STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1185-AOP-R10 AFIN: 24-00071

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Black Hills Energy Arkansas, Inc. - Drake Compressor Station
2204 Westview Road
Ozark, Arkansas 72949

3. PERMIT WRITER:

Derrick Brown

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Pipeline Transportation of Natural Gas
NAICS Code: 486210

5. ALL SUBMITTALS:

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
12/19/2018	Minor Modification	Replacement of SN-18 emergency engine.

6. REVIEWER'S NOTES:

Black Hills Energy Arkansas, Inc. - Drake Compressor Station owns and operates a natural gas compressor station located near Ozark, Arkansas. This permit modification replaces SN-18 General Motors 305 (92 Hp) Emergency Generator with a Generac 82 Hp SG035 Emergency Generator. Also, this permit removes the facility's designation as a 40 C.F.R. § 63 Subpart HH facility. This has been determined because this facility is not a production facility nor is it a major source of Hazardous Air Pollutants. Finally the facility has submitted documentation showing the point of custody is upstream from the facility. This modification increases VOC emissions by 0.1 tpy decreases CO emissions by 0.5 tpy.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

This facility was last inspected on May 10, 2016 and was found to be in compliance.

8. PSD 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/A

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. The emissions from the replacement emergency engine is below the significant increase for PSD applicability for all PSD pollutants.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
SN-15, SN-18, SN-19, SN-87, SN-88, SN-89, and SN-90	HAP	NESHAP ZZZZ
SN-18	NO_x, CO	NSPS JJJJ

10. 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 Regulation 18 requirement.)

11. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

12. AMBIENT AIR EVALUATIONS:

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 ADEQ Air Permit Screening Modeling Instructions.

b) Non-Criteria Pollutants:

The non-criteria pollutants listed below have TLV's below 1 mg/m^3. There were no HAPs permitted at 10.0 tons per year or more.

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?
Acrolein	0.229	0.02519	0.35	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 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	2.29	1.81	Y

c) H_2S Modeling: N/A

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 N/A
If exempt, explain:_____

Pollutant	Threshold value	Modeled Concentration (ppb)	Pass?
H_2S	20 parts per million (5-minute average*)	N/A	N/A
	80 parts per billion (8-hour average) residential area	N/A	N/A
	100 parts per billion (8-hour average) nonresidential area	N/A	N/A

*To determine the 5-minute average use the following equation

$Cp = Cm\ (t_m/t_p)^{0.2}$ where

Cp = 5-minute average concentration
Cm = 1-hour average concentration
t_m = 60 minutes
t_p = 5 minutes

13. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
09 through 12	AP-42	PM/PM_{10}: 6.6E-3 lb/MMBtu SO_2: 1.5 E-3 lb/MMBtu Acetaldehyde: 4.0E-5 lb/MMBtu Acrolein: 6.4E-6 lb/MMBtu 1,3-butadiene: 4.3E-7 lb/MMBtu Formaldehyde: 5.1E-3 lb/MMBtu POM: 3.5E-6 lb/MMBtu	None	N/A	
	Manufacturer's Specifications with safety	VOC: 1.1 g/hp-hr CO: 2.23 g/hp-hr NO_X: 1.49 g/hp-hr			

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	factors				
15 and 87	AP-42	PM/PM_{10}: 9.9871E-3 lb/MMBtu SO_2: 1.5E-3 lb/MMBtu Acetaldehyde: 8.36E-3 lb/MMBtu Acrolein: 5.14E-3 lb/MMBtu 1,3-butadiene: 2.67E-4 lb/MMBtu Formaldehyde: 5.28E-2 lb/MMBtu POM: 1.61508E-4 lb/MMBtu	Oxidation Catalyst	93%	Control efficiency not used in emission calculations. Annual emissions based on 7,500 hr/yr each.
	Manufacturer's Specifications with safety factors	VOC: 1.0 g/hp-hr CO: 2.5 g/hp-hr NO_X: 2.0 g/hp-hr			
18	AP-42	PM/PM_{10}: 1.941E-2 lb/MMBtu SO_2: 5.88E-4 lb/MMBtu Acetaldehyde: 2.79E-3 lb/MMBtu Acrolein: 2.63E-3 lb/MMBtu 1,3-butadiene: 6.63E-4 lb/MMBtu Formaldehyde: 2.05E-2 lb/MMBtu	None	N/A	Annual emissions based on 100 hr/yr.
	Manufacturer's Specifications with safety factors	VOC: 1.6 g/hp-hr CO: 95.32 g/hp-hr NO_X: 2.52 g/hp-hr			
19 and 89	AP-42	PM/PM_{10}: 9.9871E-3 lb/MMBtu SO_2: 5.88E-4 lb/MMBtu Acetaldehyde: 8.36E-3 lb/MMBtu Acrolein: 5.14E-3 lb/MMBtu 1,3-butadiene: 2.67E-4 lb/MMBtu Formaldehyde: 5.28E-2 lb/MMBtu POM: 1.61508E-4 lb/MMBtu	Oxidation Catalyst	93%	Control efficiency not used in emission calculations.
	Manufacturer's Specifications with safety factors	VOC: 1.3 g/hp-hr CO: 3.5 g/hp-hr NO_X: 1.95 g/hp-hr			
88	AP-42	PM/PM_{10}: 9.9871E-3 lb/MMBtu SO_2: 5.88E-4 lb/MMBtu Acetaldehyde: 8.36E-3 lb/MMBtu Acrolein: 5.14E-3 lb/MMBtu 1,3-butadiene: 2.67E-4 lb/MMBtu	Oxidation Catalyst	93%	Control efficiency not used in emission calculations.

