

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1717-AOP-R10 AFIN: 30-00011

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Entergy Arkansas, LLC - Lake Catherine Plant
141 West County Line Road
Malvern, Arkansas 72104

3. PERMIT WRITER:

Bart Patton

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
2/24/2025	Modification	Adding SN-11 (new turbine) and SN-12 through SN-22 (support equipment for new turbine) for use after SN-03, SN-10, and all category A I.A. items are removed from service

6. REVIEWER’S NOTES:

Entergy Arkansas, LLC – Lake Catherine Plant is a natural gas fired power generating station located at 141 West County Line Road in Malvern, Arkansas. The facility proposes to build a new natural gas-fired simple cycle Combustion Turbine (CT) Electric Generating Unit (EGU) at the existing Lake Catherine facility.

The project will consist of constructing a new Mitsubishi Model M501JAC simple cycle combustion turbine referred to as Ironwood Power Station Unit 5 (IPS). There will be additional sources due to IPS: SN-12, Emergency Standby Generator; SN-13, Diesel Emergency Fire Water Pump; SN-14, Natural Gas Condensate Tank 3; SN-15, Natural gas Condensate Tank 4; SN-16, Combustion Turbine Lube Oil Vent; SN-17, Natural Gas Fugitive Emissions; SN-18, Ammonia Fugitive Emissions; SN-19, Diesel Fugitive Emissions; SN-20 and 21, Emergency Generator Diesel Tank 1 and 2; and SN-22, Natural Gas Dewpoint Heater. PSD significant pollutants for this project are PM/PM₁₀/PM_{2.5}, VOC, CO, H₂SO₄, and CO_{2e}.

The permit was also updated to use Code of Arkansas Rules (CAR) citations and current standard language and the latest Acid Rain permit. Emissions will be unchanged until the LC4 unit and its associated equipment have been removed, and IPS and its support equipment are operational.

Annual permitted emissions increased as follows: 84.56 tpy Ammonia, 12.35 tpy H₂SO₄.

BACT Summary				
Source	Description	Pollutant	Control Technology	BACT Limit
SN-11	Gas Turbine	CO	Catalytic oxidation	4.0 ppmvd CO @ 15% O ₂ (24-hr average basis)
		VOC	Catalytic oxidation	1.0 ppmvd CO @ 15% O ₂ (annual average basis)
		PM ₁₀ /PM _{2.5}	Use of low sulfur pipeline natural gas and good combustion practices	0.0052 lb PM/MMBtu (annual-average basis)
		SAM	Use of pipeline-quality natural gas	1.0 grains S/100 scf (maximum hourly), 0.5 grains S/100 scf (annual-avg basis).

BACT Summary				
Source	Description	Pollutant	Control Technology	BACT Limit
		GHG	Use of low-carbon natural gas fuel with an efficient power generation system	For intermediate load operating periods, GHG performance level of $\leq 1,170$ lb CO ₂ e/MWh of gross power output as required by During low-load operating periods, GHG performance level of ≤ 120 lb CO ₂ /MMBtu-HHV of heat input
SN-12	Emergency Standby Generator	CO	Certified Tier 2 engine which meets the NSPS IIII emergency engine CO performance level of 3.5 g CO/kWh.	3.50 g CO/kWh
		VOC	Meet the manufacturer's guaranteed VOC performance level of 0.56 g VOC/kWh.	0.56 g VOC/kWh
		PM ₁₀ /PM _{2.5}	Use of an USEPA-certified Tier 2 engine which meets the required NSPS subpart IIII emergency engine PM performance level of 0.2 g PM/kWh	0.20 g PM/kWh.
		GHG	Use of an efficient USEPA-certified Tier 2 engine which achieves GHG performance levels specified in Tables C-1 and C-2 of 40 CFR 98.	-
SN-13	Emergency Fire Water Pump	CO	Use of a USEPA-certified Tier 3 engine which meets a CO performance level of 3.5 g CO/kWh.	3.50 g CO/kWh
		VOC	Meet the manufacturer's guaranteed VOC performance level of 0.11 g VOC/kWh.	0.11 g VOC/kWh
		PM ₁₀ /PM _{2.5}	Use of an USEPA-certified Tier 3 engine with a PM performance level of 0.2 g PM/kWh.	0.20 g PM/kWh

