

## STATEMENT OF BASIS

For the issuance of Air Permit # 1244-AOP-R4 AFIN: 43-00093

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

CenterPoint Energy – Mississippi River Transmission, LLC (Carlisle Compressor Station)  
Hillman Road, Route 1  
Carlisle, Arkansas 72024

3. PERMIT WRITER:

Ambrosia Brown

4. PROCESS DESCRIPTION AND NAICS CODE:

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

5. SUBMITTALS:

7/19/2012, 8/7/2012, 9/6/2012

6. REVIEWER'S NOTES:

Compressor Station is a natural gas compressor station located about 10 miles south of Carlisle on Hillman Road, Route 1, in Lonoke County, Arkansas. This permit is being issued in order to reduce the operating hours of the compressor engines (SN-01 through SN-08) to 5500 hours per year and reduce the operating hours of the generator (SN-10) to 500 hours per year. The reduction of emissions associated with this change are 1.6 tpy PM/PM<sub>10</sub>, 5.9 tpy VOC, 734.3 tpy CO, 609.3 tpy NO<sub>x</sub>, and 3.25 tpy total HAPs (previous catalytic converter installation in R2/R3 was voided).

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues. There are no current CAO or compliance issues for this facility

8. PSD 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? Y

- Single pollutant  $\geq 100$  tpy and on the list of 28 or single pollutant  $\geq 250$  tpy and not on list, or
- CO<sub>2</sub>e potential to emit  $\geq 100,000$  tpy and  $\geq 100$  tpy/ $\geq 250$  tpy of combined GHGs?

If yes, explain why this permit modification is not PSD.

*There were only reductions in emissions*

9. GHG MAJOR SOURCE (TITLE V):

*The facility has stated that it is not major for GHGs.*

Indicate one:

- Facility is classified as a major source for GHG and the permit includes this designation
- Facility does not have the physical potential to be a major GHG source
- Facility has restrictions on GHG or throughput rates that limit facility to a minor GHG source. Describe these restrictions: \_\_\_\_\_

10. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
No Source/Pollutant Specific Regulations		

11. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

12. MODELING:

*The current modification does not increase hourly emissions. The previous renewal used emission rates for NO<sub>x</sub> and CO which included a catalytic converter which was not installed. Therefore NO<sub>x</sub> and CO concentrations were modeled for this modification and updated in the following modeling from the previous renewal.*

Criteria Pollutants

The screening models by ADEQ used 5 yrs of MET data from Little Rock, AR (2003 to 2007). The background pollutant levels were added for determining the PM concentrations.

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ( $\mu\text{g}/\text{m}^3$ )	Averaging Time	Highest Concentration ( $\mu\text{g}/\text{m}^3$ )	% of NAAQS
PM <sub>10</sub>	1.7	50	Annual	23.31*	47%
		150	24-Hour	45.62*	31%
CO	436.1	10,000	8-Hour	2602.70	26%
		40,000	1-Hour	3483.57	9%
NO <sub>x</sub>	344.7	100	Annual	85.58	86%

\* PM<sub>10</sub> highest concentrations include background of 23  $\mu\text{g}/\text{m}^3$  (annual) and 43  $\mu\text{g}/\text{m}^3$  (24-hour)

Non-Criteria Pollutants:

1<sup>st</sup> 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 ( $\text{mg}/\text{m}^3$ ), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV ( $\text{mg}/\text{m}^3$ )	PAER (lb/hr) = $0.11 \times \text{TLV}$	Proposed lb/hr	Pass?
Formaldehyde	0.37	0.0407	1.365	No
Methanol	262.09	28.8299	0.247	Yes
Acetaldehyde	45.04	4.9544	0.247	Yes
Benzene	1.6	0.176	0.164	Yes
Toluene	75.36	8.2896	0.082	Yes
Acrolein	0.23	0.0253	0.226	No

2<sup>nd</sup> 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 ( $\mu\text{g}/\text{m}^3$ ) = 1/100 of Threshold Limit Value	Modeled Concentration ( $\mu\text{g}/\text{m}^3$ )	Pass?
Formaldehyde	3.7	3.57	Yes
Acrolein	2.3	0.905	Yes

12. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01 to 08	CO and NO <sub>x</sub> : Stack Testing VOC, PM, PM <sub>10</sub> , SO <sub>2</sub> : AP-42 Table 3.2-3 HAPs: GRI-HAPCalc	CO: 3.8205 lb/MMbtu NO <sub>x</sub> : 2.9158 lb/MMbtu  VOC: 0.0296 lb/MMbtu PM <sub>10</sub> : 0.0095 lb/MMbtu SO <sub>2</sub> : 0.000588 lb/MMbtu PM: 0.00991 lb/MMbtu Formaldehyde: 0.0677 gm/hp-hr Methanol: 0.0101 gm/hp-hr Acetaldehyde: 0.0092 gm/hp-hr Benzene: 0.0052 gm/hp-hr Toluene: 0.0018 gm/hp-hr Acrolein: 0.0087 gm/hp-hr	None	N/A	SN01-SN06: 1000 hp  SN07-SN08: 1100 hp  13.93 MMBtu/hr  5500 hr/yr  20% safety factor
10	NO <sub>x</sub> : AGA Emission Factors CO, VOC, PM, PM <sub>10</sub> SO <sub>2</sub> : AP-42 Table 3.2-3 HAPs: GRI-HAPCalc	NO <sub>x</sub> : 7.2715 lb/MMbtu CO: 3.72 lb/MMbtu VOC: 0.0296 lb/MMbtu PM <sub>10</sub> : 0.0095 lb/MMbtu PM: 0.00991 lb/MMbut SO <sub>2</sub> : 0.000588 lb/MMbtu AP-42 Table 3.2-3  HAPs: GRI-HAPCalc	none	N/A	2.65 MMBtu/hr  500 hr/yr  300 hp

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13. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
SN01-SN08 Stack Testing	CO NO <sub>x</sub>	Method 10 and 7E	One-half of eight compressor engines every 5 years	See Plantwide Condition # 10 in permit.

14. 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)
None				

15. 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-01-SN08	Hours of operation	5500 hr/12 mo	Continuous as used	N
SN-10	Hours of operation	500/12 mo	Each use	N

16. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01, 02, 03, 04, 05, 06, 07, 08 09 and 10	5%	§18.501	Plantwide Condition #6 (Natural Gas Fuel)

17. DELETED CONDITIONS: None

18. GROUP A INSIGNIFICANT ACTIVITIES

Source Name	Group A Category	Emissions (tpy)						
		PM/PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs	
							Single	Total
2,500 gallons used oil storage tank	A-3	0	0	0.00146	0	0	0.00146	0.00146
Two (2) 4,200 gallons entrained liquid storage tanks	A-3	0	0	0.054	0	0	0.054	0.054
5,000 gallons lube oil storage tank	A-3	0	0	0.0028	0	0	0.0028	0.0028
8,820 gallons antifreeze storage tank	A-3	0	0	0.0001	0	0	0.0001	0.0001
4,200 gallons antifreeze storage tank	A-3	0	0	0.0001	0	0	0.0001	0.0001
1,500 gallons waste water storage tank	A-3	0	0	0.0010	0	0	0.0010	0.0010
Two (2) 100 gallons kerosene storage tanks	A-2	0	0	0.0001	0	0	0.0001	0.0001
100 gallons diesel storage tank	A-2	0	0	0.0002	0	0	0.0002	0.0002
Compressors blowdowns	A-13	0	0	0.10	0	0	0.10	0.10
Fugitive emissions	A-13	0	0	0.016	0	0	0	0


20. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

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

Permit #
1244-AOP-R3

21. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.

  
 \_\_\_\_\_  
 Paula Parker, P.E.

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

## Fee Calculation for Major Source

Revised 08-20-12

Facility Name: Carlisle Compressor Station  
 Permit Number: 1244-AOP-R4  
 AFIN: 43-000093

\$/ton factor	22.97	Annual Chargeable Emissions (tpy)	912.4
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	<input type="checkbox"/>
If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$	0
Total Permit Fee Chargeable Emissions (tpy)	664
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	<input checked="" type="checkbox"/>	5	3.3	-1.7	-1.7	3.3
PM <sub>10</sub>	<input type="checkbox"/>	5	3.3	-1.7		
SO <sub>2</sub>	<input checked="" type="checkbox"/>	0.9	0.9	0	0	0.9
VOC	<input checked="" type="checkbox"/>	15.6	9.7	-5.9	-5.9	9.7
CO	<input type="checkbox"/>	230.4	1173.7	943.3		
NO <sub>x</sub>	<input checked="" type="checkbox"/>	226.9	898.5	671.6	671.6	898.5
Acetaldehyde*	<input type="checkbox"/>	0.83	0.55	-0.28		
Formaldehyde*	<input type="checkbox"/>	1.56	3.56	2		
Acrolein*	<input type="checkbox"/>	0.81	0.49	-0.32		
Methanol*	<input type="checkbox"/>	0.89	0.57	-0.32		
Benzene*	<input type="checkbox"/>	0.5	0.33	-0.17		
Toluene*	<input type="checkbox"/>	0.17	0.17	0		