

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 2129-AR-1 AFIN: 72-01792

1. PERMITTING AUTHORITY:

Arkansas Department of Environmental Quality
 5301 Northshore Drive
 North Little Rock, Arkansas 72118-5317

2. APPLICANT:

Arkansas Electric Cooperative Corporation—Elkins CT Plant
 AR Hwy 16 and Washington County Rd 49
 Elkins, Arkansas 72727

3. PERMIT WRITER:

Lauren Featherston

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Fossil Fuel Electric Power Generation
 NAICS Code: 221112

5. ALL SUBMITTALS:

The following is a list of ALL permit applications included in this permit revision.

Date of Application	Type of Application (New, Renewal, Modification, De Minimis/Minor Mod, or Administrative Amendment)	Short Description of Any Changes That Would Be Considered New or Modified Emissions
11/6/2019	De Minimis	SN-07 is no longer in operation and SN-11 is a new standby diesel engine that is replacing it

6. REVIEWER'S NOTES:

The Elkins CT Plant of Arkansas Electric Cooperative Corporation (AECC) submitted a De Minimis application to remove a 600 kW emergency diesel engine, SN-07, and replace it with a 400 kW stand-by diesel generator, SN-11. Annual permitted emission rates increased by 4.2 tpy of CO, 0.007 tpy of Formaldehyde, and 0.13 tpy of Total HAPs. Annual permitted emission rates decreased by 0.3 tpy of PM, 0.3 tpy of PM₁₀, 2.3 tpy of SO₂, 3.7 tpy of VOC, and 2.1 tpy of NO_x.

A natural gas meter and a water meter is installed on each CT, and AECC will comply with all maintenance activities required by NSPS Subpart KKKK as practiced at other AECC CT facilities with NSPS Subpart GG and the Acid Rain provisions.

Because the capacity of each CT is less than 25 MW, they are not subject to EPA's Acid Rain regulations 40 CFR Part 72.7 (a)(1). The facility is also not subject to 40 CFR Part 60 Subpart GG because it is subject to 40 CFR Part 60 Subpart KKKK. This facility is also not major source of HAPS therefore it is not subject to §60.6085 of 40 CFR 63 Subpart YYYY.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

This facility's last inspection was conducted on July 10, 2019. This inspection revealed no violations at the time.

8. PSD/GHG APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N
If yes, were GHG emission increases significant? N

b) Is the facility categorized as a major source for PSD? N
• *Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list*

If yes for 8(b), explain why this permit modification is not PSD.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
SN-01 - SN-06	NO _x & SO ₂	NSPS Subpart KKKK
SN-11	PM/PM ₁₀ , NO _x , VOC, and CO	NSPS III and NESHAPS <i>ZZZZ</i>

10. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? N

(Note - permit shields are not allowed to be added, but existing ones can remain, for minor modification applications or any Regulation 18 requirement.)

If yes, are applicable requirements included and specifically identified in the permit? N
If not, explain why.

For any requested inapplicable regulation in the permit shield, explain the reason why it is not applicable in the table below.

Source	Inapplicable Regulation	Reason
N/A		

11. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

12. AMBIENT AIR EVALUATIONS:

The following are results for ambient air evaluations or modeling.

a) NAAQS

A NAAQS evaluation is not required under the Arkansas State Implementation Plan, National Ambient Air Quality Standards, Infrastructure SIPs and NAAQS SIP per Ark. Code Ann. § 8-4-318, dated March 2017 and the ADEQ Air Permit Screening Modeling Instructions.

b) Non-Criteria Pollutants:

The non-criteria pollutants listed below were evaluated. Based on Department procedures for review of non-criteria pollutants, emissions of all other non-criteria pollutants are below thresholds of concern.

1st Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Department has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m³), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m ³)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Acrolein	0.2288	0.02516	0.008334	Y
Formaldehyde*	15	1.65	0.8905	Y
POM	0.2	0.022	6.31E-04	Y

*Use of Alternate TLV based upon an ADEQ Memo from October 1998

c) H₂S Modeling:

A.C.A. §8-3-103 requires hydrogen sulfide emissions to meet specific ambient standards. Many sources are exempt from this regulation, refer to the Arkansas Code for details.

Is the facility exempt from the H₂S Standards N

If exempt, explain: This facility does not emit H₂S.