BACT Summary				
Source	Description	Pollutant	Control Technology	BACT Limit
		GHG	Use of an efficient USEPA-certified Tier 3 engine which achieves GHG performance levels specified in Tables C-1 C-2 of 40 CFR 98.	-
SN-22	Natural Gas Dew Point Heater	CO	Use of good combustion practices	0.037 lb CO/MMBtu
		VOC	Use of good combustion practices	0.008 lb VOC/MMBtu
		PM ₁₀ /PM _{2.5}	Use of good combustion practices	0.0048 lb PM/MMBtu
		GHG	Use of clean burning and efficient pipeline natural gas fuel and the employment of good combustion practices to achieve GHG emissions performance levels prespecified in Tables C-1 and C-2 of 40 CFR 98.	-
SN-14, SN-15, SN-20, and SN-21	Tanks – Diesel and Natural gas Condensate	VOC	Use of white, horizontal fixed-roof storage vessel with an atmospheric vent.	-
SN-16	Combustion Turbine Lube Oil Vent	VOC	Use of a mist eliminator to reduce emissions of oil droplets from the lube oil reservoir	-
		PM ₁₀ /PM _{2.5}		-
SN-17 and SN-19	Natural gas and Diesel Fugitives	VOC	Employ an audio-visual-olfactory program to detect and repair equipment component leaks.	-
		GHG		-

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’s most recent inspection on October 28, 2024, did not find any areas of concern.

8. PSD/GHG APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? Y
 If yes, were GHG emission increases significant? Y

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*

At Permit #1717-AOP-R10, the project to add IPS Unit #5 (including SN-11, a gas-fired turbine) was evaluated under PSD. The facility was not subject to PSD for NO_x (due to netting for the removal of SN-03 as part of the project) or SO₂. The facility was subject to PSD for PM, PM₁₀, PM_{2.5}, VOC (as a precursor to Ozone), CO, Sulfuric Acid Mist, and GHGs (CO_{2e}).

40 C.F.R. § 52.21(b)(1)(iii) lists the subcategories of industrial facilities subject to stricter scrutiny under PSD. SN-11 is a simple-cycle turbine. It generates electricity by the direct expansion of combustion gases through the turbine, not by steam. As such, when LC4 is removed from service and IPS5 is brought into service, the facility will not qualify as a fossil fuel-fired steam electric plant or any other category on that list. However, it does exceed 250 tpy of a criteria pollutant.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
11	PM, PM ₁₀ , PM _{2.5} , VOC (as a precursor to Ozone) CO, Sulfuric Acid Mist (SAM)	PSD
	SO ₂ , NO _x	NSPS KKKKa
	CO _{2e}	NSPS TTTTa
12,13	HAPs	NSPS IIII
10, 12, 13	HAPs	NESHAP ZZZZ

LC4 is permitted as a major source of HAP. When LC4 is removed from service and IPS5 is brought into service, the facility will not be a major source of HAP. Because the facility will not be a major source of HAP when SN-11 (a stationary combustion turbine) is brought into service, the facility is not expected to be subject to 40 CFR 63 Subpart YYYYY, National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines. The new emergency engines also will not be subject to the major source requirements of NSPS IIII and NESHAP ZZZZ.

The natural gas-fired dewpoint heater (SN-22) is not subject to 40 CFR 60 Subpart Dc because its firing rate of 5.01 MMBtu/hr is less than the 10 MMBtu/hr applicability threshold for the subpart. The heater also does not meet the subpart’s definition of a steam generating unit. The heater will also not be subject to the 40 CFR 63 Subpart DDDDD, the Major Source Heater and Boiler MACT, because IPS will be an area source of HAP emissions. Finally, the heater will not be subject to the 40 CFR 63 Subpart JJJJJ, the Area Source Boiler MACT, because this regulation only covers boilers and not heaters.

The two natural-gas condensate tanks (SN-14 and 15) and the two diesel fuel storage tanks (SN-20 and SN-21) are not subject 40 CFR Subpart Kc because the volumes of these tanks are below the 20,000-gallon applicability threshold found in the subpart.

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

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
Not currently applicable		

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

The results of dispersion modeling are summarized below. The only pollutant that required NAAQS modeling was ozone for the new unit; all the other modeling for PSD has been included in the permit and will not be repeated in this section for brevity.

Pollutant	Averaging Period	Maximum predicted concentration (MERPS)	Background Concentration	Total	NAAQS
O ₃	8-hour	2.032 ppb	62 ppb	64.03 ppb	70 ppb

b) 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 Division of Environmental Quality has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m³), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

This modeling only reflects the operation of the LC5 unit and the associated sources. There is no need to include the SN-03 and 10 contributions because these sources would not be at the site once LC5 comes online.

