

STATEMENT OF BASIS

For the issuance of Air Permit # 0154-AOP-R6 AFIN: 74-00024

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Arkansas Electric Cooperative Corporation (Carl E. Bailey Generating Station)
535 Woodruff 816
Augusta, Arkansas 72006

3. PERMIT WRITER:

Amanda Leamons

4. NAICS DESCRIPTION AND CODE:

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

5. SUBMITTALS:

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
1/24/2018	Minor Mod	Installed new backup generator (SN-08)

6. REVIEWER'S NOTES:

Arkansas Electric Cooperative Corporation (AECC) operates the Carl E. Bailey Generating Station (AFIN: 74-00024), located in Augusta, Woodruff County, Arkansas. This permit revision includes a minor modification approved on February 5, 2018 to allow the installation of a new Stand-by Diesel Generator Engine (SN-08) to serve as back up in case of global loss of power. The engine is EPA certified and rated at 500kW at full load. Applicable requirements from 40 CFR Part 60, Subpart IIII have been added to this permit. (Note: These conditions have been revised since the minor modification approval letter. The permittee submitted updated/corrected engine displacement information after the minor modification letter was sent.) In addition a 1,000 gallon sub base fuel tank, storing diesel fuel for the new engine, has been added to the Insignificant

Activities List as a Group A-3 activity. Lastly, the general provisions have been updated. With this permit revision overall annual permitted emission limits increased 0.1 ton of PM/PM₁₀, 0.3 ton of SO₂, 0.3 ton of VOC, 1.0 ton of CO, 14.1 tons of NO_x, and 0.03 ton of total HAPs.

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 known current or pending enforcement or compliance issues.

8. PSD APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N

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

- Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list, or
- CO₂e potential to emit $\geq 100,000$ tpy and ≥ 100 tpy/ ≥ 250 tpy of combined GHGs?

If yes, explain why this permit modification is not PSD.

The addition of the backup generator does not meet or exceed any SERs for PSD.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
06	HAPS	NESHAP ZZZZ (RICE)
07	HAPS	NESHAP CCCCC
08	PM, CO, NO _x , HC	NSPS III
Facility	SO ₂ , NO _x , O ₂ , CO ₂	40 CFR Part 72 (Acid Rain) 40 CFR Part 75 (CEM) 40 CFR Part 97, Subpart BBBBB

10. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

11. NAAQS EVALUATIONS AND NON-CRITERIA POLLUTANTS:

a) Reserved.

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/m^3), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = $0.11 \times \text{TLV}$	Proposed lb/hr	Pass?
Acenaphthylene	0.02	0.0022	0.00003	Yes
Acenaphthene	0.02	0.0022	0.0002	Yes
Acrolein	0.23	0.0253	0.0005	Yes
Arsenic	0.01	0.0011	0.001	Yes
Anthracene	0.02	0.0022	0.0002	Yes
Benzo(a)anthracene	0.02	0.0022	0.00005	Yes
Benzo(b)fluoranthene	0.02	0.0022	0.000006	Yes
Benzo(k)fluoranthene	0.02	0.0022	0.000009	Yes
Benzo(a)pyrene	0.02	0.0022	0.000001	Yes
Benzo(g,h,l)perylene	0.02	0.0022	0.00003	Yes
Cadmium	0.01	0.0011	0.001	Yes
Chromium IV	0.05	0.0055	0.001	Yes
Chrysene	0.02	0.0022	0.00003	Yes
Dibenz(a,h)anthracene	0.02	0.0022	0.00002	Yes
Fluorene	0.02	0.0022	0.0002	Yes
Indeno(1,2,3-cd)pyrene	0.02	0.0022	0.00003	Yes
Lead	0.05	0.0055	0.003	Yes
Manganese	0.1	0.011	0.003	Yes
Mercury	0.01	0.0011	0.001	Yes
Phenanthrene	0.02	0.0022	0.0001	Yes
Pyrene	0.02	0.0022	0.00007	Yes
Selenium	0.2	0.022	0.007	Yes

12. CALCULATIONS:

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
01	AP-42, stack testing, CEMS	Fuel Oil Comb.: 9000gal/hr 361.1 lb _{SO2} /10 ³ gal 488 lb _{NOx} /hr 261 lb _{PM} /hr 5 lb _{CO} /10 ³ gal 1.04 lb _{VOC} /10 ³ gal Nat. Gas Comb.: 1.35 MMcf/hr 887 lb _{NOx} /hr (ST) 0.6 lb _{SO2} /MMcf 5.0 lb _{PM} /MMcf 40 lb _{CO} /MMcf 1.04 lb _{VOC} / MMcf	None	NA	Various Fuel Oils used and various factors for Criteria pollutants when burning Fuel Oil. See attached appendix.
03, 04, 05, 07	TANKS 4.0.9d	---	None	NA	
06	AP-42 Section 3.3	0.1 lb _{PM} /MMBtu 0.084 lb _{SOx} /MMBtu 2.1 lb _{VOC} /MMBtu 0.99 lb _{CO} /MMBtu 1.63 lb _{NOx} /MMBtu	None	N/A	Gasoline-fired 0.9 MMBtu/hr Emergency Engine
08	Manufacturer Specs.	2500 hr/yr 561 kWh 0.05 g _{PM} /kWh 0.146 g _{SOx} /kWh 0.15 g _{VOC} /kWh 0.6 g _{CO} /kWh 9.1 g _{NOx} /kWh			

13. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
None				

14. 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	SO ₂	CEM	Continuously	Yes
01	NO _x	CEM	Continuously	Yes
01	O ₂	CEM	Continuously	Yes
01	Opacity	CEM	Continuously	Yes

15. 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
01	Opacity	20% (Nat. Gas) 40% (Fuel Oil)	Continuously	No
01	SO ₂ Emissions	3,250.0 lb/hr 7,118.0 tpy	Continuously	No
01	NO _x Emissions	887.0 lb/hr 3,069.0 tpy	Continuously	No
01	Fuel Oil Sulfur Content	<2.3% by weight	Each Shipment	No
01	Heat Input	none	Every hour	No
01	Amount of oil or coal burned Annual average heat input	<10% of 3 year average annual heat input OR <15% 1 year average annual heat input	Monthly & Calendar Year	Yes

SN	Recorded Item	Permit Limit	Frequency	Report
03, 04, 05	Fuel Oil Throughput	82,612,100 Gallons per 12-month	Annually	Yes
06	Total (including emergency) Hours of Operation	500 hours per consecutive 12-months	Monthly	Yes
	Maintenance Hours of Operation	100 hours per consecutive 12-months	Monthly	No
07	Gasoline throughput	3,416 gallons per consecutive 12-months	Monthly	Yes

16. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01	20%	Natural Gas	CEM
01	40%	Fuel Oil	CEM
06	20%	§19.503	Annually
08	20%	§19.503	Annually

17. DELETED CONDITIONS:

Former SC	Justification for removal
	None Removed

18. GROUP A INSIGNIFICANT ACTIVITIES:

Source Name	Group A Category	Emissions (tpy)						HAPs	
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	Single	Total	
Shop Heater #1 (0.15MMBTU/hr, NG)	A-1	0.005	0.0004	0.0036	0.0263	0.0618		0.0001	
Shop Heater #2 (0.15MMBTU/hr, NG)	A-1	0.005	0.0004	0.0036	0.0263	0.0618		0.0001	
Fire Pump Room Heater	A-1	0.0025	0.0002	0.0018	0.0131	0.0309		0.0000	

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
(0.075MMBTU/hr, NG)								
Warehouse Heater #1 (0.055MMBTU/hr, NG)	A-1	0.0018	0.0001	0.0013	0.0096	0.0226		0.0000
Warehouse Heater #2 (0.055MMBTU/hr, NG)	A-1	0.0018	0.0001	0.0013	0.0096	0.0226		0.0000
Warehouse Heater #3 (0.055MMBTU/hr, NG)	A-1	0.0018	0.0001	0.0013	0.0096	0.0226		0.0000
Warehouse Heater #4 (0.055MMBTU/hr, NG)	A-1	0.0018	0.0001	0.0013	0.0096	0.0226		0.0000
NG Auxiliary Boiler (SN-02) (8.4 MMBTU/hr)	A-1	0.2796	0.0221	0.2024	1.4717	3.4584		0.0033
Total for A-1 activities	A-1	0.2993	0.0236	0.2167	1.5759	3.7034		0.0035
Diesel Tank (275 gal)	A-3			0.0000				0.0000
Sodium Hydroxide Tank (4,885 gal)	A-4							

19. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

List all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
0154-AOP-R5

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Facility Name: Arkansas Electric Cooperative
 Corporation (Carl E. Bailey Generating Station)
 Permit Number: 0154-AOP-R6
 AFIN: 74-00024

\$/ton factor	23.93	Annual Chargeable Emissions (tpy)	7699.6
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)	14.5
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		572.1	572.2	0.1		
PM ₁₀		572.1	572.2	0.1	0.1	572.2
PM _{2.5}		0	0	0		
SO ₂		7118.1	7118.4	0.3	0	4000
VOC		43.5	43.8	0.3	0.3	43.8
CO		197.3	198.3	1		
NO _x		3069.4	3083.5	14.1	14.1	3083.5
lead	<input checked="" type="checkbox"/>	0.1	0.1	0	0	0.1

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Total HAPs	<input type="checkbox"/>	5.9	5.93	0.03		