Table of Contents

SECTION 1 – SOURCE DESCRIPTION	2
SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM.....	3
SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS	6
SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS	18
SECTION 5 – PERMITTING HISTORY	20
SECTION 6 – PERMIT APPLCIATION HISTORY	21
APPENDIX A – ABBREVIATIONS AND ACRONYMS	22

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: Oldham

Nonattainment Area ☒ N/A ☐ PM₁₀ ☐ PM_{2.5} ☐ CO ☐ NO_x ☐ SO₂ ☐ Ozone ☐ Lead

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

PTE* greater than 25 tpy for combined HAP ☐ Yes ☒ No

*PTE does not include self-imposed emission limitations.

Description of Facility:

East Kentucky Power Cooperative, Inc (EKPC) owns and operates the Bluegrass Generating Station located in LaGrange, Kentucky. EKPC Bluegrass Generating Station is an electric power generating station consisting of three Siemens-Westinghouse 501FD2 natural gas-fired simple cycle combustion turbines; Emissions Unit 01 (EU 01), Emissions Unit 02 (EU 02) and Emissions Unit 03 (EU 03). Each unit has a maximum continuous rating of 2,076 million British thermal units per hour (MMBtu/hr) and is equipped with dry-low nitrogen oxides (NO_x) burners and water injection system.

The facility is classified as a Title V major source of air pollution based on the potential to emit more than 100 tons per year (tpy) of carbon monoxide (CO) and nitrogen oxides (NO_x). The facility is not considered a 28 source category, as it consists of simple cycle turbines, which are not steam generating units. Emissions of NO_x are limited to 99 tons per year, as Oldham county was considered to be nonattainment for ozone when the initial application was submitted.

SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM

Permit Number: V-21-048 R1

Activities: APE20260001

Received: May 4, 2026

Application Complete Date: July 14, 2026

Permit Action: ☐ Initial ☐ Renewal ☒ Significant Rev ☐ Minor Rev ☐ Administrative

Construction/Modification Requested? ☐ Yes ☒ No NSR Applicable? ☐ Yes ☒ No

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

Description of Action:

On May 4, 2026, the Division received an application for the significant revision for the facility, including:

- Increasing source-wide NO_x emission limit from 95 tpy to 99 tpy.
- Increasing source-wide CO emission limit from 245 tpy to 249 tpy.

By increasing the source-wide synthetic minor limits, the facility hopes to allow itself the ability to operate when electricity is most necessary, maximizing the electric output when human life may be most at risk. Bluegrass Generating Station only operates at times of peak demand, and the total annual hours of operation are effectively capped by the NO_x synthetic minor limit. Since 2021, the maximum actual NO_x emissions reported by the facility was 88.79 tons. Compliance with the source-wide emission limitations will be demonstrated as described in **Section D** permit V-21-048 R1, using CEMS data for emission units 01, 02, and 03 and a calculation for units 04, 05, and 06. The facility is required to calculate and record the NO_x and CO emissions, as reported by CEMS, on a monthly basis, and add this value to the prior consecutive 11-months of data to maintain a 12-month rolling total. If the 12-month rolling total emissions of NO_x exceeds 90 tons, the facility shall calculate and record emissions on a daily basis. The 12-month rolling total of emissions will then be updated on a daily basis until the rolling total is below 90 tons of NO_x. If the 12-month rolling total of emissions of CO exceeds 225 tons, the facility shall calculate and record emissions on a daily basis. The 12-month rolling total of emissions will be updated on a daily basis until the rolling total is below 225 tons of CO.

Records of the twelve month rolling total NO_x and CO emissions are to be reported to the Division in the facility's quarterly reports. Previously, the facility was required to calculate emissions on strictly a monthly basis. The facility has demonstrated that they are capable of maintaining compliance with the existing more stringent emission limits with less stringent monitoring and recordkeeping requirements, so the Division is confident in the ability to demonstrate compliance with the new limits and increased monitoring as the limit is approached.

- Removal #2 Fuel Oil as an “emergency backup” fuel and instead listing #2 Fuel Oil as a secondary fuel for EUs 01, 02, and 03, and waiving the performance test requirement.