Pollutant	TLV (mg/m ³)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Acrolein	0.11	0.012	0.01491	N
Benzene	0.06	0.0066	0.01344	N
PAH	0.2	0.022	0.0092	Y
Arsenic	0.01	0.0011	9.86E-07	Y
Beryllium	0.00005	0.0000055	5.92E-08	Y
Cadmium	0.01	0.0011	5.42E-06	Y
Chromium (Metallic)	0.5	0.055	6.9E-06	Y
Cobalt	0.02	0.0022	4.14E-07	Y

Pollutant	TLV (mg/m ³)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Manganese	0.02	0.0022	1.87E-06	Y
Mercury	0.025	0.00275	1.28E-06	Y
Nickel	0.1	0.011	1.04E-05	Y
Selenium	0.2	0.022	1.18E-07	Y
Ammonia	17.0	1.87	60.54	N
H ₂ SO ₄	1.0	0.11	17.90	N

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 Division of Environmental Quality to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

Pollutant	PAIL (µg/m ³) = 1/100 of Threshold Limit Value	Modeled Concentration (µg/m ³)	Pass?
Acrolein	1.1	0.00004	Y
Benzene	0.63	0.00025	Y
Ammonia	170.0	2.712	Y
H ₂ SO ₄	10.0	0.05193	Y

15. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equip.	Control Equip. Eff.	Comments
03	AP-42 Table 1.4-4	0.6 lb SO ₂ /10 ⁶ scf; 580 lb NO _x /10 ⁶ scf; 24 lb CO/10 ⁶ scf; 7.6 lb PM/10 ⁶ scf; 7.6 lb PM ₁₀ /10 ⁶ scf; HAPs (see app.)	None.		
10	AP-42 Table 3.4-1 thru 4	0.505 lb SO ₂ /MMBtu; 3.2 lb NO _x /MMBtu; 0.85 lb CO/MMBtu; 0.0697 lb PM/MMBtu; 0.0573 lb PM ₁₀ /MMBtu; HAPs (see app.)			
11	Vendor data AND proprietary modeling, BACT limits, CEMs, sulfur content of fuel	Operating Case 1, vendor data: 6.39% H ₂ O exh, 14.51% O ₂ wet. 11,625,071 lb exh/hr x 1 lbmol/ 28.53 lb exh x (1-6.39% H ₂ O/100) = 381,411 lbmol/hr dry. O ₂ = 14.51% O ₂ wet / (1-(6.39% H ₂ O)/100) = 15.5% O ₂ dry. 15 ppmvd NO _x @ 15% O ₂ , 46.01 lb NO _x /lbmol. 4 ppmvd CO @ 15% O ₂ , 28.01 lb CO/lbmol. 1 ppmvd VOC@ 15% O ₂ , 16.04 lb VOC/lbmol. 0.5 gr S/100scf max hourly 1.0 gr S/100 scf annual average SO ₂ and H ₂ SO ₄ each maximum based on the sulfur content 10 ppmvd Ammonia @15%O ₂	SCR/Ox catalyst	75% VOC 84% CO 63%NOX	Exhaust, vendor data: 11,625,071 lb/hr wet, 28.53 lb/ lbmol. Case 1: 4,056 MMBtu/hr ann avg. (Case 11 : 4119 short- term max). 1017 Btu/scf
	MACT YYYY emission limit	91 ppbvd Formaldehyde @ 15%O ₂			
	AP-42, Chapter 3.4 Background document, Table 3.4-1, page 37 of 47, for All Loads (not 80%+ Loads only), CO Catalyst Control Method factor used when available	1,3 Butadiene 4.3E-7 lb/MMBtu Acetaldehyde 1.76E-4 Acrolein 3.62E-6 Benzene 3.26E-6 Ethylbenzene 2.58E-5 Naphthalene 1.37E-6 PAH 2.25E-6 Toluene 9.37E-5 Xylenes 5.48E-5			

