STATEMENT OF BASIS

for the issuance of Draft Air Permit # 2129-A

1. PERMITTING AUTHORITY:

Arkansas Department of Environmental Quality
8001 National Drive
Post Office Box 8913
Little Rock, Arkansas 72219-8913

2 APPLICANT

Arkansas Electric COOP
PO Box 194208
Little Rock AR, 72219
Elkins Generating Station (CT Plant)
AR Highway 16, & Washington County Road 49
Washington County
Elkins AR 72727

3 PERMIT WRITER: Jim Siganos, P.E.

4 PROCESS DESCRIPTION AND NAICS CODE:

NAICS Description:	Fossil Fuel Electric Power Generation - pipeline natural gas-fired Combustion Turbine (CT)
NAICS Code:	221112

5 SUBMITTALS: December 6, 2006 , February 6, 2007 (version 2, rev 3), April 13, 2007 (Rev 4)

6 REVIEWERS NOTES:

Arkansas Electric Cooperative Corporation (AECC) applied for a minor source air permit to construct and operate a combustion turbine (CT), natural gas-fired, plant near Elkins, Arkansas. The facility will have the capability to generate approximately 120 MW of electricity, thus supporting the transmission system in Northwest Arkansas. Six (6) CTs, designated as SN-01 through SN-06, will be permitted but AECC plans to only install three units at first, each rated at approximately 20 megawatts (MW) during summer conditions (98 °F). AECC also proposes to limit the plant's potential capacity in order to keep annual NOx emissions below the 100 ton per year Title V permit threshold.

The location proposed, approximately eight miles southeast of Fayetteville, was selected because it could provide immediate support to the 69 kV transmission network serving cooperative loads in Washington and Benton Counties in northwestern Arkansas.

The CTs will burn a lean mixture of natural gas and compressed air. The hot, pressurized combustion gases expand through a series of rotating turbine wheel and blade assemblies that spin a shaft, resulting in shaft power. The shaft is connected to a generator which generates electricity. The configuration is known as "simple-cycle" since there is no heat recovery on the exhaust. These particular units are trailer mounted which are suitable for temporary installations. AECC has stated in their application that "These units are not new and have operated elsewhere prior to factory servicing for reuse."

A natural gas meter and a water meter will be installed for each CT, and AECC will comply with all maintenance activities required by NSPS Subpart KKKK as practiced at other AECC CT facilities with NSPS Subpart GG and the Acid Rain provisions. Information from the meters will be fed back to a data acquisition system on a computer located at the site. The computer will record the data, make the water injection to fuel input ratio calculation, and store the information for inspection, reports, etc.

Each water meter will be used to measure the water flow to each CT. The water will be injected to control nitrogen oxides (NOx) emissions. All six units are refurbished simple-cycle General Electric LM2500 combustion turbines. Because the capacity of each CT is less than 25 MW, they are not subject to EPA's Acid Rain regulations 40 CFR 72.7 (a) (1). The hot exhaust gases will be discharged from each power turbine through separate stacks.

The facility will have three (3) natural gas compressors on site with 370 hp natural-gas fired engines designated as SN-08, SN-09 & SN-10 to compress the natural gas for the combustion turbines. Only two compressors will operate during plant operation. The third unit will be idle and used as a back-up. Operation of the three compressors will be cycled in order to keep the operating hours on each compressor nearly equal. Potential emissions from these engines have been quantified.

These units will be permitted to only combust **natural gas** as defined below:

Natural gas means a naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions. Natural gas contains 20 grains or less of total sulfur per 100 standard cubic feet. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1100 Btu per standard cubic foot. [*40 CFR 72.2*]

7 COMPLIANCE STATUS: N/A

8 APPLICABLE REGULATIONS: N/A

PSD Applicability: N/A

PSD Netting N/A

Source and Pollutant Specific Regulatory Applicability

Source	Pollutant	Regulation [NSPS, NESHAP (Part 61 & Part 63), or PSD only]
CT's: SN-01 to SN-06	NOx & SO2	NSPS Subpart KKKK

Because the facility is subject to 40 CFR Part 60, Subpart KKKK , the facility is not subject to 40 CFR Part 60, Subpart GG.