The goal of this revision is to provide maximum flexibility in fuel type usage based on what is most cost effective for the rate payer, while maintaining compliance with appropriate

emission limitations and applicable environmental regulations. Fuel oil was previously permitted as an emergency fuel for emission units 01, 02, and 03 (the turbines). As an emergency fuel, the turbines could only combust fuel oil “during circumstances, such as natural gas supply curtailment or breakdown of delivery system, that make it impossible to fire natural gas in the gas turbine” [40 CFR 60.331 Definition of *emergency fuel*]. During winter storm Fern (January 23-27, 2026), natural gas availability was limited, but pipeline conditions did not warrant curtailment. Despite the dramatic increase in price of natural gas and the availability of fuel oil on site for much less, this was not considered an emergency situation so the facility was required to continue purchasing and firing natural gas at the increased rate throughout the storm. In order to prevent a similar situation from arising, the Division has agreed to list fuel oil as a back up fuel, rather than an emergency fuel. Additionally, under 40 CFR 60.8(b)(4), the Division has the option to waive the initial performance test requirement because the permittee has demonstrated by other means to the Administrator’s satisfaction that the facility is in compliance with the standard. The Division is choosing to waive the initial performance test for operating the turbines with fuel oil. The unit is equipped with NO_x CEMS that have demonstrated below the GG limit (111 ppm) while combusting fuel oil over the past 5 years, with a maximum reading of 66.4 ppm, occurring during startup. While operating at peak load combusting fuel oil, the NO_x CEMS typically shows concentrations of approximately 20 ppm, which is well below the 111 ppm limit. Additionally, initial performance testing would require operation of the turbines on fuel oil when it is not otherwise necessary. The facility still intends to primarily utilize natural gas when operating the turbines and only combust fuel oil when absolutely necessary to protect the rate payers. Requiring testing on all three units would result in generating emissions when the unit would otherwise likely not be operating under those conditions. The testing would also produce emissions of NO_x and CO that would count towards the source-wide emissions limit, thus potentially limiting the facility from operating when it is later needed for electric generation. Testing would also be a great financial burden passed on to the rate payer, while not providing additional environmental protection, and the intention of this project is to provide maximum financial and environmental protection for the rate payers. The CEMS data adequately demonstrates the facility’s ability to comply with the limits, making performance testing unnecessary.

- 502(b)(10) APE20240001: Addition of a 1,000,000 gallon #2 Fuel Oil storage tank to insignificant activities.

V-21-048 R1 Emission Summary				
Pollutant	2025 Actual (tpy)	Previous PTE V-21-048 (tpy)	Change (tpy)	Revised PTE V-21-048 R1 (tpy)
CO ¹	190.68	245*	4.00	249*
NO _x ²	88.79	95*	4.00	99*
PT	5.32	12.66	5.63	18.29
PM ₁₀	5.32	12.66	5.63	18.29
PM _{2.5}	5.32	12.66	5.63	18.29
SO ₂	0.71	10.57	19.95	30.52
VOC	4.80	11.94	6.03	17.97
Greenhouse Gases (GHGs)				
Carbon Dioxide	130,108	222706	82733	305439
Methane	10.10	16.39	-0.84	15.55
Nitrous Oxide	3.52	5.60	-1.06	4.54
CO ₂ Equivalent (CO ₂ e) ³	131,323.6	224647	82430	307077
Hazardous Air Pollutants (HAPs)				
Formaldehyde	0.83	1.31	-0.30	1.01
Toulene	0.15	0.23	0.00	0.23
Combined HAPs:	-	2.07	0.15	2.22
Non-hazardous Air Pollutants				
Sulfuric Acid	0.10	1.5	4.07	5.57

¹Emissions of CO are limited to 249 tpy

²Emissions of NO_x are limited to 99 tpy

³CO₂e for V-21-048 R1 and 2025 actuals were calculated using the GWPs of 28 for Methane and 265 for Nitrous Oxide as listed in Table A-1 to 40 CFR 98, Subpart A.

