STATEMENT OF BASIS

for the issuance of Draft Air Permit # : 1903-AOP-R6

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

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

3. PERMIT WRITER: Charles Hurt

4. PROCESS DESCRIPTION AND NAICS CODE:

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

5. SUBMITTALS: 1/28/2008

6. REVIEWER'S NOTES:

Associated Electric Cooperative, Inc. – Dell Power Plant (AFIN: 47-00448) owns and operates a natural gas fired power plant located at 301 Highway 18 East in Dell, Arkansas 72426. This modification incorporates the applicable requirements of 40 CFR Part 96 Subparts AAAA-HHHH of the Clean Air Interstate Rule (CAIR) NO_X Ozone Season Trading Program. No new equipment or changes in method of operation were proposed. Therefore, permitted emissions did not change.

7. COMPLIANCE STATUS:

The facility was last inspected on December 5, 2007, and the facility was determined to be in compliance with the permit issued to it.

8. APPLICABLE REGULATIONS:

PSD Applicability

Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, et cetera?	N		
Has this facility undergone PSD review in the past?	Y	Permit#	1903-AOP-R0
Is this facility categorized as a major source for PSD?	Y		
≥100 tpy and on the list of 28 (100 tpy)?	Y		
≥250 tpy all other	N/A		

PSD Netting

Was netting performed to avoid PSD review in this permit? N

Source and Pollutant Specific Regulatory Applicability

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
01 and 02	NO_X SO_2	NSPS Subpart GG
01 and 02	PM/PM_{10} NO_X SO_2	NSPS Subpart Da
03, 32, 33	-	NSPS Subpart Dc
All Sources	PM/PM_{10} NO_X VOC CO	PSD
01 and 02	-	NESHAP Subpart YYYY

9. EMISSION CHANGES:

The following table summarizes plant wide emission changes associated with this permitting action.

Plantwide Permitted Emissions (tpy)			
Pollutant	**Permit # 1903-AOP-R5**	**Permit # 1903-AOP-R6**	**Change**
PM	307.92	307.92	0
PM_{10}	207.82	207.82	0
SO_2	35.46	35.46	0
VOC	106.12	106.12	0
CO	555.12	555.12	0
NO_x	293.82	293.82	0
Lead	0.3	0.3	0
1,3-Butadiene	0.04	0.04	0
Acetaldehyde	0.75	0.75	0
Acrolein	0.14	0.14	0
Benzene	0.25	0.25	0
Ethylbenzene	0.6	0.6	0
Formaldehyde	12.59	12.59	0
Hexane	0.7	0.7	0
Naphthalene	0.07	0.07	0
PAH	0.06	0.06	0

Plantwide Permitted Emissions (tpy)			
Pollutant	**Permit # 1903-AOP-R5**	**Permit # 1903-AOP-R6**	**Change**
Propylene Oxide	0.54	0.54	0
Toluene	2.33	2.33	0
Xylene	1.18	1.18	0
Arsenic	0.01	0.01	0
Beryllium	0.01	0.01	0
Cadmium	0.01	0.01	0
Chromium	0.01	0.01	0
Cobalt	0.01	0.01	0
Dichlorobenzene	0.01	0.01	0
Hexane	0.01	0.01	0
Manganese	0.01	0.01	0
Mercury	0.01	0.01	0
Nickel	0.01	0.01	0
Phenantharene	0.01	0.01	0
Pyrene	0.01	0.01	0
Selenium	0.01	0.01	0
Ammonia	215.4	215.4	0

10. MODELING:

Criteria Pollutants

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. The results from the previous permitting action associated with the issuance for 1903-AOP-R5 are listed below.

Pollutant	**Emission Rate (lb/hr)**	**NAAQS Standard ($\mu g/m^3$)**	**Averaging Time**	**Highest Concentration ($\mu g/m^3$)**	**% of NAAQS**
PM_{10}	48.6	50	Annual	4.49	9%
		150	24-Hour	22.47	15%
SO_2	8.72	80	Annual	0.50	1%
		1300	3-Hour	5.73	0%
		365	24-Hour	2.54	1%
VOC	24.91	0.12	1-Hour (ppm)	-	0%
CO	128.42	10,000	8-Hour	128.46	1%
		40,000	1-Hour	183.52	0%

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ($\mu g/m^3$)	Averaging Time	Highest Concentration ($\mu g/m^3$)	% of NAAQS
NO_x	74.5	100	Annual	11.66	12%

Other Modeling

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.

