

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1860-AOP-R6 AFIN: 29-00304

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Arkansas Electric Cooperative Corporation - Fulton CT1 Generating Station  
100 AECC Road  
Fulton, Arkansas 71838

3. PERMIT WRITER:

John Mazurkiewicz

4. NAICS DESCRIPTION AND CODE:

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

5. ALL 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
9/27/2017	Minor Mod	Install an exhaust oxidation catalyst system on the generator engine (SN-02). The catalyst will reduce CO emissions by a minimum of 75%

6. REVIEWER'S NOTES:

Arkansas Electric Cooperative Corporation (AECC) operates an electric power station in Hempstead County near Fulton, Arkansas. The facility has submitted an application for Minor Modification to allow the following changes:

- Change the source description for the Emergency Diesel Generator (SN-02) to Stand-By Diesel Generator, and reclassify the source as a non-emergency ZZZZ engine (the

facility has requested to continue to limit operation to 500 hours per rolling twelve month period), and

- Install an exhaust oxidation catalyst system on the generator engine (SN-02). The catalyst will reduce CO emissions by a minimum of 75%.

As a result of this modification, permitted emissions decrease by 0.5 tpy 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.

8. PSD APPLICABILITY:

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

No.

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

- *Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list*

No.

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

N/A

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
01	SO <sub>2</sub> NO <sub>x</sub>	40 CFR 60, Subpart GG – <i>Standards of Performance for Stationary Gas Turbines</i>
		40 CFR Part 75- <i>Acid Deposition Control</i>
02	HAPs	40 CFR 63, Subpart ZZZZ - <i>National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines</i>

10. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

## 11. AMBIENT AIR EVALUATIONS:

a) Reserved.

b) Non-Criteria Pollutants:

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*TLV	Proposed lb/hr	Pass?
Acenaphthene	0.20	0.02	3.80E-06	Yes
Acenaphthylene	0.20	0.02	1.35E-05	Yes
Acetaldehyde	45.04	4.95	2.05E-03	Yes
Acrolein	0.23*	0.025	0.0203	Yes
Anthracene	0.20	0.02	5.00E-06	Yes
Benzene	1.60	0.18	2.50E-03	Yes
Benzo(a)anthracene	0.20	0.02	4.49E-06	Yes
Benzo(a)pyrene	0.20	0.02	5.03E-07	Yes
Benzo(b)fluoranthene	0.20	0.02	2.65E-07	Yes
Benzo(g,h,l)perylene	0.20	0.02	1.31E-06	Yes
Benzo(k)fluoranthene	0.20	0.02	4.14E-07	Yes
1,3-Butadiene	4.42	0.49	1.05E-04	Yes
Chrysene	0.20	0.02	9.44E-07	Yes
Dibenz(a,h)anthracene	0.20	0.02	1.56E-06	Yes

Pollutant	TLV (mg/m <sup>3</sup> )	PAER (lb/hr) = 0.11*TLV	Proposed lb/hr	Pass?
Ethylbenzene	86.84	9.55	7.04E-07	Yes
Fluoranthene	0.20	0.02	2.04E-05	Yes
Fluorene	0.20	0.02	7.81E-05	Yes
Formaldehyde	1.5	0.165	1.2140	No
Indeno (1,2,3-cd) pyrene	0.20	0.02	1.00E-06	Yes
Naphthalene	52.40	5.76	2.42E-04	Yes
PAH	0.20	0.02	2.86E-08	Yes
Phenanthrene	0.20	0.02	7.86E-05	Yes
Propylene	860.53	94.66	6.90E-04	Yes
Propylene Oxide	48.00	5.28	4.84E-08	Yes
Pyrene	0.20	0.02	1.28E-05	Yes
Toluene	75.40	8.29	1.10E-03	Yes
Xylenes	434.19	47.76	7.74E-04	Yes

\* STEL ceiling Value

## 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?
Formaldehyde	15	0.0498	Yes

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

12. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01	NO <sub>x</sub> and CO: Manufacturer Guarantee	172 lb NO <sub>x</sub> /hr 42 lb CO/hr	DLN - Dry Low NO <sub>x</sub> Burners	N/A	
	Particulates, SO <sub>2</sub> , VOC, and HAPs: AP-42 Section 3.1	6.6E-03 lb PM/MMBtu 6.6E-03 lb PM <sub>10</sub> /MMBtu 6E-04 lb SO <sub>2</sub> /MMBtu 2.1E-03 lb VOC/MMBtu 6.4E-06 lb acrolein/MMBtu 7.1E-04 lb formaldehyde/MMBtu			
02	AP-42 Section 3.3	0.31 lb PM/MMBtu 0.31 lb PM <sub>10</sub> /MMBtu 0.29 lb SO <sub>2</sub> /MMBtu 0.35 lb VOC/MMBtu 0.95 lb CO/MMBtu 4.41 lb NO <sub>x</sub> /MMBtu 9.25E-05 lb acrolein/MMBtu 1.18E-03 lb formaldehyde/MMBtu	oxidation catalyst	0.75	

13. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
01	NO <sub>x</sub>	20	initial	40 CFR 60, GG
01	HAPs	18	one time	18.1004
02	O <sub>2</sub> CO	3 or 3A or 3B 10	one time	40 CFR 63, ZZZZ

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	NOx, corrected to 15% O <sub>2</sub>	CEM	continuous	Y

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 (Y/N)
01	fuel usage	5,832 MMSCF	monthly	Y
02	opacity	20%	annual	N
02	usage	500 hr/yr	monthly	Y

16. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01	5%	Department Standard	pipeline quality natural gas only
02	20%	Department Standard	annual observation

17. DELETED CONDITIONS:

Former SC	Justification for removal
	None.

18. GROUP A INSIGNIFICANT ACTIVITIES:

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	
500 Gallon Diesel Storage Tank	A-3			0.1				0.01	0.01

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3.75 MMBtu/hr Natural Gas Fired Fuel Heater	A-1	0.2	0.1	0.1	1.5	1.8	0.01	0.01
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19. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

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

Permit #
1860-AOP-R5





## APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

## Fee Calculation for Major Source

Revised 03-11-16

Facility Name: Arkansas Electrip Cooperative  
 Corporation - Fulton CT1 Generating Station  
 Permit Number: 1860-AOP-R6  
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\$/ton factor	23.93	Annual Chargeable Emissions (tpy)	271.6
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)	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		16.3	16.3	0		
PM <sub>10</sub>		16.3	16.3	0	0	16.3
PM <sub>2.5</sub>		0	0	0		
SO <sub>2</sub>		1.8	1.8	0	0	1.8
VOC		5.5	5.5	0	0	5.5
CO		60.6	60.1	-0.5		
NO <sub>x</sub>		248	248	0	0	248
Total HAPs	<input type="checkbox"/>	1.78	1.78	0		