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS

Emission Units 01, 02, and 03 – Natural Gas-Fired, Simple Cycle Combustion Turbines				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
NO _x	111 ppm by volume @ 15% oxygen (dry basis)	40 CFR 60.332(a)(1)	NG: 57.25 lb/MMscf, Vendor Data FO: 22.74 lb/1000 gal, Vendor Data	NO _x CEMS
SO ₂	0.015% by volume @ 15% oxygen (dry basis) OR 0.8% Sulfur by Weight	40 CFR 60.333(a) and (b)	NG: 1.48 lb/MMscf, Vendor Data FO: 6.89 lb/1000 gal, Vendor Data	Certified fuel flow monitoring system
<p>Initial Construction Date: October 2000 (Emission Units 01 and 02) June 2001 (Emission Unit 03)</p> <p>Process Description: Fossil fuel combustion for electrical power generation.</p> <p>Model: Siemens-Westinghouse 501FD Maximum Continuous Rating: 2,076 MMBtu/hr rated heat input capacity (each), 208 MW rated capacity output (each) Primary Fuel: Natural Gas Secondary Fuel: No. 2 Ultra Low Sulfur Diesel Fuel Oil Control Equipment: Dry-Low NO_x Burners & Water Injection on all three units, High Temperature Selective Catalytic Reduction (SCR) on Units 01 & 02</p> <p>Applicable Regulation: 401 KAR 51:160, <i>NO_x requirements for large utility and industrial boilers</i>, applicable to NO_x budget units that are electric generating units or industrial; boiler or turbines. 401 KAR 51:210, <i>CAIR NO_x annual trading program</i>, applicable to CAIR NO_x units in Kentucky that are subject to 40 C.F.R. 96.104. 401 KA7R 51:220, <i>CAIR NO_x ozone season trading program</i>, applicable to CAIR NO_x Ozone Season units in Kentucky subject to 40 C.F.R. 96.304, a new industrial boiler or turbine, or a new or existing electric generating unit including a fossil-fueled boiler, combustion turbine, or combined cycle system serving a generator with a nameplate capacity greater than twenty-five (25) megawatts of electricity and offering some electricity for sale. 401 KAR 51:230, <i>CAIR SO₂ trading program</i>, applicable to CAIR SO₂ sources and CAIR SO₂ units under the CAIR SO₂ Trading Program located in Kentucky that are subject to 40 C.F.R. 96.204. 401 KAR 51:240, <i>Cross-State Air Pollution Rule (CSAPR) NO_x annual trading program</i> applies to CSAPR</p>				

Emission Units 01, 02, and 03 – Natural Gas-Fired, Simple Cycle Combustion Turbines

NO_x annual units in Kentucky subject to 40 CFR 97.404 as published July 1, 2017.

401 KAR 51:260, *Cross-State Air Pollution Rule (CSAPR) SO₂ group 1 trading program* applies to CSAPR SO₂ Group 1 units in Kentucky subject to 40 CFR 97.604 as published July 1, 2017.

401 KAR 52:060, *Acid rain permits*, applies to affected sources and affected units under the Acid Rain Program. The regulation incorporates by reference federal acid rain provisions codified in 40 CFR parts 72 to 78.

401 KAR 60:005, Section 2(2)(pp), 40 C.F.R. 60.330 to 60.335 (Subpart GG), *Standards of Performance for Stationary Gas Turbines* applies to stationary gas turbines with a heat input at peak load equal or greater than 10.7 gigajoules (10 million Btu) per hour, based on the lower heating value of the fuel fired.

40 CFR Part 75, *Continuous Emissions Monitoring (CEM)*, establishes general requirements for the installation, certification, operation, and maintenance of continuous emission or opacity monitoring systems and applies to each affected unit subject to Acid Rain emission limitations or reduction for SO₂ or NO_x.

40 CFR 97, Subpart GGGGG, *CSAPR NO_x Ozone Season Group 3 Trading Program*, applies to any stationary fossil-fuel-fired combustion turbine serving at any time, on or after January 1, 2005, a generator with a nameplate capacity of more than 25 MWe producing electricity for sale.

