STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1819-AOP-R14 AFIN: 16-00412

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Jonesboro City Water and Light
1400 Hanley Drive
Jonesboro, Arkansas 72401

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
1/31/2025	Renewal	Corrections to previous calculations from double counting a HAP Rounding correction on lead hourly emissions on SN-01 and SN-02

6. REVIEWER'S NOTES:

Jonesboro City Water and Light (JCWL) owns and operates the Northwest Substation at 1400 Hanley Drive in Jonesboro, Arkansas. With this application, HAP emissions were lowered slightly for the turbines when operated while firing fuel oil. Lead hourly emissions were also updated due to rounding for SN-01 and SN-02. Yearly HAP emissions decreased by 0.13 tpy as a result of this renewal and modification to the permit.

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 August 1, 2024. No areas of concern were noted at time of inspection. The facility also has no significant violations reported on EPA's ECHO database.

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? N
- *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.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
SN-01, SN-02, SN-04, SN-06, and SN-07	SO_2 CO NO_x	NSPS, Subpart GG
SN-04, SN-06, and SN-07	SO_2 NO_x CO_2	40 CFR Parts 72, 73, and 75 (Acid Rain Provisions)
SN-08	HAPs	NESHAP Subpart ZZZZ
SN-01, SN-02, SN-04, SN-06, and SN-07	NO_x	40 CFR Part 64 (Compliance Assurance Monitoring)

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? Y

(Note - permit shields are not allowed to be added, but existing ones can remain, for minor modification applications or any Rule 18 requirement.)

If yes, are applicable requirements included and specifically identified in the permit? Y
If not, explain why.

For any requested inapplicable regulation in the permit shield, explain the reason why it is not applicable in the table below.

Source	Inapplicable Regulation	Reason
SN-01, SN-02, SN-04, SN-06, SN-07	40 C.F.R. § 63 Subpart YYYY	The facility is not a major source of HAP emissions, and therefore not subject to NESHAP YYYY
SN-01, SN-02, SN-04, SN-06, SN-07	40 C.F.R. § 63 Subpart ZZZZ	These sources are engines installed after the date they would be subject to NESHAP ZZZZ and are subject to NSPS IIII
SN-01, SN-02, SN-04, SN-06, SN-07	40 C.F.R. § 60 Subpart KKKK	These sources were constructed prior to February 18, 2005, and therefore not subject to NESHAP KKKK
Facility	40 C.F.R. 52.21	This facility has not exceeded levels requiring PSD analysis.
SN-03	40 C.F.R. § 60 Subpart Kb	The tank stores a liquid with a true maximum vapor pressure of less than 3.5 kPa.
SN-01, SN-02, SN-04, SN-06, SN-07	40 C.F.R. § 60 Subpart JJJJ	These sources are not spark ignition engines and therefore not subject to NSPS JJJJ

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
SN-01, SN-02, SN-04, SN-06, SN-07	NO_X	Daily monitoring of water to fuel ratio

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:

As there are only slight reductions to Non-Criteria Pollutants as a result of this permit modification, the results from the previous permit revision stand aside from benzene. The TLV of benzene was lowered significantly and was reviewed in permit revision 14.

The non-criteria pollutants listed below were evaluated. Based on Division of Environmental Quality procedures for review of non-criteria pollutants, emissions of all other non-criteria pollutants are below thresholds of concern.

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/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?
Acenaphthene	0.2	0.022	2.2E-05	Yes
Acrolein	0.229	0.025	0.012	Yes
Anthracene	0.2	0.022	5.78E-06	Yes
Arsenic	0.010	0.001	0.015	No
Benzene	0.0639	0.007027	0.0977	No
Benzo(a)anthracene	0.2	0.022	2.92E-06	Yes

