STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0449-AOP-R18 AFIN: 32-00042

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Entergy Arkansas, LLC—Independence Plant
555 Point Ferry Road
Newark, Arkansas 72562

3. PERMIT WRITER:

Jesse Smith

4. NAICS DESCRIPTION AND CODE:

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

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
9/7/2022	Minor Mod	Updated emission factors for SN-07 and SN-24

6. REVIEWER'S NOTES:

Entergy Arkansas, LLC - Independence (AFIN: 32-00042) located near Newark, Arkansas is a two-unit electric generating station which generates electric energy for sale. Entergy submitted an application to the Title V permit with the following modifications.

- Revise Specific Conditions #7 and #8 to incorporate the obligations reached in the Settlement Agreement between Entergy, Sierra Club, and the National Parks Conservation Association as well as to satisfy Regional Haze requirements.

- Revise emission limits for SN-07 and SN-24 reflecting updates to AP-42 emission factors.
- Include kerosene-fired space heaters into the facility's Insignificant Activities list.

As a result of this modification, emissions of VOC decreased by 0.6 tpy.

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 June 22, 2022. There were no areas of concern noted at this time. The facility has no significant violations noted on ECHO.

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.

Emissions only decreased with this permit modification.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
SN-01 SN-02	PM SO_2 NO_x CO_2 Opacity	40 CFR Part 60, Subpart D
SN-01 SN-02	PM SO_2 CO	PSD
SN-03 SN-06A SN-06B	Opacity	40 CFR Part 60, Subpart Y
Facility	Asbestos	40 CFR Part 61, Subpart M
SN-20 SN-21	There are no specific emission limits or pollutants identified,	40 CFR Part 63, Subpart ZZZZ

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
SN-23	but the rules generally regulate HAPs	
SN-01 SN-02	PM SO_2 Mercury Non-Mercury Metal HAPs HCl	40 CFR Part 63, Subpart UUUUU
SN-01 SN-02	SO_2 NO_x	40 CFR Part 72, Subpart A-D – Permits Regulation (Acid Rain)
SN-05	Operating Scenario 1: Only a tune up is required Operating Scenario 2: Opacity PM CO HCl Mercury TSM	40 CFR Part 63, Subpart DDDDD
23	CO NO_x	NSPS Subpart 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:

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 Rule 18 requirement.)

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

List sources potentially subject to CAM because they use a control device to achieve compliance and have pre-control emissions of at least 100 percent of the major source level. List the pollutant of concern and a brief summary of the CAM plan (temperature monitoring, CEMs, opacity monitoring, etc.) and frequency requirements of § 64.

Source	Pollutant Controlled	Cite Exemption or CAM Plan Monitoring and Frequency
01, 02	SO_2 CO_2 NO_x Opacity	CEM – Continuous Monitoring

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:

The facility has been reviewed under the NCAP strategy which includes any single NCAP HAP with emissions equal to or greater than 10 tpy or a TLV less than 1 mg/m^3. Emergency generator emissions are included in the evaluation of the DeMinimis level HAPs but are not modeled per ADEQ guidance.

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.

The facility emits HAPs related to incomplete combustion.

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 × TLV	Proposed lb/hr	Pass?

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Acrolein**	0.22	0.0242	0.41	N
Arsenic	0.01	0.0011	0.41	N
Beryllium	0.00005	5.5E-06	0.023	N
Cadmium	0.002	0.00022	0.054	N
2-Chloroacetophenone	0.316	0.0347	0.008	Y
Chromium	0.003	0.0033	0.274	N
Chromium VI	0.0002	0.000022	0.083	N
Cobalt	0.02	0.0022	0.101	N
Cyanide***	5.19	0.5709	2.625	N
Dimethyl Sulfate	0.51	0.0561	0.0504	Y
Hydrogen Chloride**	2.98	0.328	84.0	N
Hydrogen Fluoride	0.409	0.045	157.50	N
Manganese	0.02	0.0022	0.516	N
Mercury	0.01	0.0011	0.088	N
Methyl Hydrazine	0.0188	0.002	0.179	N
Methylene Chloride	173.68	19.1048	0.305	Y
Nickel	0.1	0.011	0.295	N
Polycyclic Organic Matter/PAH*	0.2	0.022	0.716	N
Selenium	0.2	0.022	1.368	N
2,3,7,8-TCDD	0.001****	0.00011	1.5E-08	Y
N_2O	90.02	9.90	61.68	N
H_2SO_4	0.2	0.022	17.457	N