Precluded Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality*

To preclude this regulation, the source has voluntarily accepted federally-enforceable limitations on emissions of CO of 249 tpy.

State Origin Requirements:

401 KAR 63:020, *Potentially hazardous matter or toxic substances* applies to each affected facility which emits or may emit potentially hazardous matter or toxic substances as defined in Section 2 of 401 KAR 63:020, provided such emissions are not elsewhere subject to the provisions of the administrative regulations of the Division for Air Quality.

Comments:

Emissions for CO, NO_x, PT, PM₁₀, PM_{2.5}, SO₂ and VOC are calculated according to vendor data, and all other emissions are calculated from AP-42 Chapter 3.1.

The permittee of the gas turbine shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems and devices; and all other information required by 401 KAR 59:005 recorded in a permanent form suitable for inspection [401 KAR 59:005, Section 3].

According to 40 CFR 60.8(b)(4), “performance tests shall be conducted and data reduced in accordance with the test methods and procedures contained in 40 CFR 60, Subpart GG unless the Administrator waives the requirement for performance tests because the owner or operator of a source has demonstrated by other means to the Administrator’s satisfaction that the affected facility is in compliance with the standard.” The Division grants an initial performance test waiver upon the use of fuel oil something about the agreed orderfor as long as the permittee demonstrates continuous compliance with the 40 CFR 60, Subpart GG

Emission Units 01, 02, and 03 – Natural Gas-Fired, Simple Cycle Combustion Turbines

emission limitations through the use of NO_x CEMS or this is just in the compliance demonstration method.

The nitrogen oxides CEM shall be used in lieu of the water to fuel monitoring system for reporting excess emissions in accordance with 40 CFR 60.334(b)(3)(iii). The calibration of the water to fuel monitoring device required in 40 CFR 60.334(a) will be replaced by the 40 CFR 75 certification tests of the nitrogen oxides CEMS monitor.

Process Weight Rate for 401 KAR 59:010 is based on a natural gas density of 1 lb/23.8ft³ and Fuel Oil Density of 7.05 lb/gal from AP-42, Appendix A. Maximum process weight rate for natural gas is 42.54 tons/hr and for fuel oil is 54.65 tons/hr.

Regulations That Do Not Apply:

401 KAR 60:005, Section 2(2)(ffff), 40 C.F.R. 60.4300 through 60.4420, Table 1 (Subpart KKKK), *Standards of Performance for Stationary Gas Turbines*, is not applicable based upon definition. According to 40 CFR 60.14(a) and within the meaning of section 111 of the Clean Air Act, a modification means any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies. Upon modification, an existing facility shall become an affected facility for each pollutant to which a standard applies and for which there is an increase in the emission rate to the atmosphere. However, in 40 CFR 60.14(e), the following shall not by themselves be considered modifications. In 40 CFR 60.14(e)(4), use of an alternative fuel or raw material if, prior to the date any standard under this part becomes applicable to that source type, as provided by § 60.1, the existing facility was designed to accommodate that alternative use. A facility shall be considered to be designed to accommodate an alternative fuel or raw material if that use could be accomplished under the facility's construction specifications as amended prior to the change. Conversion to coal required for energy considerations, as specified in section 111(a)(8) of the Clean Air Act, shall not be considered a modification. EKPC contacted Siemens to confirm that the turbines listed in permit V-16-018 R1 were designed at the time of installation to accommodate the use of both natural gas and/or fuel oil. In Appendix D of EKPC application (APE20180001) there is a letter from Siemens stating these turbines were designed to support natural gas and fuel oil. The regulation is also not applicable based on the definition of reconstruction. Pursuant to 40 CFR 60.15(b), "Reconstruction" means the replacement of components of an existing facility to such an extent that: (1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, and (2) It is technologically and economically feasible to meet the applicable standards set forth in this part. EKPC used the original cost and adjusted the cost for April of 2018 to determine the cost of the turbines in 2018. The total cost for these turbines is \$139,253,780, while the projected cost for the fuel oil storage tanks and deliver systems is \$62,000,000. Based on the costed list in the application reconstruction definition does not apply.