The facility is not major source of HAPS therefore it is not subject to §**63.6085 of** 40 CFR 63 Subpart YYYY, *National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines* (CT)

9 EMISSION CHANGES:

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

Plant Wide Permitted Emissions (ton/yr)			
Pollutant	Previous Air Permit **N/A**	Air Permit#: 2129-A	Change
PM/PM_{10}	---	4.3	+4.3
SO_2	---	36.5	+36.5
VOC	---	9.1	+9.1
CO	---	71.6	+71.6
NO_X	---	94.4	+94.4
Acrolein	---	<0.01	<0.01
Formaldehyde	---	0.9	+0.9

10 MODELING:

Criteria Pollutants

Modeled NOx in order to have data for possibility of complaint.

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ($\mu g/m^3$)	Averaging Time	Highest Concentration ($\mu g/m^3$)	% of NAAQS
NO_X	203.6	100	24/Annual	34.3/1.72	1.72%

Other Modeling N/A

Odor; N/A

H_2S Modeling: N/A

Non-Criteria Pollutants N/A

11 CALCULATIONS:

SN	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lbs/ton, lbs/hr, etc)	Control Equipment Type and Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
01 to 06	PM/PM10: AP-42	0.066 lb/MMBtu	None	
	SO2: §63.4365	*0.06 lb/MMBtu	None	Burn natural gas only
	VOC: AP-42	0.021 lb/MMBtu	None	Uncontrolled
	CO: Mfgr.	25 lb/hr	None	
	NOx: Mfgr & Testing	32.2 lb/hr (Limit: 42 ppm @15 % O_2 or 2.0 lb/MWhr)	None	Controlled: Using water injection to limit NOx emissions. Modified or reconstructed turbine firing natural gas
07	PM/PM10: AP-42, 3.2	0.035g/hp-hr	None	
	SO2: AP-42	0.5% by weight	None	
	VOC: Manufacturer	0.01g/hp-hr	None	
	CO: Manufacturer	0.48g/hp-hr	None	
	NOx: Manufacturer	5.48g/hp-hr	None	

08, 09 & 10	PM/PM10: AP-42	0.00991 MMBtu/hp-hr	None	Uncontrolled
	SO2: AP-42	0.06lb/MMbtu	None	
	VOC: Manufacturer	0.8 g/hp-hr	None	
	CO: Manufacturer	1.7 g/hp-hr	None	
	NOx: Manufacturer	2.6 g/hp-hr	None	

12 TESTING REQUIREMENTS:

This permit requires stack testing of the following sources.

SN(s)	Pollutant	Test Method	Test Interval	Justification For Test Requirement
01 through 06	NOx	20	12 months not to exceed 14 months	Conform to Subpart KKKK.
	CO	10	5 years	Department Guidance

13 MONITORING or CEMS: Continuous Monitoring System (CMS)

The permittee must monitor the following parameters with CEMs or other monitoring equipment (water to fuel ratio - CMS), frequency of recording and the need for records included in any annual, semiannual or other reports.

SN	Parameter or Pollutant to be Monitored	Method of Monitoring (CEM, Pressure Gauge, etc)	Frequency*	Report (Y/N)**
01 through 06	NOx	Water meter and pipeline natural gas flowmeter. Control NOx emissions: Install, calibrate, maintain and operate a continuous monitoring system recording fuel consumption and water to fuel ratio resulting from performance test.	Continuous	N
01 through 06	SO_2	Pipeline natural gas fuel only. Maintaining on site a current, valid purchase contract, tariff sheet or transportation contract for the pipeline natural gas	Yearly	N

* Indicate frequency of recording required for the parameter (Continuously, hourly, daily, etc.)

** Indicates whether the parameter needs to be included in reports.

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	Limit (as established in permit)	Frequency*	Report (Y/N)**
Facility (01 through 06, and SN-08, SN-09 & SN-10)	Natural gas usage – facility. See SC # 6	1,104 MM scf per 12 months period.	Monthly - maintain 12 month rolling total	N
07	Hours of operation using diesel fuel.	500 hrs per 12 months	Monthly - maintain 12 month rolling total	N

* Indicate frequency of recording required for the item (Continuously, hourly, daily, etc.)

** Indicates whether the item needs to be included in reports

15 OPACITY

SN	Opacity %	Justification (NSPS limit, Dept. Guidance, etc)	Compliance Mechanism (daily observation, weekly, control equipment operation, etc)
01 through 06, and, 08, 09, and 10	5	Natural gas use only	Natural gas only
07	20	Department Guidance	Method 9 reading. Burning Diesel fuel only

16 DELETED CONDITIONS: N/A

17 VOIDED, SUPERSEDED OR SUBSUMED PERMIT: N/A- Initial Permit

18 CONCURRENCE BY:

The following supervisor concurs with the permitting decision:

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Thomas Rheaume, P.E.