Non-Criteria Pollutants

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 deemed 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 × TLV	Proposed lb/hr	Pass?
Lead	0.05	0.005	0.4	N
1,3-Butadiene	4.4245	0.486	0.04	Y
Acetaldehyde	45.0408	4.954	0.20	Y
Acrolein	0.2292	0.025	0.06	N
Benzene	1.597	0.175	0.08	Y
Ethylbenzene	434.1922	47.761	0.16	Y
Formaldehyde	0.368	0.040	2.88	N
Naphthalene	52.429	5.767	0.04	Y
PAH	0.2	0.022	0.04	N
Propylene Oxide	4.6699	0.513	0.13	Y
Toluene	188.40	20.724	0.56	Y
Xylene	434.1922	47.761	0.28	Y
Ammonia	17.413	1.915	49.20	N
Arsenic	0.01	0.0011	0.01	N
Beryllium	0.002	0.00022	0.01	N
Cadmium	0.01	0.0011	0.01	N
Chromium	0.5	0.055	0.01	Y
Cobalt	0.2	0.022	0.01	Y
Dichlorobenzene	10	1.1	0.01	Y

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Hexane	50	5.5	0.01	Y
Manganese	0.2	0.022	0.01	Y
Mercury	0.025	0.00275	0.01	N
Nickel	1.5	0.165	0.01	Y
Pyrene	5	.55	0.01	Y
Selenium	0.2	0.022	0.01	Y

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 was 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?
Lead	0.5	0.23634	Y
Acrolein	2.292	0.02363	Y
Formaldehyde	3.68	0.043441	Y
PAH	2.0	0.02363	Y
Arsenic	0.1	0.0059	Y
Cadmium	0.1	0.0059	Y
Beryllium	0.02	0.0059	Y
Mercury	0.25	0.0059	Y
Ammonia	174.13	0.7153	Y

11. 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 with Selective Catalytic Reduction	Approx. 85%	Controlled emission factors provided for the GE Turbines. Factors assume that SCR is included.

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
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
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
23	AP-42	Table 3.3-1 and 3.3-2	N/A	N/A	Uncontrolled emission factors
28-31	AP-42 and AWMA Abstract No. 216, Session No. AM-1b, Orlando, 2001	0.0005% Drift Rate and 75,000 ppm Total Dissolved Solids	N/A	N/A	Uncontrolled emission factors
32 33	AP-42	various			

12. TESTING REQUIREMENTS:

This permit requires stack 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	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

13. MONITORING OR CEMS

The permittee must monitor the following parameters with CEMs or other monitoring equipment (temperature, pressure differential, etc), frequency of recording and the need for records included in any annual, semiannual or other reports.

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
01 and 02	Natural Gas Fuel Sulfur Content	ASTM D1072-80, D3031-81, or D3246-81	Daily	If exceeded
	Natural Gas Fuel Nitrogen Content	Fuel Monitoring Protocol for Stationary Gas Turbines subject to 40 CFR 60, Subpart GG	Daily	
	Fuel Flow Rate	In-line Fuel Flow Meter (CEM)	Continuous	
	CO	CEM	Continuous	
	NO_X	CEM	Continuous	
	SO_2	CEM	Continuous	

14. RECORD KEEPING REQUIREMENTS

The following are items (such as throughput, fuel usage, VOC content of coating, etc) that must be tracked and recorded, frequency of recording and whether records are needed to be included in any annual, semiannual or other reports.

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
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
23	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

15. OPACITY

SN	Opacity	Justification for limit	Compliance Mechanism
01 and 02	5%	Dept. Limit	Initial reading, then natural gas usage only
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

16. DELETED CONDITIONS:

No conditions deleted.

17. VOIDED, SUPERSEDED OR SUBSUMED PERMITS

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

Permit #
1903-AOP-5

18. CONCURRENCE BY:

The following supervisor concurs with the permitting decision:

Phillip Murphy, P.E.
Engineering Supervisor, Air Division