401 KAR 60:005, Section 2(2)(jjjj), 40 C.F.R. 60.5508 through 60.5580, Tables 1 through 3 (Subpart TTTT), *Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units*, is not applicable. Refer to 40 CFR 60 Subpart KKKK for reasoning.

401 KAR 63:002, Section 2(4)(dddd), 40 C.F.R. 63.6080 through 63.6175, Tables 1 through 7 (Subpart YYYY), *National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines*. This facility is minor source for HAPS thus the regulation does not apply.

Emission Unit 04 – Forced Draft Indirect Water Bath Heater				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	0.56 lb/MMBtu	401 KAR 59:015, Section 4(1)(a)	7.6 lb/MMscf; AP-42 Table 1.4-2	Assumed based upon natural gas combustion
Opacity	20%	401 KAR 59:015, Section 4(2)	N/A	Assumed based upon natural gas combustion
SO ₂	3.0 lb/MMBtu	401 KAR 59:015, Section 5(1)(a)1.	0.6 lb/MMscf; AP-42 Table 1.4-2	Assumed based upon natural gas combustion
<p>Initial Construction Date: 2000</p> <p>Process Description: This heater is used to raise the temperature of the natural gas coming out of the ground piping to insure it remains above the dew point to prevent liquids from reaching the combustion nozzles. The natural gas heater utilizes a liquid bath, heated by a fire-tube to heat a process coil submerged in a glycol bath.</p> <p>Model: Gas Tach Heater Maximum Continuous Rating: 5 MMBtu/hr Fuel: Natural Gas Control Equipment: None</p> <p>Applicable Regulation: 401 KAR 59:015, <i>New indirect heat</i> exchangers applies to indirect heat exchangers having a heat input capacity greater than 1 MMBtu/hr for which construction commenced on or after April 9, 1972.</p> <p>Comments: Emissions from the heater are estimated using emission factors from AP-42 for small (<100 MMBtu/hr) wall-fired boilers in Chapter 1.4.</p> <p>Source-wide heat input for determining 59:015 limits is 5 MMBtu/hr.</p>				

Emission Units 05 & 06 – Diesel-Fired Emergency RICEs

Manufacture Date: 2001

Process Description:

In the event of a loss of all electricity, EU 05 automatically starts and provides backup power to the battery chargers, control room power, air compressors, and microprocessor based controls. EU 06 is a part of the fire protection system for the facility. The pump intake is connected to the site fire water supply tank, and provides water flow at a high pressure to the sprinkler system and fire hydrants throughout the plant.

Model:	Caterpillar 3306B Emergency Generator (EU 05) Cummins 6BTA5.9-F1 Emergency Fire Pump (EU 06)
Maximum Continuous Rating:	382 hp (EU 05) 208 hp (EU 06)
Fuel:	No. 2 Ultra Low Sulfur Diesel Fuel Oil
Control Equipment:	None

Applicable Regulation:

401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 to 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ), National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, applicable to stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand. A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

Comments:

The permittee shall operate and maintain the engines according to the manufacturer's emission-related operating and maintenance instructions, or develop and follow the permittee own maintenance plan which shall provide, to the extent practicable, for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions [40 CFR 63.6625(e)].

401 KAR 60:005 Section 2(2)(dddd), 40 C.F.R. 60.4200 to 60.4219, Tables 1 to 8 (Subpart IIII), *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*
This subpart does not apply to units constructed prior to July 11, 2005

Emissions from the engines are calculated using the generic emission factors provided in AP-42 Chapter 3.3.

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	Low NOx Burner	NOx, lb/MMBtu	40 CFR 60.8	Annually (RATA)	Method 7E		2.35	165 MW	CMN20200002	8/18/2020
		NOx, ppm					2.57			
		NOx, ppm @15% O ₂					0.40			
	None	CO, ppm			Method 10		0.22			
		O ₂ , %			Method 3A		0.04			
02	Low NOx Burner	NOx, lb/MMBtu	40 CFR 60.8		Method 7E		3.72			8/19/2020
		NOx, ppm					3.24			
		NOx, ppm @15% O ₂					0.69			
	None	CO, ppm			Method 10		0.17			
		O ₂ , %			Method 3A		0.06			
03	Low NOx Burner	NOx, lb/MMBtu	40 CFR 60.8	Method 7E		4.62	8/20/2020			
		NOx, ppm				4.10				
		NOx, ppm @15% O ₂				0.76				
	None	CO, ppm		Method 10		0.35				
		O ₂ , %		Method 3A		0.04				

