

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1903-AOP-R9 AFIN: 47-00448

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Associated Electric Cooperative, Inc. - Dell Power Plant
301 E. Hwy 18
Dell, Arkansas 72426

3. PERMIT WRITER:

Charles Hurt, P.E.

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Electric Bulk Power Transmission and Control
NAICS Code: 221121

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
9/29/2014	Renewal	None. Corrected some typographical errors carried over from previous review

6. REVIEWER'S NOTES:

Associated Electric Cooperative, Inc. – Dell Power Plant (AFIN: 47-00448) owns and operates a power plant located at 301 Highway 18 East in Dell, Arkansas 72426. AECEI submitted an application to renew the Title V permit with modifications. The modifications did not involve physical changes or changes in method of operation. No new equipment was proposed with the application.

The modifications included incorporating the applicable requirements of the Boiler MACT for the auxiliary boiler (SN-03) and the two fuel gas heaters (SN-32 and SN-33), correction of technical errors discovered during the review, and some administrative

changes to the permit. The previous permit listed incorrect emission limits (ammonia) for SN-01 and SN-02 during No. 2 fuel oil combustion and incorrect emission limits (VOC) for SN-35 and SN-36. Those limits were corrected consistent with previous calculations and the current renewal application.

7. COMPLIANCE STATUS:

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

The facility was last inspected on January 17, 2014. The inspection revealed on violations.

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*

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

No physical change or change in method of operation.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
03, 32, 33	-	NSPS Dc
01 and 02 including duct burners	SO ₂ NO _x	NSPS KKKK
01 and 02	HAPS	NESHAP YYYY
All Sources except SN-35 and SN-36	PM/PM ₁₀ VOC CO NO _x	PSD
34 and 37	HAPS	NESHAP ZZZZ
03, 32, 33	HAPS	NESHAP DDDDD

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:

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.

This modification did not involve changes that warrant review of previous non-criteria modeling results.

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?
Acrolein	0.23	0.025	0.0247	Yes
Ammonia	17.4	1.92	51.5	No
Arsenic	0.01	0.001	0.047	No
Beryllium	0.00005	5.50E-06	0.0013	No
Cadmium	0.002	0.0002	0.021	No
Chromium	0.5	0.055	0.047	Yes
Cobalt	0.02	0.002	0.00006	Yes
Formaldehyde	0.37	0.041	2.754	No
Manganese	0.2	0.022	3.337	No
Mercury	0.01	0.001	0.0053	No
Nickel	0.1	0.011	0.021	No
POM	0.2	0.022	0.17	No
Selenium	0.2	0.022	0.106	No

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 ($\mu\text{g}/\text{m}^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Pass?
Ammonia	174	5.72	Yes
Arsenic	0.1	0.005	Yes
Beryllium	0.0005	0.0002	Yes
Cadmium	0.02	0.002	Yes
Formaldehyde	15	0.311	Yes
Manganese	2.0	0.368	Yes
Mercury	0.1	0.001	Yes
Nickel	1.0	0.002	Yes
POM	2.0	0.019	Yes
Selenium	2.0	0.012	Yes

Other Modeling:

Odor:

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time for hydrogen sulfide or styrene.

12. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01 and 02	AP-42 and General Electric Equipment Specs	For HAPs: AP-42 Tables 3.1-2a and 3.1-3	Dry Low NO_x , Water Injection, and Selective Catalytic Reduction	Approx 85%	Controlled emission factors provided for the GE Turbines. Factors assume that SCR is included.
03	AP-42	Table 1.4-1, 1.4-2, 1.4-3, and 1.4-4	Low NO_x Burner	N/A	Uncontrolled emission factors
04-15	AP-42 and AWMA Abstract No. 216, Session No. AM-1b, Orlando, 2001	0.0005% Drift Rate and 8000ppm Total Dissolved Solids	N/A	N/A	Uncontrolled emission factors

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
16-22 and 24-27	AP-42 and AWMA Abstract No. 216, Session No. AM-1b, Orlando, 2001	0.0005% Drift Rate and 1500ppm Total Dissolved Solids	N/A	N/A	Uncontrolled emission factors
34	AP-42	Table 3.3-1 and 3.3-2	N/A	N/A	Uncontrolled emission factors
32-33	Manufacturer's Specs for CO, NO _x AP-42 all others	1.35 lb NO _x /hr 0.46 lb CO/hr AP-42 1.4	N/A	N/A	Uncontrolled emission factors
35, 36	AP-42 Section 7.1.3.1	40.9 lb VOC/hr	N/A	N/A	Uncontrolled emission factors
37	AP-42	Table 3.3-1 and 3.3-2	N/A	N/A	Uncontrolled emission factors

13. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
01 and 02	PM	5 and 202	Initial and then every 5 years for each fuel type	In order to confirm BACT and lb/MMBtu limits
	PM ₁₀	201A and 202 or 5 and 202		
	VOC	25A		
	CO	10		
	NO _x	7E		
	Lead	12		To confirm lb/hr and tpy limits
	HAPs and Ammonia	18	To confirm lb/hr and tpy limits for HAPs and ammonia and to verify that no additional HAPs will be emitted	
03	NO _x	7E	Initial	In order to confirm BACT and lb/MMBtu

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 and 02	Fuel Sulfur Content	ASTM D1072-80, D3031-81, or D3246-81	Daily	If exceeded
	Fuel Nitrogen Content	Fuel Monitoring Protocol for Stationary Gas Turbines subject to 40 CFR 60, Subpart KKKK	Daily	
	Fuel Flow Rate	In-line Fuel Flow Meter (CEM)	Continuous	
	CO	CEM	Continuous	
	NO _x	CEM	Continuous	
	SO ₂	CEM	Continuous	
04-15	TDS	Not to exceed 8,000 ppm	Monthly	Y
16-22 and 24-27	TDS	Not to exceed 1,500 ppm	Weekly	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 and 02	Fuel Fired	Natural Gas	N/A	Y
	Natural Gas Usage	39,500 million SCF	Annual	Y
	Fuel Nitrogen and Sulfur Contents	N/A	Daily	Y
	No 2. Fuel Oil Usage	1,850 hours per year	Daily	Y
03	Fuel Fired	Natural Gas	N/A	Y
04-15	Total Dissolved Solids	8,000 ppm	Monthly	Y
16-22 and 24-27	Total Dissolved Solids	1,500 ppm	Weekly	Y
34	Fuel Sulfur Content	0.5%	Monthly	Y
	Hours per year of operation	250 hours/yr	Monthly	Y
28-31	Total Suspended Particulate	75,000 ppm	Weekly	Y
32 and 33	Fuel burned	N/A	Monthly	Y
35 and 36	No. 2 Fuel Oil Throughput	257,380,000 gal/yr	Monthly	Y
37	Hours per year of operation	100 hours/yr	Monthly	Y

16. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01 and 02 (natural gas)	5%	Dept. Limit	Initial reading, then natural gas usage only
01 and 02 (fuel oil)	10%	BACT Limit	Daily Method 9 Observations during fuel oil combustion
03	5%	Dept. Limit	Natural gas usage only
04-22 and 24-27	20%	Dept. Limit	Total Dissolved Solids Limit (SC#42 and 43)
23	20%	Dept. Limit	Readings taken if operated more than 3 consecutive hours
28-31	20%	Dept. Limit	TSP Limit (SC#55)
32 and 33	5%	Dept. Limit	Natural gas as fuel
34 and 37	20%	Dept. Limit	Daily Method 9 Observations when operating more than 3 consecutive hours

17. DELETED CONDITIONS:

No condition was deleted with this permit revision.

18. GROUP A INSIGNIFICANT ACTIVITIES:

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
Diesel Tank 500 gal	A-3			0.0001				
Diesel Tank 400 gal	A-3			0.0001				

19. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

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

Permit #
1903-AOP-R8

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 08-25-14

Facility Name: Associated Electric Cooperative, Inc. -
 Dell Power Plant
 Permit Number: 1903-AOP-R9
 AFIN: 47-00448

\$/ton factor	23.89	Annual Chargeable Emissions (tpy)	993.2
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)	-130.4
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		392.5	333.2	-59.3	-59.3	333.2
PM ₁₀		298.5	256.1	-42.4		
SO ₂		42.1	35.7	-6.4	-6.4	35.7
VOC		82.2	70.7	-11.5	-11.5	70.7
CO		623.5	525.3	-98.2		
NO _x		391.4	335.9	-55.5	-55.5	335.9
Lead	<input type="checkbox"/>	0.51	0.51	0		
Acrolein	<input type="checkbox"/>	0.12003	0.12011	8E-05		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Arsenic	<input type="checkbox"/>	0.09	0.090018894	1.88941E-05		
Beryllium	<input type="checkbox"/>	0.05	0.050001134	1.13365E-06		
Cadmium	<input type="checkbox"/>	0.05	0.050103918	0.000103918		
Chromium	<input type="checkbox"/>	0.09	0.090132259	0.000132259		
Cobalt	<input type="checkbox"/>	0.05	0.050007936	7.93553E-06		
Formaldehyde	<input type="checkbox"/>	13.37049	13.37756529	0.007075294		
Manganese	<input type="checkbox"/>	3.11	3.110035899	3.58988E-05		
Mercury	<input type="checkbox"/>	0.05	0.040245624	-0.009754376		
Nickel	<input type="checkbox"/>	0.05	0.040198388	-0.009801612		
POM	<input type="checkbox"/>	0.01	0.210138332	0.200138332		
Selenium	<input type="checkbox"/>	0.13	0.130002267	2.26729E-06		
Ammonia	<input checked="" type="checkbox"/>	215.4	217.7	2.3	2.3	217.7