STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1903-AOP-R10 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:

Elliott Marshall

4. NAICS DESCRIPTION AND CODE:

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

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
11/6/2017	Modification	None. Modifying Specific Condition #10 language

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. AECI submitted an application to remove the permit language associated with source numbers 1 and 2 regarding PM compliance testing as detailed in Specific Condition #10. Specific Condition #10 has been revised to exclude PM and PM10 testing on Natural Gas combustion every 5 years after the initial compliance testing. Plantwide conditions and

general conditions have been updated to the current language used by the department. There are no emission changes associated with this revision.

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 April 6, 2017. The inspection revealed no violations.

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

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 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. 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
If not, explain why.

For any requested inapplicable regulation in the permit shield, explain the reason why it is not applicable in the table below.

Source	Inapplicable Regulation	Reason
N/A		

11. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

12. AMBIENT AIR EVALUATIONS:

Include the results for any ambient air evaluations or modeling. Include NSR/PSD permits and permits that require an evaluation in accordance with revisions to 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.

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).

No modeling was performed for this permit revision.

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = 0.11 × 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

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
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 ($\mu g/m^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu g/m^3$)	Pass?
Ammonia	174	5.72	Yes
Arsenic	0.1	0.005	Yes
Beryllium	0.005	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

c) H_2S Modeling:

A.C.A. §8-3-103 requires hydrogen sulfide emissions to meet specific ambient standards. Many sources are exempt from this regulation, refer to the Arkansas Code for details.

Is the facility exempt from the H_2S Standards
If exempt, explain: No H2S emissions

Pollutant	Threshold value	Modeled Concentration (ppb)	Pass?
H_2S	20 parts per million (5-minute average*)		
	80 parts per billion (8-hour average) residential area		
	100 parts per billion (8-hour average) nonresidential area		

*To determine the 5-minute average use the following equation

$Cp = Cm\ (t_m/t_p)^{0.2}$ where

Cp = 5-minute average concentration
Cm = 1-hour average concentration
t_m = 60 minutes
t_p = 5 minutes

13. 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

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
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
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

14. 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 fuel oil combustion only	In order to confirm BACT and lb/MMBtu limits
	PM_{10}	201A and 202 or 5 and 202		
	VOC	25A	Initial and then every 5 years for each fuel type	
	CO	10		
	NO_X	7E		
	Lead	12		To confirm lb/hr and tpy limits

SN	Pollutants	Test Method	Test Interval	Justification
	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

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 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

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 and 02	Fuel Fired	Natural Gas	N/A	Y
	Natural Gas Usage	39,500 million SCF	Annual	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
	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

17. 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

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)						
		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				

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 #
1903-AOP-R9

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Facility Name: Associated Electric Cooperative, Inc. - Dell Power Plant
Permit Number: 1903-AOP-R10
AFIN: 47-00448

$/ton factor	23.93	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	☐
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 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		333.2	333.2	0	0	333.2
PM_{10}		256.1	256.1	0		
$PM_{2.5}$		0	0	0		
SO_2		35.7	35.7	0	0	35.7
VOC		70.7	70.7	0	0	70.7
CO		525.3	525.3	0		
NO_X		335.9	335.9	0	0	335.9
Lead	☐	0.51	0.51	0		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Acrolein	☐	0.12011	0.12011	0		
Arsenic	☐	0.090018894	0.090018894	0		
Beryllium	☐	0.050001134	0.050001134	0		
Cadmium	☐	0.050103918	0.050103918	0		
Chromium	☐	0.090132259	0.090132259	0		
Cobalt	☐	0.050007936	0.050007936	0		
Formaldehyde	☐	13.37756529	13.37756529	0		
Manganese	☐	3.110035899	3.110035899	0		
Mercury	☐	0.040245624	0.040245624	0		
Nickel	☐	0.040198388	0.040198388	0		
POM	☐	0.210138332	0.210138332	0		
Selenium	☐	0.130002267	0.130002267	0		
Ammonia	☑	217.7	217.7	0	0	217.7