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	Low NOx Burner	NOx, lb/MMBtu	40 CFR 60.8	Annually (RATA)	Method 7E		3.79	165.88 MW	CMN20200001	8/20/2019
		NOx, ppm					0.40			
		NOx, ppm @15% O ₂					4.17			
	None	CO, ppm			Method 10		0.35			
		O ₂ , %			Method 3A		0.01			
	02	Low NOx Burner	NOx, lb/MMBtu		40 CFR 60.8	Method 7E				
NOx, ppm							0.29			
NOx, ppm @15% O ₂							2.29			
None		CO, ppm			Method 10		0.16			
		O ₂ , %			Method 3A		0.02			
03		Low NOx Burner	NOx, lb/MMBtu		40 CFR 60.8	Method 7E		0.74		166.03 MW
	NOx, ppm						0.12			
	NOx, ppm @15% O ₂			1.60						
	None	CO, ppm		Method 10		0.52				
		O ₂ , %		Method 3A		0.08				

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	Low NOx Burner	NOx, lb/MMBtu	40 CFR 60.8	Annually (RATA)	Method 7E		2.43	166.8 MW	CMN20190001	8/30/2018
		NOx, ppm					3.50			
		NOx, ppm @15% O ₂					4.48			
	None	CO, ppm			Method 10		0.06			
		O ₂ , %			Method 3A		0.665			
02	Low NOx Burner	NOx, lb/MMBtu	40 CFR 60.8		Method 7E		1.605	167.4 MW	CMN20190002	8/29/2018
		NOx, ppm					1.596			
		NOx, ppm @15% O ₂					2.564			
	None	CO, ppm			Method 10		0.105			
		O ₂ , %			Method 3A		0.558			
03	Low NOx Burner	NOx, lb/MMBtu	40 CFR 60.8	Method 7E		2.845	CMN20190003		8/31/2018	
		NOx, ppm				2.884				
		NOx, ppm @15% O ₂				2.841				
	None	CO, ppm		Method 10		0.935				
		O ₂ , %		Method 3A		0.557				

01	Low NOx Burner	NOx, lb/MMBtu	40 CFR 60.8	N/A	Method 7E		7.26	132 MW	CMN20180001	11/16/2017
		NOx, ppm					0.89			
		NOx, ppm @15% O ₂					6.69			
	None	CO, ppm			Method 10		2.27			
		O ₂ , %			Method 3A		0.001			
02	Low NOx Burner	NOx, lb/MMBtu	40 CFR 60.8		Method 7E		1.150			11/9/2017
		NOx, ppm					0.254			
		NOx, ppm @15% O ₂					2.106			
	None	CO, ppm			Method 10		1.144			
		O ₂ , %			Method 3A		0.152			
03	Low NOx Burner	NOx, lb/MMBtu	40 CFR 60.8	Annually (RATA)	Method 7E		4.126	168 MW	CMN20180001	11/8/2017
		NOx, ppm					1.302			
		NOx, ppm @15% O ₂					4.493			
	None	CO, ppm			Method 10		0.211			
		O ₂ , %			Method 3A		0.031			

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	Low NOx Burner	NOx, lb/MMBtu	40 CFR 60.8		Method 7E		1.31	128 MW	CMN20170002	N/A				
		NOx, ppm					0.94							
		NOx, ppm @15% O ₂					1.07							
	None	CO, ppm			Method 10		2.77							
		O ₂ , %			Method 3A		0.47							
02	Low NOx Burner	NOx, lb/MMBtu	40 CFR 60.8		Method 7E		2.42							
		NOx, ppm					1.00							
		NOx, ppm @15% O ₂					3.21							
	None	CO, ppm			Method 10		7.69							
		O ₂ , %			Method 3A		0.84							
03	Low NOx Burner	NOx, lb/MMBtu	40 CFR 60.8		Method 7E		1.71	170 MW						
		NOx, ppm					1.26							
		NOx, ppm @15% O ₂					1.69							
	None	CO, ppm			Method 10		6.02							
		O ₂ , %			Method 3A		0.47							