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Benzo(a)pyrene	0.2	0.022	1.21E-06	Yes
Benzo(b)fluoranthene	0.2	0.022	5.21E-06	Yes
Benzo(g,h,i)perylene	0.2	0.022	2.61E-06	Yes
Benzo(k)fluoroanthene	0.2	0.022	1.02E-06	Yes
Beryllium	0.00005	0.000006	0.0004	No
Cadmium	0.002	0.022	0.0064	No
Chromium	0.005	0.00055	0.015	No
Chrysene	0.2	0.022	7.19E-06	Yes
Fluoranthene	0.2	0.022	1.89E-05	Yes
Fluorene	0.2	0.022	6.01E-05	Yes
Indeno(1,2,3,c,d)pyrene	0.2	0.022	1.94E-06	Yes
Manganese	0.2	0.022	1.055	No
Mercury	0.01	0.001	0.002	No
Phenanthrene	0.2	0.022	1.92E-04	Yes
POM/PAH	0.2	0.022	0.0548	No
Pyrene	0.2	0.022	1.74E-5	Yes
Selenium	0.2	0.022	0.033	No

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 ($\mu g/m^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu g/m^3$)	Pass?
Arsenic	0.1	0.00156	Y
Benzene	0.639	0.00455	Y
Beryllium	0.0005	0.00002	Y

Pollutant	PAIL ($\mu g/m^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu g/m^3$)	Pass?
Cadmium	0.1	0.00061	Y
Chromium	0.05	0.00156	Y
Mercury	0.1	0.00012	Y
Manganese	1	0.11172	Y
PAH/POM	2	0.00575	Y
Selenium	2	0.00354	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 H_2S emissions

15. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
SN-01 SN-02 (oil)	Testing	PM_{10} – 10 VOC – 10 CO – 25 NO_x - 41	Water injection	Varies	Emission factors are controlled in units of lb/hr
SN-01 SN-02 (oil)	Maximum sulfur content	SO_2 – 38	None	N/A	Emission factors are controlled in units of lb/hr
SN-01 SN-02 (gas)	Testing	PM_{10} – 8 SO_2 – 8 VOC – 10 CO – 25 NO_x – 38.9	Water injection	Varies	Emission factors are controlled in units of lb/hr
SN-04 SN-06 SN-07 (gas)	Testing	PM_{10} – 16 SO_2 – 15 VOC – 20 CO – 25 NO_x – 56	Water injection	Varies	Emission factors are controlled in units of lb/hr

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
SN-04 SN-06 (oil)	Testing	PM_{10} – 20 VOC – 20 CO – 25 NO_x – 81	Water injection	Varies	Emission factors are controlled in units of lb/hr
SN-04 SN-06 (oil)	Maximum sulfur content	SO_2 – 75	None	N/A	Emission factors are controlled in units of lb/hr
SN-03	Tanks 4.0	_	None	N/A	Emission rate based on 1,128,000 gallons throughput
SN-01 SN-02 SN-04 SN-06 SN-07 (gas)	AP-42	All factors in lb/MMBtu	Water injection	-	Emission Factors controlled Table 3.1-3 Acetaldehyde – 4.0E-05 Acrolein – 6.4E-06 Benzene – 1.2E-05 1,3-Butadiene – 4.3E-07 Ethyl Benzene – 3.2E-05 Formaldehyde – 7.1E-04 Naphthalene – 1.3E-06 PAH– 2.2E-06 Propylene Oxide – 2.9E-05 Toluene – 1.3E-04 Xylenes – 6.4E-05
SN-01 SN-02 SN-04 SN-06 (oil)	AP-42	All factors in lb/MMBtu	Water injection	-	Emission Factors controlled Table 3.1-4 and 3.1-5 Benzene – 5.5E-05 1,3-Butadiene – 1.6E-05