Pollutant	Threshold value	Modeled Concentration (ppb)	Pass?
H ₂ S	20 parts per million (5-minute average*)		
	80 parts per billion (8-hour average) residential area		
	100 parts per billion (8-hour average) nonresidential area		

*To determine the 5-minute average use the following equation

$$C_p = C_m (t_m/t_p)^{0.2} \text{ where}$$

C_p = 5-minute average concentration

C_m = 1-hour average concentration

t_m = 60 minutes

t_p = 5 minutes

13. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01, 02, 03, 04, 05, 06	AP-42 §63.4365 Manufacturer Data Testing AP-42 Table 3.1-3	PM/PM ₁₀ : 0.0066 lb/MMBtu SO ₂ : 0.06 lb/MMBtu VOC: 0.021 lb/MMBtu CO: 25 lb/hr NO _x : 32.2 lb/hr (Limit : 42 ppm @15% O ₂ or 2.0 lb/MW hr) HAPs: Varied	None	-	Burn natural gas only. VOC is uncontrolled. NO _x is controlled using water injection to limit NO _x emissions. Modified or reconstructed turbine firing natural gas.
08, 09, 10	AP-42 Manufacturer Data	PM/PM ₁₀ : 0.00991 MMBtu/hp*hr SO ₂ : 0.06 lb/MMBtu VOC: 0.8 g/hp*hr CO: 1.7 g/hp*hr NO _x : 2.6 g/hp*hr	None	-	
11	AP-42 Table 3.3-1 and Table 3.3-2 Table 1 of §1039.101	PM/PM ₁₀ : 0.066 lb/MMBtu SO ₂ : 0.06 lb/MMBtu VOC: 0.021 lb/MMBtu CO: 25 lb/hr NO _x : 32.2 lb/hr HAPs: Varied	Selective Catalytic Reducer and Urea	-	Diesel fuel only

14. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
01, 02, 03, 04, 05, 06	NO _x	20	12 months no to exceed 14 months	Conform to Subpart KKKK
	CO	10	5 years	Department Guidance

15. MONITORING OR CEMS:

The permittee must monitor the following parameters with CEMS or other monitoring equipment (temperature, pressure differential, etc.)

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
01, 02, 03, 04, 05, 06	NO _x	Water meter and pipeline natural gas flowmeter. Control NO _x emissions: Install, calibrate, maintain, and operate a continuous monitoring system recording fuel consumption and water to fuel ratio resulting from performance test.	Continuous	N
01, 02, 03, 04, 05, 06	SO ₂	Pipeline natural gas fuel only. Maintaining on site a current, valid purchase contract, tariff sheet or transportation contract for the pipeline natural gas.	Yearly	N

16. RECORDKEEPING REQUIREMENTS:

The following are items (such as throughput, fuel usage, VOC content, etc.) that must be tracked and recorded.

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
Facility-Wide	Natural gas usage	1,104 MMscf per rolling 12 months	Monthly	N
11	Hours of Operation	2500 hours per rolling 12 months	Monthly	N
11	Fuel Type Purchased	See Specific Condition #13	Monthly	N

Permit #: 2129-AR-1

AFIN: 72-01792

Page 8 of 8

20. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

The following is a list of all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
2129-A

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Minor Source

Revised 03-11-16

Facility Name: Arkansas Electric
 Cooperative Corporation - Elkins CT
 Plant
 Permit Number: 2129-AR-1
 AFIN: 72-01792

			<u>Old Permit</u>	<u>New Permit</u>
\$/ton factor	23.93	Permit Predominant Air Contaminant	94.4	92.3
Minimum Fee \$	400	Net Predominant Air Contaminant Increase	-2.1	
Minimum Initial Fee \$	500			
Check if Administrative Amendment	<input type="checkbox"/>	Permit Fee \$	<u>400</u>	
		Annual Chargeable Emissions (tpy)	<u>92.3</u>	

Pollutant (tpy)	Old Permit	New Permit	Change
PM	4.3	4	-0.3
PM ₁₀	4.3	4	-0.3
PM _{2.5}	0	0	0
SO ₂	36.5	34.2	-2.3
VOC	9.1	5.4	-3.7
CO	71.6	75.8	4.2
NO _x	94.4	92.3	-2.1
Acrolein	0.01	0.01	0
Formaldehyde	0.443	0.45	0.007
Total HAPs	0.45	0.58	0.13