

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0090-AR-7 AFIN: 58-00002

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Entergy Arkansas, LLC (Entergy-Arkansas Nuclear One)
1448 SR 333
Russellville, Arkansas 72802

3. PERMIT WRITER:

Bart Patton

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Nuclear Electric Power Generation
NAICS Code: 221113

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
1/5/2023	Modification	Add existing SN-27 to permit (inadvertently deleted from I.A. List at 0090-AR-4).

6. REVIEWER'S NOTES:

This modification adds a 2.5-kW (approximately 0.009 MMBtu/hr or 1.3-hp) propane-fired Meteorology Tower Emergency Generator (SN-27). SN-27 is an existing emergency engine manufactured in 1986 and installed in 1987. It was removed from Permit #0090-AR-7 inadvertently. It is subject to the applicable requirements of 40 C.F.R. Part 63, Subpart ZZZZ, listed in Specific Conditions #28 and #30 through #35. SN-27 will provide an emergency source of power for the Meteorology Tower in the event of an on-site power outage.

The permit was updated to use current standard language.

Annual permitted emissions due solely to the addition of SN-27 are increasing by 0.1 tpy PM/PM₁₀/SO₂/VOC/CO/NO_x, and 0.001 Total HAP. During the permit review, discrepancies were found between the Total Allowable Emissions table in the previous permit and the emissions as totaled from Specific Conditions #1 and 2. It was also found that the combined emission limit of 0.6 tpy VOC for the source group of tanks SN-16 through SN-21 were inadvertently deleted from Specific Condition #1 in Permit #0090-AR-5. After incorporating SN-27, restoring the emissions limit for the tank group, and totaling the emissions from Specific Conditions #1 and 2 again, annual permitted emissions increased by 0.1 tpy PM, 0.3 tpy VOC, and 0.001 Total HAP, and decreased by 0.7 tpy SO₂, 2.7 tpy CO, and 12.2 tpy NO_x.

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 11, 2021; the inspection revealed no areas of concern. There are no active or pending enforcement actions.

8. PSD/GHG 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? N

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
05, 06, 07, 08, 09, 11, 12, 13, 14, 27	HAPs	40 C.F.R. Part 63, ZZZZ
25	Throughput	40 C.F.R. Part 63, CCCCCC
10	PM, NO _x , CO	40 C.F.R. Part 60, IIII
01, 02, 03	HAPs	40 C.F.R. Part 63, JJJJJ
26	VOC, CO, NO _x	40 C.F.R. Part 60, JJJJ

10. UNCONSTRUCTED SOURCES:

Unconstructed Source	Permit Approval Date	Extension Requested Date	Extension Approval Date	If Greater than 18 Months without Approval, List Reason for Continued Inclusion in Permit
N/A				

11. PERMIT SHIELD – TITLE V PERMITS ONLY:

N/A (minor source permit).

12. COMPLIANCE ASSURANCE MONITORING (CAM) – TITLE V PERMITS ONLY:

N/A (minor source permit).

13. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

14. AMBIENT AIR EVALUATIONS:

The following are results for ambient air evaluations or modeling.

a) NAAQS

A NAAQS evaluation is not required under 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 DEQ Air Permit Screening Modeling Instructions.

b) Non-Criteria Pollutants:

Based on Division of Environmental Quality procedures for review of non-criteria pollutants, emissions of non-criteria pollutants are below thresholds of concern.

c) No other modeling was required.

15. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
05, 06, 07, 08, 11, 12	AP-42, Chapter 3, Table 3.4-1, 3.4-2, 3.4-3 and 3.4-4	2.43E-03 lb SO ₂ /hp-hr 0.024 lb NO _x /hp-hr 5.5E-03 lb CO/hp-hr 7.05E-04 lb VOC/hp-hr 6.20E-02 lb PM/hp-hr 6.97E-02 lb PM ₁₀ /hp-hr	None	None	None
09, 13, 14	AP-42, Chapter 3, Table 3.3-1 and 3.3-2	2.05E-03 lb SO ₂ /hp-hr 0.031 lb NO _x /hp-hr 6.68E-03 lb CO/hp-hr 2.47E-03 lb VOC/hp-hr 2.20E-03 lb PM/PM ₁₀ /hp-hr	None	None	None
10	Certificate of Conformity; AP-42, Chapter 3.4, Table 3.4-1; AP-42, Chapter 3.4, Table 3.4-3	1.21E-05 lb SO ₂ /hp-hr 5.8 g NO _x /kw-hr 0.41 g CO/kw-hr 5.8 g VOC/kw-hr 0.16 g PM/PM ₁₀ /kw-hr			Table 3.4-1 based on 15 ppm sulfur
01, 02, 03, 38	AP-42, Chapter 1, Table 1.3-1, 1.3-3 and 1.3-9	7.10 lb SO ₂ /10 ³ gal 20.00 lb NO _x /10 ³ gal 5.00 lb CO/10 ³ gal 0.25 lb VOC/10 ³ gal 2.00 lb PM/10 ³ gal 3.30 lb PM ₁₀ /10 ³ gal	None	None	SO ₂ factor assumes 0.05% sulfur in fuel oil; PM ₁₀ includes condensables (Table 1.3-2); SN-01 rated 94.60 MMBtu/hr; SN-02/SN-03 rated 31.40 MMBtu/hr; SN-38 rated 82.60 MMBtu/hr; 140 MMBtu/1000 gallons; Annual limits limited to 10% capacity
26, 27	AP-42, Chapter 3 Table 3.2-3	<u>lb/MMBtu</u> PM: 9.91E-03 PM ₁₀ : 9.50E-03 SO ₂ : 5.88E-04 VOC: 2.96E-02	None	None	100 hr/yr
26	Certificate of Conformity	<u>g/kW-hr</u> NO _x : 13.4 CO: 519.0	None	None	100 hr/yr

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
27	AP-42, Chapter 3 Table 3.2-3	lb/MMBtu NO _x : 13.4 CO: 519.0	None	None	100 hr/yr. 2.5 kW = 1.285 hp = 0.00853 MMBtu/hr.

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
No Testing Requirements				

17. 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)
No Monitoring or CEMS				

18. 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	592,000 gallons	Monthly	N
02	Fuel	196,000 gallons	Monthly	N
03	Fuel	196,000 gallons	Monthly	N
16, 17, 18, 19, 20, 21	Diesel Throughput	2,428,800	Monthly	N
25	Gasoline Throughput	24,000	Monthly	N
Facility	Sulfur content of #2 diesel fuel burned	15 ppm	Each shipment	N
09, 10, 11, 12, 13, 14, 26, 27	Hours of operation	100 hours per year each engine	Monthly	N
05, 06, 07, 08	Hours of operation	300 hours per year each engine	Monthly	N
38	Fuel	517,000 gallons	Monthly	N

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
38	Months of operation	12 consecutive months	Monthly	N
26	Records required by § 60.4245(a), See Specific Condition #59	-	-	N

19. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01, 02, 03, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 38	20%	Rule 19.503	Inspector Observation
26, 27	5%	Rule 18.501	Inspector Observation

20. DELETED CONDITIONS:

Former SC	Justification for removal
No conditions were deleted this permit action.	

21. 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
Scrubber	A-13			0.02				

22. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

The following is a list of all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
0090-AR-6

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Minor Source

Revised 03-11-16

Facility Name: Entergy Arkansas, LLC
 (Entergy-Arkansas Nuclear One)
 Permit Number: 0090-AR-7
 AFIN: 58-00002

			Old Permit	New Permit
\$/ton factor	27.27	Permit Predominant Air Contaminant	80.1	67.9
Minimum Fee \$	400	Net Predominant Air Contaminant Increase	-12.2	
Minimum Initial Fee \$	500			
Check if Administrative Amendment	<input type="checkbox"/>	Permit Fee \$	400	
		Annual Chargeable Emissions (tpy)	67.9	

Pollutant (tpy)	Old Permit	New Permit	Change
PM	6.8	6.9	0.1
PM ₁₀	8.3	8.3	0
PM _{2.5}		0	0
SO ₂	12.7	12	-0.7
VOC	3.5	3.8	0.3
CO	21.7	19	-2.7
NO _x	80.1	67.9	-12.2
Total HAP	0.133	0.134	0.001