* - TLV for coal tar pitch volatiles.
** - Ceiling Limit TLV.
*** - Ceiling Limit TLV for hydrogen cyanide.
**** - Hypothetical value. No TLV was found for 2,3,7,8-TCDD. Thus, the reviewing engineer screened this pollutant based on a hypothetical TLV of 0.001 mg/m^3.

2^{nd} 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?
Acrolein	2.2	0.00519	Y
Arsenic	0.1	0.00187	Y
Beryllium	0.0005	0.00033	Y
Cadmium	0.02	0.0008	Y

Pollutant	PAIL ($\mu g/m^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu g/m^3$)	Pass?
Chromium	0.03	0.0013	Y
Chromium VI	0.002	0.00033	Y
Cobalt	0.2	0.00042	Y
Cyanide	51.9	0.01044	Y
Hydrogen Chloride	29.8	0.3342	Y
Hydrogen Fluoride	4.09	0.6267	Y
Manganese	0.2	0.00247	Y
Mercury	0.1	0.00081	Y
Methyl Hydrazine	0.188	0.00071	Y
Nickel	1.0	0.00138	Y
POM/PAH	2.0	0.00022	Y
Selenium	2.0	0.00641	Y
N_2O	900.2	0.3651	Y
H_2SO_4	2.0	0.4655	Y

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 Y
If exempt, explain: No H2S emissions

15. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01	Coal Fired: Permit Limits AP-42 (Tables 1.1-13, 1.1-14, 1.1-15, 1.1-17 and 1.1-18) PSD limits Fuel Oil Fired: Estimated Emissions AP-42 (Tables	Coal Fired: AP-42 Lead: 0.00042 lb/ton HAPs: various see AP-42 Fuel Oil Fired: AP-42	ESP	99.5%	---

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	1.3-1, 1.3-3, 1.3-9, and 1.3-10) AIRS Emission Factor EPRI PSD limits	SO_2: 71.0 lb/1000 gal VOC: 0.252 lb/1000 gal NO_x: 24 lb/1000 gal Lead: 9 lb/10^{12} BTU HAPs: various see AP-42			
	NESHAP UUUUU AP-42, 1.1-5	HCl: 2.0E-03 lb/MMBtu	None	N/A	4,600,000 ton/yr Coal heat content - 20 MMBtu/ton Hourly safety factor (x2)
02	Coal Fired: Permit Limits AP-42 (Tables 1.1-13, 1.1-14, 1.1-15, 1.1-17 and 1.1-18) PSD limits Fuel Oil Fired: Estimated Emissions AP-42 (Tables 1.3-1, 1.3-3, 1.3-9, and 1.3-10) AIRS Emission Factor EPRI PSD limits	Coal Fired: AP-42 Lead: 0.00042 lb/ton HAPs: various see AP-42 Fuel Oil Fired: AP-42 SO_2: 71.0 lb/1000 gal VOC: 0.252 lb/1000 gal NO_x: 24 lb/1000 gal Lead: 9 lb/10^{12} BTU HAPs: various see AP-42	ESP	99.5%	---
	NESHAP UUUUU	HCl: 2.0E-03 lb/MMBtu	None	N/A	4,600,000 ton/yr Coal heat content - 20

