

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1165-AOP-R9 AFIN: 24-00012

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Arkansas Electric Cooperative Corporation - Thomas B. Fitzhugh Generating Station  
6006 Lock and Dam Road  
Ozark, Arkansas 72949

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
9/27/2018	Modification	None.

6. REVIEWER'S NOTES:

BACT for CO at the Westinghouse 501D5A Combustion Turbine & HRSG Duct Burners (SN-06) was determined to be good combustion practices and design, and numerical limits were established for both the combustion turbine and duct burners. These numerical limits were not intended to apply, and are not achievable, during startup. This permit includes alternative conditions for CO during startup and shutdown. The ambient air analysis was reviewed; concentrations are below air quality significance levels for CO.

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. The last inspection was conducted on February 2, 2017. No areas of concern or compliance issues were noted. A review of ECHO revealed two informal enforcement actions in the last five years.

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.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
SN-06	PM/PM <sub>10</sub> SO <sub>2</sub> CO NO <sub>x</sub>	PSD NSPS Subpart Db NSPS Subpart GG
SN-08	NO <sub>x</sub> , CO, HAPs	NSPS Subpart IIII NESHAP Subpart ZZZZ
SN-10	HAPs	NESHAP CCCCCC
SN-11	NO <sub>x</sub> , CO, HAPs	NSPS Subpart IIII NESHAP Subpart ZZZZ

10. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? No.

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.

1<sup>st</sup> 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 ( $\text{mg}/\text{m}^3$ ), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV ( $\text{mg}/\text{m}^3$ )	PAER (lb/hr) = $0.11 \times \text{TLV}$	Proposed lb/hr	Pass?
Acrolein	0.2	0.022	0.0097	Yes
PAH	0.2	0.022	0.0591	No

2<sup>nd</sup> 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 ( $\mu\text{g}/\text{m}^3$ ) = 1/100 of Threshold Limit Value	Modeled Concentration ( $\mu\text{g}/\text{m}^3$ )	Pass?
PAH	2.0	0.01362	Yes

c) H<sub>2</sub>S Modeling: N/A

13. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
04 and 05	TANKS 4.0.9d	727.46 lb VOC/yr 780.20 lb VOC/yr			
06	Manufacturer's data	Various			
07	Mass balance	0.45 lb/hr			PM <sub>10</sub> = Capacity * Total Dissolved Solids * Drift Loss * Density of Water
08	Manufacturer's data (PM/PM <sub>10</sub> , VOC, CO and NOx) and mass balance (SO <sub>2</sub> )	<u>g/kW-hr</u> PM/PM <sub>10</sub> : 0.055 VOC: 0.15 CO: 0.67 NOx: 5.43 <u>lb/hr</u> SO <sub>2</sub> : 0.0046 21.6 gal/hr 7.08 lb/gal 15 ppm			SO <sub>2</sub> = Fuel Oil (FO) flow * FO density * FO sulfur% * ( 2 lb SO <sub>2</sub> /1 lb S)
10	TANKS 4.0.9d	202.86 lb VOC/yr			
11	Manufacturer's data (PM/PM <sub>10</sub> , VOC, CO and NOx) and mass balance (SO <sub>2</sub> )	<u>g/hp-hr</u> PM/PM <sub>10</sub> : 0.12 VOC: 0.10 CO: 0.80 NOx: 2.75 <u>lb/hr</u> SO <sub>2</sub> : 0.002 9.3 gal/hr 7.08 lb/gal 15 ppm			SO <sub>2</sub> = Fuel Oil (FO) flow * FO density * FO sulfur% * ( 2 lb SO <sub>2</sub> /1 lb S)

14. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
06	NO <sub>x</sub>	Method 20	Initial	40 C.F.R. §60.46b(f)
	NO <sub>x</sub>	Method 20	Initial	40 C.F.R. §60.335 40 C.F.R. §60.8
	SO <sub>2</sub>	ASTM D 1072-80, D 3031-81, D 4084-82, or D 3246-81	180 days after start-up	40 C.F.R. §60.335 40 C.F.R. §60.8
			Every 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)
06	CO, NO <sub>x</sub> , SO <sub>2</sub>	CEM/fuel content	Continuous	Y
08	High Pressure Limit	Backpressure Monitor	Continuous	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)
04 & 05	Fuel oil	35.1 Million gal per year	Monthly	Y
06	fuel oil and natural gas burned	9.626 billion cubic feet of natural gas and 35.14 million gallons of fuel	Monthly	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
		oil per year		
06	duration and CO emissions for startup/shutdown events	Startup 4 hr; 6,000 lb CO Shutdown 1 hr; 305.8 lb CO	Monthly	Y
07	TDS	1,000 ppm	Monthly	Y
08	Hours of operation	2,500 hours/year	Monthly	Y
10	Gasoline Throughput	10,000 gal/month	Monthly	Y
11	Hours of operation	500 hours/year (emergency and non-emergency)	Monthly	Y

17. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
06	20% when burning fuel oil	Dept. Guidance	Daily Observation
08	20%	Reg.19.503 and 40 C.F.R. § 52 Subpart E	Annual
11	20%	Reg.19.503 and 40 C.F.R. § 52 Subpart E	Annual

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 <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	Single	Total	
Main Building Heater	A1	0.1393	0.0110	0.2016	1.5397	1.8330			
Shop	A1	0.0006	0.000	0.0008	0.0030	0.0071			

Source Name	Group A Category	Emissions (tpy)						
		PM/PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs	
							Single	Total
Heater								
Warehouse Heater #1	A1	0.0003	0.000	0.0004	0.0016	0.0038		
Warehouse Heater #2	A1	0.0003	0.000	0.0004	0.0015	0.0035		
Intake Heater	A1	0.0006	0.000	0.0008	0.0030	0.0071		
Firehouse Heater	A1	0.0003	0.000	0.0004	0.0016	0.0038		
Diesel fuel tank for EDG (250 gallon) – Back up tank	A3							
Diesel fuel tank for EFPE (300 gallon)	A3							
Diesel fuel tank for EDG (525 gallon)	A3							
Diesel fuel tank (2,000 gallon) – Back up tank	A3							

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 #
1165-AOP-R8



## APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

## Fee Calculation for Major Source

Revised 03-11-16

Arkansas Electric Cooperative Corporation - Thomas B.  
 Fitzhugh Generating Station  
 Permit Number: 1165-AOP-R9  
 AFIN: 24-00012

\$/ton factor	23.93	Annual Chargeable Emissions (tpy)	1411.2
Permit Type	Modification	Permit Fee \$	1000

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)	0
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 condensable 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		91.1	91.1	0		
PM <sub>10</sub>		91.1	91.1	0	0	91.1
PM <sub>2.5</sub>		0	0	0		
SO <sub>2</sub>		840	840	0	0	840
VOC		27.6	27.6	0	0	27.6
CO		500.4	500.4	0		
NO <sub>x</sub>		452.5	452.5	0	0	452.5
Formaldehyde	<input type="checkbox"/>	0	0	0		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Single HAP	<input type="checkbox"/>	3.43	3.43	0		
Total HAPs	<input type="checkbox"/>	5.79	5.79	0		