

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0154-AOP-R7 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. 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
1/14/2019	Renewal w/ Minor Mod	Removed gas-fired emergency fire pump engine and replaced it with an electric fire pump. Included the BART conditions into the permit.

6. REVIEWER'S NOTES:

With this renewal all remaining existing sources kept their emission methods and permit limits the same. One source was removed, SN-06, reducing permitted emissions slightly. There are no new emission sources. An administrative order outlined the BART requires for AECC and those requirements are no included in the permit under the specific conditions for SN-01.

7. COMPLIANCE STATUS:

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

Currently, there is an Administrative Order in effect that the Carl Bailey facility is subject to, it is AO LIS 18-071. The provisions of this order are included in the current permit.

There are no other compliance or enforcement activities or issues pending.

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/A

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*

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

*No modifications that trigger PSD.*

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
07	HAPS	NESHAP CCCCCC
08	PM, CO, NO <sub>x</sub> , HC	NSPS IIII
Facility	SO <sub>2</sub> , NO <sub>x</sub> , O <sub>2</sub> , CO <sub>2</sub>	40 CFR Part 72 (Acid Rain) 40 CFR Part 75 (CEM) 40 CFR Part 97, Subpart BBBBB

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/A

If not, explain why. 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.

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 (mg/m<sup>3</sup>), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m <sup>3</sup> )	PAER (lb/hr) = 0.11 × 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	0.01	No
Anthracene	0.02	0.0022	0.00002	Yes
Benzo(a)anthracene	0.02	0.0022	0.00005	Yes
Benzo(b,k)fluoranthene	0.02	0.0022	0.00001	Yes
Benzo(a)pyrene	0.02	0.0022	0.000003	Yes
Benzo(g,h,i)perylene	0.02	0.0022	0.00003	Yes
Cadmium	0.01	0.0011	0.004	Yes
Chromium VI	0.05	0.0055	0.002	Yes

Pollutant	TLV (mg/m <sup>3</sup> )	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Chrysene	0.02	0.0022	0.00002	Yes
Dibenz(a,h)anthracene	0.02	0.0022	0.00002	Yes
Fluorene	0.02	0.0022	0.00004	Yes
Indeno(1,2,3-cd)pyrene	0.02	0.0022	0.00002	Yes
Lead	0.05	0.0055	0.01	No
Manganese	0.1	0.011	0.03	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

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 (µg/m <sup>3</sup> ) = 1/100 of Threshold Limit Value	Modeled Concentration (µg/m <sup>3</sup> )	Pass?
Arsenic	0.1	0.0004	Y
Lead	0.5	0.0004	Y
Manganese	1.0	0.00119	Y

13. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01	AP-42, stack testing, CEMS	Fuel Oil Comb.: 9000gal/hr 361.1 lb <sub>SO2</sub> /10 <sup>3</sup> gal 488 lb <sub>NOx</sub> /hr	None	NA	Various Fuel Oils used and various factors for

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		261 lb <sub>PM</sub> /hr 5 lb <sub>CO</sub> /10 <sup>3</sup> gal 1.04 lb <sub>VOC</sub> /10 <sup>3</sup> gal  Nat. Gas Comb.: 1.35 MMcf/hr 887 lb <sub>NOx</sub> /hr (ST) 0.6 lb <sub>SO2</sub> /MMcf 5.0 lb <sub>PM</sub> /MMcf 40 lb <sub>CO</sub> /MMcf 1.04 lb <sub>VOC</sub> /MMcf			Criteria pollutants when burning Fuel Oil. See attached appendix.
03, 04, 05, 07	TANKS 4.0.9d	---	None	NA	
08	Manufacturer Specs.	2500 hr/yr 561 kWh 0.05 g <sub>PM</sub> /kWh 0.146 g <sub>SOx</sub> /kWh 0.15 g <sub>VOC</sub> /kWh 0.6 g <sub>CO</sub> /kWh 9.1 g <sub>NOx</sub> /kWh			

14. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
None				

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	SO <sub>2</sub>	CEM	Continuously	Yes
	NO <sub>x</sub>	CEM	Continuously	Yes

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
	O <sub>2</sub>	CEM	Continuously	Yes
	Opacity	CEM	Continuously	Yes

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	Opacity	20% (Nat. Gas) 40% (Fuel Oil)	Continuously	No
	SO <sub>2</sub> Emissions	3,250.0 lb/hr 7,118.0 tpy	Continuously	No
	NO <sub>x</sub> Emissions	887.0 lb/hr 3,069.0 tpy	Continuously	No
	Fuel Oil Sulfur Content	<2.3% by weight	Each Shipment	No
	Heat Input	none	Every hour	No
	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
03, 04, 05	Fuel Oil Throughput	82,612,100 Gallons per 12-months	Annually	Yes
07	Gasoline throughput	3,416 gallons per 12-months	Monthly	Yes
08	Hours of Operation	2,500 hrs per 12-months	Monthly	Yes

17. OPACITY:

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

18. DELETED CONDITIONS:

Former SC	Justification for removal
36-56	SN-06 was removed from service

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)						
		PM/PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs	
							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 (0.075MMBTU/hr, NG)	A-1	0.0025	0.0002	0.0018	0.0131	0.0309		0.0000
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 (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
Sub-base Fuel Tank (1,000 gal Diesel)	A-3			0.0004				
Sodium Hydroxide Tank (4,885 gal)	A-4							

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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 #
0154-AOP-R6



## 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-R7  
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\$/ton factor	23.93	Annual Chargeable Emissions (tpy)	7698.56
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)	-1.04
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		572.2	572.1	-0.1		
PM <sub>10</sub>		572.2	572.1	-0.1	-0.1	572.1
PM <sub>2.5</sub>		0	0	0		
SO <sub>2</sub>		7118.4	7118.2	-0.2	0	4000
VOC		43.8	43.3	-0.5	-0.5	43.3
CO		198.3	197.9	-0.4		
NO <sub>x</sub>		3083.5	3083.1	-0.4	-0.4	3083.1
lead	<input checked="" type="checkbox"/>	0.1	0.06	-0.04	-0.04	0.06

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"/>	5.93	5.67	-0.26		