

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1842-AOP-R7 AFIN: 60-01380

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Arkansas Electric Cooperative Corporation - Harry L. Oswald Generating Station
17400 Highway 365 South
Wrightsville, Arkansas 72183

3. PERMIT WRITER:

John Mazurkiewicz

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, Deminimis/Minor Mod, or Administrative Amendment)	Short Description of Any Changes That Would Be Considered New or Modified Emissions
2/23/2018	Minor Modification	Increase the permitted hours of operation for the generator (SN-08) to 1,250 hours per rolling twelve month period, and install an oxidation catalyst system for CO control.

6. REVIEWER'S NOTES:

None.

7. COMPLIANCE STATUS:

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

There are no current enforcement actions against the facility.

8. PSD/GHG APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? No.
If yes, were GHG emission increases significant? N/A.

b) Is the facility categorized as a major source for PSD? Yes.

- *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.

This is not a major modification as defined in 40 C.F.R. § 52.21, and PSD review is not required.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
SN-01 thru SN-07 Turbine w/duct burner	PM ₁₀ VOC CO NO _x	BACT
SN-01 thru SN-07 Turbine w/duct burner	NO _x	NSPS Db
SN-01 thru SN-07 Turbine w/duct burner	SO ₂ NO _x	NSPS GG
SN-08	HAPs	NESHAP ZZZZ
SN-10		

10. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? Yes.

(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? Yes.
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
SN-01 -SN-07	40 CFR Part 64	Because none of the emission units use a control device as defined under Part 64.
SN-08 - SN-10	40 CFR Part 64	Because none of the emission units have a potential pre-control device emissions in the amounts of tons per year required to classify the unit as a major source under Part 70.
Cooling Tower (SN-09)	40 CFR Part 63 Subpart Q	The facility is not a major source of HAPs. The facility does not operate the cooling tower with chromium based water treatment chemicals.
Duct Burners (SN-01 - SN-07)	40 CFR 60.49b(g) and (b)	Pursuant to 40 CFR 60.48b(h) a continuous monitoring system for NOx is not required for the duct burners. Therefore these two paragraphs do not apply because the provisions are applicable to affected facilities required to install a continuous monitoring system.

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:

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?
Acetaldehyde	45.04	4.9544	0.0002	Yes
Acrolein	0.23 ^a	0.0253	0.0013	No
Benzene	1.59	0.1749	0.0880	Yes
1,3-Butadiene	4.42	0.4862	0.0704	Yes
Formaldehyde	1.5	0.165	3.3516	No
Naphthalene	54.43	5.9873	0.0013	Yes
PAH	0.2	0.022	0.0732	No
Propylene Oxide	4.75	0.5225	0.1888	Yes
Toluene	75.4	8.294	0.6330	Yes
Xylene	434.19	47.7609	0.5721	Yes

^a STEL ceiling Value.

2nd Tier Screening (PAIL)

AERMOD air dispersion modeling was performed on the estimated hourly emissions from the following sources, in order to predict ambient concentrations beyond the property boundary. The Presumptively Acceptable Impact Level (PAIL) for each compound has been deemed by the Department to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

Pollutant	(PAIL, µg/m ³) = 1/100 of Threshold Limit Value	Modeled Concentration (µg/m ³)	Pass?
Acrolein	2.3	0.0036	Yes
Formaldehyde	15	0.1946	Yes
PAH	2	0.0522	Yes

c) H₂S Modeling: N/A.