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		Formaldehyde: 5.28E-2 lb/MMBtu POM: 1.61508E-4 lb/MMBtu			
	Manufacturer's Specifications with safety factors	VOC: 1.2 g/hp-hr CO: 3.18 g/hp-hr NO_X: 1.8 g/hp-hr			
90	AP-42	PM/PM_{10}: 1.941E-2 lb/MMBtu SO_2: 5.88E-4 lb/MMBtu Acetaldehyde: 2.79E-3 lb/MMBtu Acrolein: 2.63E-3 lb/MMBtu 1,3-butadiene: 6.63E-4 lb/MMBtu Formaldehyde: 2.05E-2 lb/MMBtu POM: 2.381E-4 lb/MMBtu	None	N/A	
	Manufacturer's Specifications with safety factors	VOC: 2.75 g/hp-hr CO: 49.5 g/hp-hr NO_X: 12.1 g/hp-hr			
91 and 92	AP-42	PM/PM_{10}: 7.6 lb/MMCF SO_2: 0.6 lb/MMCF VOC: 5.5 lb/MMCF CO: 84 lb/MMCF NO_X: 100 lb/MMCF Formaldehyde: 7.5E-2 lb/MMCF POM: 6.982E-4 lb/MMCF	None	N/A	
	GlyCalc 4.0	N/A			
13A and 14A	AP-42 Table 3.2-3	PM/PM_{10}: 0.01941 lb/MMBtu SO_2: 0.000588 lb/MMBtu VOC: 0.7 g/hp-hr CO: 1.0 g/hp-hr NO_x: 1.0 g/hp-hr Acetaldehyde: 2.79E-3 lb/MMBtu Acrolein: 2.63E-3 lb/MMBtu 1,3-Butadiene: 6.63E-4 lb/MMBtu Formaldehyde: 0.05 g/hp-hr	NSCR Catalyst		

14. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
SN-09 through SN-15, SN-19, SN-87 through SN-90 (one of each model engine)	CO	10	Every 60 months	Demonstrate compliance with the CO limits.
SN-09 through SN-15, SN-19, SN-87 through SN-90 (one of each model engine)	NO_X	7E	Every 60 months	Demonstrate compliance with the NO_X limits.
SN-09 through SN-12	Formaldehyde	EPA Reference Method 320 or 323 of 40 C.F.R. § 63, Appendix A; or ASTM D6348-03, provided in ASTM D6348-03 Annex A5 (Analyte Spiking Technique)	One-time	Demonstrate compliance with the Formaldehyde limits
SN-18	NO_x, CO	As specified.	One-time	Subpart JJJJ

15. 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)
N/A				

16. 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)
SN-15 and SN-87	Hours of Operation	15,000 hours per 12-months	Monthly	Y
SN-18	Hours of Operation	100 hours per 12-months; also must comply with 63, Subpart ZZZZ hour limits and document how many hours are for emergency operation and how many hours for non-emergency operation	Monthly	Y
Engines and Turbines	Fuel Used	Pipeline Quality Natural Gas Only	Continuously	N
SN-15, SN-19, SN-13A, SN-14A, SN-87, SN-88, and SN-89	Remote Engine Evaluation	See Definition of Remote Stationary RICE in 63, Subpart ZZZZ	Annually	N
Engines	Oil Analysis Records [§63.6625(j)]	See §63.6625(j)	Same frequency as specified for changing the oil	N
Engines	Records described in §63.6655(a)(1) through (a)(5), (b)(1) through (b)(3) and (c)	N/A	As Needed	Maybe
Engines	Records of Maintenance Conducted	Per Maintenance Plan and Table 2d of 40 CFR Part 63, Subpart ZZZZ	As Needed	Y, when did not meet limitation

17. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
09 through 15, 18, 19, 87 through 92	5%	Department Guidance	Natural Gas Fuel Only

18. DELETED CONDITIONS:

Former SC	Justification for removal
N/A	

19. GROUP A INSIGNIFICANT ACTIVITIES:

Source Name	Group A Category	Emissions (tpy)						
		PM/PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							Single	Total
Four 550 Gallon Lube Oil Storage Tanks	A-3			0.000066			0.000066	0.000066
Non-Point Source Fugitive Emissions	A-13			0.11				
Blowdowns	A-13			0.18				
Parts Washer	A-13			0.64				
A-13 Totals				0.93				

20. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

List all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
1185-AOP-R8

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Facility Name: Black Hills Energy Arkansas, Inc - Drake
Permit Number: 1185-AOP-R10
AFIN: 24-00071

$/ton factor	23.93	Annual Chargeable Emissions (tpy)	337.1
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)	0.7
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		5.3	5.3	0		
PM_{10}		5.3	5.3	0	0	5.3
$PM_{2.5}$		0	0	0		
SO_2		1.5	1.9	0.4	0.4	1.9
VOC		128.4	128.3	-0.1	-0.1	128.3
CO		315.9	316.3	0.4		
NO_X		201.2	201.6	0.4	0.4	201.6
Acetaldehyde	☐	1.78	1.78	0		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Acrolein	☐	1.21	1.2	-0.01		
1,3 Butadiene	☐	0.18	0.18	0		
Formaldehyde	☐	7.61	7.55	-0.06		
	☐	0	0	0		
	☐	0	0	0		
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