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equip.	Control Equip. Eff.	Comments
11	Vendor data for Startup/Shutdown events; NOX, CO, and VOC only	<p>Startup, lb/event: VOC 425 CO 845 NOX 134</p> <p>Shutdown, lb/event VOC 100 CO 292 NOx 50</p> <p>Startup duration: 32 minutes. Shutdown duration: 9 minutes.</p> <p>Case 11 max hourly rates: 11.37 lb VOC/hr 39.69 lb CO/hr 244.45 lb NOx/hr</p>	SCR/Ox catalyst	75% VOC 84% CO 63% NOX	<p>SUSD max hourly em rate: max lb/event + ((60-32 min) / (60 min/hr)) x max hourly rate at normal ops (Case 11, at 20F). VOC: 425 lb/event + (28/60) x 11.37 lb/hr = 430.30 lb/hr. CO: 863.52 lb/hr. NOx: 218.08 lb/hr.</p> <p>VOC and CO lb/hr are greater than normal ops lb/hr. NOx is less than normal ops.</p> <p>Annual emissions estimated based on 300 Startups and 300 Shutdowns per year. 300 events/yr x lb/event x 1 ton/2000 lb = tpy.</p> <p>Annual allowable time in SU or SD: duration (minutes/event) x 300 events/yr x 1 hr/60 min = hr/yr.</p>

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equip.	Control Equip. Eff.	Comments																																			
12	NSPS IIII Mass balance Vendor guarantee AP-42, Table 3.4-3 and Table 3.4-4, large uncontrolled diesel engines	. 0.20 g PM/kWh 3.5 g CO/kWh 6.4 g NOX/kWh 15 ppm Sulfur, mass balance 0.56 g VOC/kWh Total HAP 0.001574 lb/MMBtu See AP-42 for HAP speciation			500 hours/yr. 2180 kW. 453.59 g/lb. 160.1 gal/hr x 0.138 MMBtu/gal = 22.09 MMBtu/hr.																																			
13	NSPS IIII Mass balance Vendor guarantee AP-42, Table 3.3-2, uncontrolled diesel engines	. 0.2 g PM/kWh 3.5 g CO/kWh 4.0 g NOX/kWh 15 ppm Sulfur, mass balance 0.11 g VOC/kWh Total HAP 0.003874 lb/MMBtu See AP-42 for HAP speciation			500 hours/yr. 235 kW. 453.59 g/lb. 13.7 gal/hr x 0.138 MMBtu/gal = 1.89 MMBtu/hr.																																			
14, 15, 20, 21	AP-42, Fifth Edition, Volume 1, Chapter 7.1 Organic Liquid Storage Tanks - June 2020	14,15-used gasoline as a surrogate@400 gal each 20,21-diesel@4150 and 500 gallons			Max fill rate 14,15-400 gal/hr 20-4150 gal/hr 21-500 gal/hr																																			
16	Performance of similar units	0.01 gal/day/vent PM/VOC		Mist eliminator	Density 7.26 lb/gal, two vents																																			
17	Air Permit Technical Guidance for Chemical Sources: Fugitive Guidance, TCEQ, June 2018, SOCM1 w/o ethylene	<table border="1"> <thead> <tr> <th>Equipment</th> <th>Equipment (Counts¹)</th> <th>Factor² (kg/hr-compone nt)</th> <th>Factor (lb/hr-compone nt)</th> <th>C3+ Content (% weight)</th> </tr> </thead> <tbody> <tr> <td>Valves</td> <td>400</td> <td>0.00450</td> <td>0.00992</td> <td>1.58</td> </tr> <tr> <td>Flanges</td> <td>1000</td> <td>0.00039</td> <td>0.00086</td> <td>1.58</td> </tr> <tr> <td>Relief Valves</td> <td>7</td> <td>0.00880</td> <td>0.01940</td> <td>1.58</td> </tr> <tr> <td>Open-Ended Line</td> <td>80</td> <td>0.00200</td> <td>0.00441</td> <td>1.58</td> </tr> <tr> <td>Sampling Connections (hourly)³</td> <td>2</td> <td>0.01497</td> <td>0.03300</td> <td>1.58</td> </tr> <tr> <td>Sampling Connections (annual)^{3, 4}</td> <td>2190</td> <td>0.01497</td> <td>0.03300</td> <td>1.58</td> </tr> </tbody> </table>	Equipment	Equipment (Counts ¹)	Factor ² (kg/hr-compone nt)	Factor (lb/hr-compone nt)	C3+ Content (% weight)	Valves	400	0.00450	0.00992	1.58	Flanges	1000	0.00039	0.00086	1.58	Relief Valves	7	0.00880	0.01940	1.58	Open-Ended Line	80	0.00200	0.00441	1.58	Sampling Connections (hourly) ³	2	0.01497	0.03300	1.58	Sampling Connections (annual) ^{3, 4}	2190	0.01497	0.03300	1.58		AVO	
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18	Ammonia Loading	0.0073 scf/event 7.51lb/gal Ammonia @ 29% wt			52 events/yr																								
19	EPA-453/R-95-017, November 1995, Table 2-4, Oil and Gas Operation Average Emission Factors for gas. TCEQ Fugitive Guidance Document, Revised 6/18, SOCM1 w/o ethylene	<table border="1"> <thead> <tr> <th>Equipment/Service</th> <th>Equipment (Counts')</th> <th>Factor² (kg/hr-component)</th> <th>Factor (lb/hr-component)</th> </tr> </thead> <tbody> <tr> <td>Valves</td> <td>40</td> <td>8.4E-06</td> <td>1.9E-05</td> </tr> <tr> <td>Flanges</td> <td>60</td> <td>3.9E-07</td> <td>8.6E-07</td> </tr> <tr> <td>Compressors</td> <td>0</td> <td>3.2E-05</td> <td>7.1E-05</td> </tr> <tr> <td>Relief Valves</td> <td>0</td> <td>3.2E-05</td> <td>7.1E-05</td> </tr> <tr> <td>Open-Ended Lines</td> <td>10</td> <td>1.4E-04</td> <td>3.1E-04</td> </tr> </tbody> </table>	Equipment/Service	Equipment (Counts')	Factor ² (kg/hr-component)	Factor (lb/hr-component)	Valves	40	8.4E-06	1.9E-05	Flanges	60	3.9E-07	8.6E-07	Compressors	0	3.2E-05	7.1E-05	Relief Valves	0	3.2E-05	7.1E-05	Open-Ended Lines	10	1.4E-04	3.1E-04	AVO		
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22	Manufacturer's performance data HAPs from AP-42, Tables 1.4-3 and 4	PM 0.0048 lb/MMBtu SO ₂ 0.001 lb/MMBtu VOC 0.008 lb/MMBtu CO 0.037 lb/MMBtu NOx 0.011 lb/MMBtu Total HAP 1.888lb/MMscf See AP-42 for HAP speciation			5.01 MMBtu/hr 4930 scf/hr 8760 hr/yr																								