13. CALCULATIONS:

SN	Emission Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01-06	Vendor Data	PM 0.0052 lb/MMBTU VOC 0.0005 lb/MMBtu CO 66 ppmvd@15% O ₂ NO _x 25 ppmvd@15% O ₂	None	N/A	Uses steam injection to limit NO _x emissions
	Test Data	Formaldehyde, acrolein, and PAH			
	AP-42 Chapter 3.1	All other HAPs			
07	Vendor Data	PM 0.0061 lb/MMBtu VOC 0.0006 lb/MMBtu CO 50 ppmvd@15% O ₂ NO _x 9 ppmvd@15% O ₂	None	N/A	Facility uses Dry Low NO _x
08	AP-42 Table 3.4-1	PM ₁₀ 0.0007 lb/hp-hr SO ₂ 4E-4 lb/hp-hr VOC 6E-4 lb/hp-hr CO 5.5E-3 lb/hp-hr NO _x 0.024 lb/hp-hr	CO Oxidation Catalyst	70%	
09	EPA Report	31.3% dispersion factor 4000 lb PM/1E6 lb water	None		
10	AP-42	PM 0.1 lb/MMBTU SO ₂ 0.084 lb/MMBTU VOC 2.1 lb/MMBtu CO 0.99 lb/MMBTU NO _x 1.63 lb/MMBTU	None	N/A	

14. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
01-07	PM ₁₀ VOC	5 25A	5 yrs	To confirm BACT limits

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)
01-07	SO ₂	continuous monitoring systems	N/A	N/A
	CO	continuous monitoring systems	Continuously	N/A
	NO _x	continuous monitoring systems	Continuously	N/A
	Sulfur content of fuel	N/A*	N/A	N/A
	fuel nitrogen content	N/A*	N/A	N/A

* EPA allowed the permittee to use Part 75 CEMS and data gathering methods in place of the requirements of these Part 60 requirements.

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)
01-07	Firing Natural Gas only	No limit, will be at capacity	Monthly	N
08	Hours of Operation	1,250	Monthly	Y
	Diesel Sulfur Content	0.05% weight	Monthly	Y
	Subpart ZZZZ recordkeeping	Reduce CO emissions by 70 percent or more	Continuous	Y
09	Total Dissolved Solids	4000 ppm	Monthly	N
10	Hours of Operation	500	Monthly	Y

17. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01-07	5%	Natural gas use	natural gas only
08	20%	Department standards	method 9 readings
09	20%	Department standards	dissolved solids limit along with annual inspections
10	20%	Department standards	method 9 readings

18. DELETED CONDITIONS:

Former SC	Justification for removal
	None

19. GROUP A INSIGNIFICANT ACTIVITIES:

The following is a list of Insignificant Activities including revisions by this permit.

Source Name	Group A Category	Emissions (tpy)						HAPs	
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs		
							Single	Total	
9.9 MMBtu/hr Natural Gas Fired Fuel Heater	A-1	0.4	0.1	0.5	3.7	4.4	N/A		
EDG Fuel Storage Tank (500 gallons)	A-3/A-13	-	-	-	-	-	-	-	
Emergency Fire Pump Fuel Tank (360 gallons)	A-3/A-13	-	-	-	-	-	-	-	

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 #
1842-AOP-R6

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Facility Name: Arkansas Electric Cooperative Corporation
 - Harry L. Oswald Generating Station
 Permit Number: 1842-AOP-R7
 AFIN: 60-01380

\$/ton factor	23.93	Annual Chargeable Emissions (tpy)	899.6
Permit Type	Minor Mod	Permit Fee \$	500

Minor Modification Fee \$	500
Minimum Modification Fee \$	1000
Renewal with Minor Modification \$	500
Check if Facility Holds an Active Minor Source or Minor Source General Permit	<input type="checkbox"/>
If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$	0
Total Permit Fee Chargeable Emissions (tpy)	7.2
Initial Title V Permit Fee Chargeable Emissions (tpy)	

HAPs not included in VOC or PM:

Chlorine, Hydrazine, HCl, HF, Methyl Chloroform, Methylene Chloride, Phosphine, Tetrachloroethylene, Titanium Tetrachloride

Air Contaminants:

All air contaminants are chargeable unless they are included in other totals (e.g., H2SO4 in condensible PM, H2S in TRS, etc.)

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
PM		185.4	185.6	0.2	0.2	185.6
PM ₁₀		180.3	180.5	0.2		
PM _{2.5}		0	0	0		
SO ₂		13.3	13.4	0.1	0.1	13.4
VOC		74.4	74.5	0.1	0.1	74.5
CO		818.8	817.3	-1.5		
NO _x		619.3	626.1	6.8	6.8	626.1
Total HAPs	<input type="checkbox"/>	19.6	19.64	0.04		