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	AP-42, 1.1-5				MMBtu/ton Hourly safety factor (x2)
03	Permit Limits AP-42 13.2.4-3 Equation 1	See AP-42 13.2.4-3 Equation 1	Enclosure Chemical Suppressant	50% 90%	k = 0.74 U = 7.0 mph M = 28%
04	Permit Limits AP-42 13.2.4-3 Equation 1	See AP-42 13.2.4-3 Equation 1	Baghouse Enclosure	99.9% PM 99.8% PM_{10} 80% PM/PM_{10}	Two Silos (North and South) k = 0.74 U = 7.0 mph M = 4.8%
05	AP-42 Tables 1.3-1, 1.3-3, 1.3-9, and 1.3-10 Boiler MACT	lb/Mgal: 3.3 PM 2 PM_{10} 71 SO_2 0.252 VOC 24 NO_x lb/10^{12} BTU: 9 Lead HAPs: various see AP-42 130 ppm_{vd} CO	N/A	N/A	PM_{10} emission factor represents filterable portion only Max Sulfur content = 0.5% CO emissions are based on a correction to 3% O_2 consistent with the Boiler MACT
06	Material Handing AP-42 13.2.4-3 Equation 1 Bull Dozing Table 11.9-1 Paved Roads 13.2.1.3	Various Equations Used See AP-42	Enclosures Chemical Suppressant Baghouse	Up to 80% 90% 99.9% PM 99.8% PM_{10}	Haul Roads and Landfill surfaces dust suppressant is permitted to contain up to 1.0 lb VOC/gal--- Material Handing k = 0.74 U = 7.0 mph M = 28% Bull Dozing

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	Equation 1 Unpaved Roads 13.2.2-2 Equation 1				M = 28% s = 8.6% Paved Roads K=0.022 (PM_{10}) K=0.011 (PM) sL=12 g/m^2 W= 27 tons P=100 days P= 496 hrs Unpaved Roads s = 6.8 % s = 8.6% (water wagon) k = 1.5 lb/VMT(PM_{10}) k = 4.9 lb/VMT(PM) a = 0.7 (PM) a = 0.9 (PM_{10}) b = 0.45 W=27 tons W=37 tons (water wagon) P=100 days
07	TANKS	VOC 1.5 lb/hr 0.6 tpy	None	None	112,000,000 gal/yr 60,000 gal/hr
16	AP-42 Table 13.4-1	PM: 0.073 lb drift/kgal PM_{10}: 0.073 lb drift/kgal	N/A	N/A	Based on 21,600 kgal/hr circulating water flow and a total dissolved solids content of 3,600 ppm.
17	AP-42 Table 13.4-1	PM: 0.073 lb drift/kgal PM_{10}: 0.073 lb drift/kgal	N/A	N/A	Based on 21,600 kgal/hr circulating water flow and a total dissolved solids content of 3,600 ppm.
18	Material Balance, MSDS	Turbine Oil Filter Degreaser: 7.59 lb VOC/gal All Other	N/A	N/A	Hourly emissions based on 1 gal/hr other degreasers and worst case of 150 hr/yr (0.213 gal/hr) for turbine oil filter degreaser. Annual emissions based on 3,480 gal/yr other degreasers and

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		Degreasers: 6.8 lb VOC/gal			32 gal/yr turbine oil filter degreaser.
19	AP-42 Background of 13.2.6	0.063 lb PM/lb sand 0.022 lb PM_{10}/lb sand	Baghouse	95%	Annual based on 8760 hr/yr. 550 lb sand/hr 4,818,000 lb sand/yr
20	AP-42 (Tables 3.4-1, 3.4-3, & 3.4-4)	lb/MMBtu: 0.0573 PM_{10} 0.505 SO_2 0.09 VOC 0.85 CO 3.2 NO_x HAPs: various see AP-42	N/A	N/A	2,160 hours per year. 8.22 MMBtu/hr
21	AP-42 (Tables 3.3-1 & 3.3-2)	lb/MMBtu: 0.31 PM_{10} 0.29 SO_2 0.36 VOC 0.95 CO 4.41 NO_x HAPs: various see AP-42	N/A	N/A	3,000 hours per year. 2.74 MMBtu/hr
23	NSPS Subpart JJJJ AP-42 Table 3.2	lb/MMBtu PM/PM_{10}: 0.01941 SO_2: 0.000588 g/KW-hr CO: 519 VOC: 13.4 NO_x: 13.4	N/A	N/A	500 hours per year 64.1 bhp 0.42 MMBtu/hr AP-42 factors – additional 20% safety factor HAPs emission factors used more conservative rich vs lean burn
24	TANKS	VOC 23.0 lb/hr 0.4 tpy	None	None	15,600 gal/yr 2,000 gal/hr HAP Vapor Phase Wt. % 5.7 %