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
11	CO	10	Initial and every 5 yrs	BACT limit
	VOC	25 or 25A	Initial and every 5 yrs	
	H ₂ SO ₄	8	Initial and fuel sulfur records	
	PM/PM ₁₀ /PM _{2.5}	201A and 202	Initial and every 5 yrs	
	SO ₂	8	Initial and fuel sulfur records	Prove emission limit

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)
03	O ₂	O ₂ monitor	Continuous	Y
03	NO _x	CEM	Continuous	Y
03	SO ₂	Optional per subpart	Hourly	N
11	NO _x	CEM	Continuous	Y
11	O ₂	CEMS Diluent Monitor	Continuous	Y
11	Ammonia injection rate	CMS	Hourly	Y
11	Catalyst outlet temperature	Thermocouple	Continuous	N

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)
10	Hours of operation	2,160 hours	Monthly	N
11	Startup hours	160 hours	Monthly	Y
11	Shutdown	45 hours	Monthly	Y
11	Sulfur fuel records	1.0 gr S/scf max, 0.5 gr S/scf 12-month rolling average	Monthly	Y
11	Ammonia Injection rate	TBD, based on 10 ppm@ 15% O ₂	Hourly	Y
11	Catalyst Temperature	500-700°F	Continuous	N
11	NO _x ppm NO _x lb/hr	15@15%O ₂ 218.1 lb/hr	Continuous	Y
11	Firing Rate	10,659,168 MMBtu/rolling 12-month	Monthly	Y
12	Operating Hours, Emergency and Non- Emergency	500 hr/calendar yr	Monthly	Y
13	Operating Hours, Emergency and Non- Emergency	500 hr/calendar yr	Monthly	Y
17,18,19	Component count	Various	Monthly	Y

19. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
03	40%	Pre-regulatory facility	Daily
10	40%	Dept. Guidance	Annual observation
11	5%	8 CAR § 41-403 and 40 C.F.R. § 52 Subpart E	Initial observation
12	20%	8 CAR § 41-403 and 40 C.F.R. § 52 Subpart E	Annual observation
13	20%	8 CAR § 41-403 and 40 C.F.R. § 52 Subpart E	Annual observation
16	5%	8 CAR § 41-403 and 40 C.F.R. § 52 Subpart E	Use of Mist Eliminator
22	5%	8 CAR § 41-403 and 40 C.F.R. § 52 Subpart E	Use of Nat gas

20. DELETED CONDITIONS:

Former SC	Justification for removal
	None

21. GROUP A INSIGNIFICANT ACTIVITIES:

The following is a list of Insignificant Activities including revisions by this permit.