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
					Formaldehyde – 2.8E-04 Naphthalene – 3.5E-05 PAH – 4.0E-05 Arsenic – 1.1E-05 Beryllium – 3.1E-07 Cadmium – 4.8E-06 Chromium – 1.1E-05 Lead – 1.4E-05 Manganese – 7.9E-04 Mercury – 1.2E-06 Nickel – 4.6E-06 Selenium – 2.5E-05
08	AP-42 Table 3.4-1 for criteria pollutants; AP-42 Table 3.4-3, 3.4-4, 3.3-2 for HAPs	(lb/MMBtu) PM/PM_{10}—0.1 CO—0.85 NO_x—3.20 SO_x—0.05 VOC—0.09 Acrolein—7.88E-06 Benzene—3.07E-03 1,3-Butadiene—3.91E-05 Formaldehyde—7.89E-05 PAH—2.12E-04 Toluene—2.81E-04	None	N/A	759 hp; Limited to 500 hrs/yr. 7000 Btu/hp-hr

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
01, 02, 04, 06, 07	SO_2 NO_x CO	20 20 10	Every 5 years (initial testing completed)	Department Standard; one unit of each type with each type of fuel

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)
The permittee is avoiding the requirement of installing a CEMS included in the Acid Rain Provisions by taking emission limits which allow SN-04, SN-06, and SN-07 to be classified as "Low Mass Emitters." And following the methodology in 40 CFR 75 § 75.19(c). A PEMS which monitors water injection rates is also to be used.				
01, 02, 04, 06, & 07	Water to Fuel Ratio & Gaseous and Oil Fuel Bound Nitrogen	A continuous monitoring system shall monitor and record the fuel consumption and the ratio of water or steam to fuel being fired in the turbine is to be used in lieu of a CEMS, as specified by NSPS GG and Specific Condition # 18.		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)
01 02 04 06	Weight percent sulfur - diesel	0.05 %	Each shipment	N
01 02 04 06	Fuel Bound Nitrogen	<F, Fuel Bound Nitrogen from Specific Condition # 14	Each Shipment (Only required if permittee elects to take an emission	N

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
			allowance for Fuel Bound Nitrogen, i.e., an F-value other than zero)	
01 02 04 06 07	Water injected to fuel fired ratio necessary for compliance versus actual ratio	-	Daily	Only when deficient
01 02 04 06 07	Fuel consumption of each fuel for each turbine, and completion of the tpy pollutants per Specific Condition No. 3	Tpy limits in the permit	Monthly	Y
04 06 07	Annual emissions of NO_x and SO_2	100 tons of NO_x 25 tons of SO_2	Monthly	Y
04 06 07	Ozone season emissions of NO_x	50 tons	Monthly	Y
08	Hours of Operations	500 per rolling twelve months	Monthly	N
08	Maintenance Performed	N/A	As performed	N

19. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01, 02, 04, 06, & 07 (natural gas)	5%	[Rule No. 18 §18.501 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]	Fuel used
01 or 02 and 04 or 06 (fuel oil)	20%	[Rule No. 19 §19.503 and 40 CFR 52, Subpart E]	Once per year observation per pair

SN	Opacity	Justification for limit	Compliance Mechanism
08	20%	[Rule 19 §19.503 and 40 CFR Part 52, Subpart E]	Inspector Observation

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
Diesel Storage Tank, 425 gal	A-3			6.5E-05				
NaOH Tank, 7,000 gal	A-4							
Sulfuric Acid Tank, 7,000 gal	A-13						0.01	0.01
Waste Acid Tank, 55 gal	A-13							
Two Cooling Towers	A-13	0.30						

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 #
1819-AOP-R13

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Jonesboro City Water and Light
Permit #: 1819-AOP-R14
AFIN: 16-00412

$/ton factor	28.14	Annual Chargeable Emissions (tpy)	670.3
Permit Type	Renewal No Changes	Permit Fee $	0

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
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		91.3	91.3	0		
PM_{10}		91.3	91.3	0	0	91.3
$PM_{2.5}$		0	0	0		
SO_2		221.6	221.6	0	0	221.6
VOC		114.1	114.1	0	0	114.1
CO		154.8	154.8	0		
NO_X		243.3	243.3	0	0	243.3
Lead	☐	0.09	0.09	0		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Total HAPs	☐	13.72	13.59	-0.13		