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
01 and 02	PM	5/202	Every 5 years	To demonstrate compliance with PM emission rates.
	PM_{10}	201A/202	Every 5 years	To demonstrate compliance with PM_{10} emission rates.
	SO_2	6	Initial	NSPS Requirement
	NO_x	7	Initial	NSPS Requirement
	CO (post Low NO_X SOFA project)	10	Bi-Annual	To demonstrate compliance with PSD limit of 0.15 lb MMBtu/hr 3hr average

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)
01, 02	SO_2 CO_2 NO_x Opacity	CEM	Continuously	Y

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, 02	Quarterly Reports	N/A	Quarterly	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
01, 02	SO_2 emissions	0.93 lb/MMBtu	Continuously	Y
01, 02	SO_2 emissions	0. 60 lb/MMBtu Effective August 7, 2021	Continuously 30 operating day average	Y
01, 02	NO_x emissions	0.7 lb/MMBtu	Continuously	Y
01, 02	SO_2 annual emissions	70,877.2 tpy	Monthly	Y
01, 02	NO_x annual emissions	53,348.4 tpy	Monthly	Y
01, 02	Operating Scenario	N/A	As Needed	N
01, 02	Heat Input	N/A	Hourly	N
01, 02	Opacity	20% (one-hour average)	Continuously	N
01, 02	Coal analyses documentation and Calculations (if needed)	See Specific Condition # 30	As Needed	N
01, 02, 05, 20, & 21	%S of fuel oil	0.5%	Per shipment	N
05	Average annual capacity factor	Not to exceed 10%	Monthly	Y
	Fuel use records	N/A		
05	Opacity records	20%	Weekly	N
05	When operated	N/A	As Needed	N
03, 06	HAP content of chemical foam spray	No HAPs	As Needed	Y
03, 06	VOC content of chemical foam spray	1.42% by weight	As Needed	Y
03, 06	Chemical foam spray usage	300,000 lb/yr	Monthly	Y
06	Total traffic from activated carbon deliveries, halide solution deliveries, and fly ash trucks vehicle miles traveled	61,320 VMT/yr (Paved roads)	Monthly	Y
06		12,045 VMT/yr (Unpaved roads)	Monthly	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
06	Operation of Coal Yard Dozers	12,000 hr/yr (combined)	Monthly	Y
06	Water wagon vehicle miles traveled	3,000 hr/yr	Monthly	Y
06	Opacity records	20%	Weekly	N
06C	Dust Suppressant use and VOC content	10,000 gallons/yr No more than 1.0 lb VOC/gal	Monthly	Y
04	Log of baghouse maintenance inspections	N/A	Semi-annual	N
04	Opacity records	5%	Daily	Y
07	No. 2 Fuel Oil	112,000,000 gal/yr	Monthly	Y
16, 17	Dissolved solids content	3,600 ppm	Weekly	N
16, 17	Water flow	21,600 kgal/hr	Annually	N
18	VOC content of solvent	Turbine Oil Filter Degreaser: 7.59 lb/gal All Other Degreasers: 6.8 lb/gal	As Needed	N
18	Solvent usage	Turbine Oil Filter Degreaser: 32 gal/yr All Other Degreasers: 3,480 gal/yr	Monthly	Y
20	Hours of Operation	2,160 hr/yr	Monthly	Y
21	Hours of Operation	3,000 hr/yr	Monthly	Y
23	Hours of Operation	500 hr/yr	Monthly	Y
	Hours of operation	Maintenance Check: 100 hours/year Non-emergency: 50 hours/yr	As Needed	N

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
24	Gasoline throughput	15,600 gal/yr	Monthly	Y
Plantwide	Coal throughput	9.2 million tons/yr	Monthly	Y

19. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01, 02	20, 27	NSPS limit	COM
01, 02	20, 60	State limit	COM
01, 02	20	CAM (1-hr and 3-hr averages)	COM
03	20	Department guidance	Maintenance plan requirements
04	5	Department guidance	Daily observations
05	20	Department guidance	Weekly observations
06	20	Department guidance	Weekly observations
16, 17	5	Department guidance	Operating equipment within design
19	5	Department guidance	Operating control equipment within design
20 & 21	20	Department guidance	Annually or Daily if in operation longer than 24 hours
23	5	Department guidance	Propane combustion only

20. DELETED CONDITIONS:

Former SC	Justification for removal
N/A	

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
Kerosene Fired Space	A-1	0.8	0.00516	0.173	1.21	4.85	8.00E-03	0.206

Source Name	Group A Category	Emissions (tpy)						
		PM/PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							Single	Total
Heater (46 Total)								
Unit 1 ID Fan Lube Oil Reservoir (T8)	A-2			1.43E-07				
Unit 1 ID Fan Hydraulic Reservoir (T9)	A-2			1.45E-07				
Unit 1 ID Fan Motor Oil Reservoir (T10)	A-2			6.97E-07				
Condenser Vacuum Pump Lubricating Reservoir (T12)	A-2			9.09E-08				
Unit 2 ID Fan Lube Oil Reservoir (T19)	A-2			1.43E-07				
Unit 2 ID Fan Hydraulic Reservoir (T20)	A-2			1.59E-07				
Unit 2 ID Fan Motor Oil Reservoir (T21)	A-2			6.97E-07				
Condenser Vacuum Pump Lubricating Reservoir (T23)	A-2			9.09E-08				
Condenser Vacuum Pump Oil Separators (T24A)	A-2			5.24E-07				
Condenser Vacuum Pump Oil	A-2			5.24E-07				

Source Name	Group A Category	Emissions (tpy)						
		PM/PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							Single	Total
Separators (T24B)								
Oil Drum Storage (T52)	A-2			7.57E-07				
Unit 1 Seal Oil Vapor Separating Tank (T69)	A-2			4.05E-08				
Unit 2 Seal Oil Vapor Separating Tank (T70)	A-2			4.05E-08				
Unit 1 and Unit 2 Seal Oil Filters x 4 (T71-T74)	A-2			2.05E-06				
Unit 1 Lube Oil Storage Tanks x 3 (T75-T77)	A-2			3.99E-06				
Unit 2 Lube Oil Storage Tanks x 3 (T78-T80)	A-2			3.99E-06				
Vehicle Maintenance Area Lube Oil Tanks x 3 (T87-89)	A-2			3.74E-06				
Turbine Lube Oil Tank (T-91)	A-2			1.17E-06				
A-2 Total				1.90E-05				
Unit 1 Turbine Lube Oil Reservoir (T3)	A-3			7.31E-05				
Unit 1 EHC Reservoir (T4)	A-3			2.78E-06				
1A & 1B BFPT Lube Oil Reservoir (T5)	A-3			2.88E-06				
Unit 1	A-3			2.24E-04				

Source Name	Group A Category	Emissions (tpy)						
		PM/PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							Single	Total
Generator Seal oil Tank (T6)								
Unit 1 Lube Oil Bowser (T11)	A-3			1.63E-06				
Unit 2 Turbine Lube Oil Reservoir (T14)	A-3			7.31E-05				
Unit 2 EHC Reservoir (T15)	A-3			2.78E-06				
2A & 2B BFPT Lube Oil Reservoir (T16)	A-3			2.88E-06				
Unit 2 Generator Seal Oil Tank (T17)	A-3			4.34E-06				
Unit 2 Lube Oil Bowser (T22)	A-3			7.18E-06				
Emergency Diesel Generator Fuel Oil Tank (T25)	A-3			1.63E-04				
Emergency Fire Pump Diesel Tank (T26)	A-3			1.63E-04				
Diesel Storage Tank – Landfill (T28)	A-3			3.90E-04				
Kerosene Storage Tank (T33)	A-3			4.05E-04				
Portable Diesel Storage Tanks (T83, T92)	A-3			3.82E-04				
Outage Diesel Storage Tank	A-3			1.79E-04				