Lake Catherine Unit #4 Support Equipment (equipment to be used only while LC4 is in service)

Source Name	Group A Cat.	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
C8 – Kerosene Fired Steam Heater	A-1	0.032	1.38	0.0069	0.04	0.17		0.00047
Six (6) 170,000 Btu/hr Diesel-fired Heaters	A-1	0.11	0.0068	0.023	0.16	0.64		0.0015
Totals		0.137	0.00887	0.0297	0.208	0.813		0.00201
T23B – Unit 4 FD Fan LO Reservoir	A-2			1.02E-7				
T24A – Unit 4 BFW LO Reservoir	A-2			7.18E-8				
T24B – Unit 4 BFW LO Reservoir	A-2			7.18E-8				
T24C – Unit 4 BFW LO Reservoir	A-2			7.18E-8				
T24D – Unit 4 BFW LO Reservoir	A-2			7.18E-8				
T25 – Unit 4 BFP LO Reservoir	A-2			2.41E-8				
T27 – Used Oil Storage Tank	A-2			4.51E-7				
T35 – Used Kerosene Drum	A-2			8.04E-6				
T37 – Waste Oil/Solvent Storage	A-2			4.03E-7				
T46 – Oil/Water Separator (Oil Section)	A-2			4.08E-7				
Totals				9.72E-7				
T21 – Unit 4 LO Filter Tank	A-3			1.27E-6				
T22 – Unit 4 Seal Oil Tank	A-3			6.39E-7				
T23A – Unit 4 FD Fan LO Reservoir	A-3			1.66E-5				
T26 – Emergency Diesel Generator Tank	A-3			2.88E-4				
T36 – Oil Drum Storage	A-3			2.76E-7				
T44 – Diesel Tank	A-3			3.34E-4				
Totals				6.41E-4				
T19 – Unit 4 LO Batch Tanks (2 – 12,000 gal)	A-13			1.32E-5				
T20 – Unit 4 LO Reservoir (12,000 gal)	A-13			5.26E-6				
T45 – 300 gallon Gasoline Tank	A-13			1.55E-1				
X1 – Degreaser	A-13			1.63				

Source Name	Group A Cat.	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
X2 – Unit 3 Welding Area (1 machine)	A-13	0.337						0.2
X4 – Diesel Fuel Oil Dispensing Station	A-13			0.487				
X5 – Unleaded Gasoline Dispensing Station	A-13			0.243				
X6 – Unit 4 Bead Blaster	A-13	0.1						
X13 – Aerosol Lubricant Fugitives	A-13	0.04		0.04				
X14 – Aerosol Degreaser Fugitives	A-13	0.189		0.189				
X15 – Aerosol Insecticides	A-13	0.07		0.07				
X18 – Welding Shop (3 machines)	A-13							0.3
X19 – Aerosol Puncture Station	A-13			0.189				
A-13 Totals		0.736		3.0				0.5

At Permit #1717-AOP-R10, there are no Insignificant Activities from Category A permitted once the facility removes LC4 from service.

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 #
1717-AOP-R9

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Facility Name: Entergy Arkansas, LLC -- Lake Catherine
 Plant
 Permit Number: 1717-AOP-R10
 AFIN: 30-00011

\$/ton factor	28.14	Annual Chargeable Emissions (tpy)	<u>4452.61</u>
Permit Type	Modification	Permit Fee \$	<u>2727.0474</u>

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	<input type="checkbox"/>
If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$	0
Total Permit Fee Chargeable Emissions (tpy)	96.91
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		195.3	195.3	0	0	195.3
PM ₁₀		195.2	195.2	0		
PM _{2.5}		0	0	0		
SO ₂		18.7	18.7	0	0	18.7
VOC		141.7	141.7	0	0	141.7
CO		620.4	620.4	0		
NO _x		14881.8	14881.8	0	0	4000
Total HAPs	<input type="checkbox"/>	48.41	48.41	0		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
CO2e	<input type="checkbox"/>	0	687153	687153		
H2SO4	<input checked="" type="checkbox"/>	0	12.35	12.35	12.35	12.35
Ammonia	<input checked="" type="checkbox"/>	0	84.56	84.56	84.56	84.56