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
03	Low NOx Burner	NOx, lb/MMBtu	40 CFR 60.8	Annually	Method 7E		2.21	171.0 MW	CMN20160001	7/29/2015
		NOx, ppm					1.46			
		NOx, ppm @15% O ₂					2.30			
	None	CO, ppm			Method 10		0.39			
		O ₂ , %			Method 3A		0.73			
03	Low NOx Burner	NOx, lb/MMBtu	40 CFR 60.8	N/A	Method 7E		2.17	167.8 MW	CMN20150001	8/19/2009
		NOx, ppm					7.95			
		NOx, ppm @15% O ₂					1.75			
		NOx, lb/hr					5.76			
	None	CO, ppm			Method 6C		0.69			
		CO, ppm @15%O ₂					0.69			
		CO, lb/hr					0.69			
		O ₂ , %			Method 2G		0.40			
01	Low NOx Burner	NOx, lb/MMBtu	40 CFR 60.8	Initial	Method 7E		0.003	168 MW	CMN20090002	N/A
	None	O ₂ , %			Method 3A		0.53			
		CO, ppm			Method 10		1.6			

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
02	Low NOx Burner	NOx, lb/MMBtu	40 CFR 60.8	Initial	Method 7E		6.1	168 MW	CMN20090002	N/A
	None	O ₂ , %			Method 3A		0.49			08/18/2009
		CO, ppm			Method 10		2			
03	Low NOx Burner	NOx, lb/MMBtu	40 CFR 60.8		Method 7E		3.64	170 MW		N/A
	None	O ₂ , %			Method 3A		0.53			
		CO, ppm					0.1			
02	None	CO Startup, lbs			Method 10		1618.5	0-143 MW	CMN20090001	N/A
		CO Shutdown, lbs					514.7	160.8-0.1 MW		

Footnotes:

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS

Table A – Group Requirements:

Emission and Operating Limit	Regulation	Emission Unit
249 tpy of CO emissions (including during start-up and shutdown)	401 KAR 52:020, Section 10 and Self-imposed to preclude 401 KAR 51:017	Source-wide
99 tpy of NO _x emissions	Self-imposed to preclude 401 KAR 51:017	Source-wide

Table B – Summary of Applicable Regulations:

Applicable Regulations	Emission Unit
401 KAR 51:160 , <i>NO_x requirements for large utility and industrial boilers</i>	01, 02 & 03
401 KAR 51:210 , <i>CAIR NO_x annual trading program</i>	01, 02 & 03
401 KAR 51:220 , <i>CAIR NO_x ozone season Trading Program</i>	01, 02 & 03
401 KAR 51:230 , <i>CAIR SO₂ trading program</i>	01, 02 & 03
401 KAR 52:060 , <i>Acid rain permits</i>	01, 02 & 03
401 KAR 63:020 , <i>Potentially hazardous matter or toxic substances</i>	01, 02 & 03
401 KAR 60:005, Section 2(2)(ss) , 40 C.F.R. 60.330 to 60.335 (Subpart GG), <i>Standards of Performance for Stationary Gas Turbines</i>	01, 02 & 03
40 CFR 75 , <i>Continuous Emissions Monitoring (CEM)</i>	01, 02 & 03
40 CFR Part 97, Subpart AAAAA , <i>CSAPR NO_x Annual Trading Program</i>	01, 02 & 03
40 CFR Part 97, Subpart BBBBB , <i>CSAPR NO_x Ozone Season Group 1 Trading Program</i>	01, 02 & 03
40 CFR Part 97, Subpart CCCCC , <i>CSAPR SO₂ Group 1 Trading Program</i>	01, 02 & 03
40 CFR Part 97, Subpart EEEEE , <i>CSAPR NO_x Ozone Season Group 2 Trading Program</i>	01, 02 & 03
401 KAR 59:015 , <i>New indirect heat exchangers</i>	04
401 KAR 63:002, Section 2(4)(eeee) , 40 CFR 63.6580 to 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ), <i>National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines</i>	05 & 06