Source Name	Group A Category	Emissions (tpy)						
		PM/PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							Single	Total
(T84)								
Outage Diesel Storage Tank (T85)	A-3			3.43E-04				
Coal Yard Hydraulic Tank (T86)	A-3			4.93E-04				
Diesel Storage Tank 10,000 gal (T90)	A-3			1.14E-02				
A-3 Total				1.43E-02				
Unit 1 Turbine Lube Oil Storage Tank (T2)	A-13			2.47E-06				
Unit 2 Turbine Lube Oil Storage Tank (T13)	A-13			2.47E-06				
Oily Water Separator – RCD (W6)	A-13			1.81E-07				
Oily Water Separator (W7)	A-13			1.64E-06				
Oily Water Separator Tank (W8)	A-13			1.64E-06				
Turbine Area Sumps (W9)	A-13	No emissions expected						
Unleaded Gasoline Dispensing Station (X1)	A-13			2.43E-01				
Diesel Fuel Dispensing Stations x 5 (X4)	A-13			1.22				
Kerosene Dispensing Tank # 1 (X5)	A-13			2.43E-01				
Transformers (X24-X28)	A-13	These are closed loop systems						

Source Name	Group A Category	Emissions (tpy)						
		PM/PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							Single	Total
		with no potential for emissions from the insulating oil.						
Switchyard Oil Circuit Breaker (X29)	A-13							
Aerosol Lubricant Fugitives (X57)	A-13			8.75E-02			5.25E-02	0.0875
Aerosol Degreaser Fugitives (X58)	A-13			1.89E-01			0.189	0.189
Insecticide Fugitives (X59)	A-13			2.96E-02				
Aerosol Can Puncture Station (X60)	A-13			3.78E-01			0.378	0.378
(2) Powdered Halide Hoppers (X61)	A-13	7.38E-05						
Bottom Ash Bunker System (X62)	A-13	4.02E-01						
Unit 1 AC Silo (X115)	A-13	3.38E-03						
Unit 2 AC Silo (X116)	A-13	3.38E-03						
Unit 1 Economizer Ash Silo (M60)	A-13	PM: 2.48E-01 PM_{10}: 1.17E-01						
Unit 2 Economizer Ash Silo (M61)	A-13	PM: 2.48E-01 PM_{10}: 1.17E-01						
Fly Ash Railcar	A-13	PM: 9.43E-05						

Source Name	Group A Category	Emissions (tpy)						
		PM/PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							Single	Total
Transloader (X63)		PM_{10}: 4.46E-05						
A-13 Total		PM: 9.05E-01 PM_{10}: 6.43E-01		2.39				6.55E-01

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 #
0449-AOP-R17

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Entergy Arkansas, LLC—Independence Plant
Permit #: 0449-AOP-R18
AFIN: 32-00042

$/ton factor	27.27	Annual Chargeable Emissions (tpy)	13553.01
Permit Type	Minor Mod	Permit Fee $	500

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)	-0.6
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		6212	6212	0	0	4000
PM_{10}		5982.7	5982.7	0		
$PM_{2.5}$		0	0	0		
SO_2		71,299.80	71299.8	0	0	4000
VOC		331.6	331	-0.6	-0.6	331
CO		11538.6	11538.6	0		
NO_X		53536.4	53536.4	0	0	4000
Lead	☑	1.95	1.95	0	0	1.95

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Total HAP	☐	931.38	931.38	0		
Cyanide	☐	11.5	11.5	0		
Hydrogen Chloride	☑	184	184	0	0	184
Hydrogen Fluoride	☑	689.86	689.86	0	0	689.86
Methylene Chloride	☑	1.34	1.34	0	0	1.34
H2SO4	☑	74.79	74.79	0	0	74.79
N2O	☑	270.07	270.07	0	0	270.07