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS (CONTINUED)

Table C – Summary of Precluded Regulations:

Precluded Regulations	Emission Unit
401 KAR 51:017 , <i>Prevention of significant deterioration of air quality</i>	01, 02 & 03

Table D – Summary of Non Applicable Regulations:

N/A

Air Toxic Analysis

401 KAR 63:020, *Potentially Hazardous Matter or Toxic Substances*

The Division for Air Quality (Division) has performed SCREEN View on August 3, 2026 of potentially hazardous matter or toxic substances (Formaldehyde, Manganese, Sulfuric Acid) that may be emitted by the facility based upon the process rates, material formulations, stack heights and other pertinent information provided by the applicant. Based upon this information, the Division has determined that the conditions outlined in this permit will assure compliance with the requirements of 401 KAR 63:020.

Single Source Determination

N/A

SECTION 5 – PERMITTING HISTORY

Permit	Permit Type	Activity #	Complete Date	Issuance Date	Summary of Action	PSD/Syn Minor
F-99-028	Conditional Major	--	--	--	Initial	Syn Minor
V-00-052	Title V	APE20050001	5/13/2000	6/5/2001	Scanned Historic Permit-5 year	
V-05-080		APE20050002	12/22/2005	7/11/2006	Renewal	
V-11-005		APE20110001	4/8/2011	9/19/2011	Renewal	N/A
V-11-005 R1		APE20160001	2/1/2016	3/4/2016	Admin Amend	
V-16-018		APE20160002	5/17/2016	3/3/2017	Renewal	
V-16-018 R1		APE20180001	6/27/2018	1/13/2019	Significant Revision add fuel oil as back up fuel for the turbines	Syn Minor
V-21-048	Title V	APE20210001	1/13/2022	1/3/2023	Title V Renewal	N/A

SECTION 6 – PERMIT APPLICATION HISTORY

Permit Number: V-21-048

Activities: APE20210001

Received: September 2, 2021

Application Complete Date(s): January 13, 2022

Permit Action: ☐ Initial ☒ Renewal ☐ Significant Rev ☐ Minor Rev ☐ Administrative

Construction/Modification Requested? ☐ Yes ☒ No NSR Applicable? ☐ Yes ☒ No

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

Description of Action:

On September 2, 2021, the Division for Air Quality (Division) received an application from East Kentucky Power Cooperative, Inc. (EKPC) for renewal of its Title V permit for the Bluegrass Generating Station. There have been no new changes at the facility since the issuance of V-16-018 R1.

V-21-048 Emission Summary				
Pollutant	2020 Actual (tpy)	Previous PTE V-16-018 R1 (tpy)	Change (tpy)*	Revised PTE V-21-048 (tpy)
CO	170.78	285.1	0.0	285.1
NO _x	34.01	136.5	0.0	136.5
PT	4.21	25.5	0.0	25.5
PM ₁₀	4.21	25.5	0.0	25.5
PM _{2.5}	4.21	25.5	0.0	25.5
SO ₂	0.23	14.9	0.0	14.9
VOC	4.00	23.3	0.0	23.3
Greenhouse Gases (GHGs)				
Carbon Dioxide	19,037.88	97,113	453,451	550,564
Methane	4.95	18.1	23.9	42
Nitrous Oxide	0.97	3.4	11.1	14.5
CO ₂ Equivalent (CO ₂ e)	--	98,601.5	457,344.5	555,946.4
Hazardous Air Pollutants (HAPs)				
Formaldehyde	0.31	3.4	0.0	3.4
Sulfuric Acid	0.76	1.5	0.0	1.5
Toulene	0.13	0.6	0.0	0.6
Combined HAPs:	1.129	4.7	1.9	6.6

*Increase in PTE due to calculation errors made in previous Pollutants of Concern (POC) spreadsheet for V-16-018 R1. No changes have occurred at the facility.

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