ADEQ

A R K A N S A S
Department of Environmental Quality

October 1, 2010

Lacey Ivey, Environmental Specialist
CenterPoint Energy - Mississippi River Transmission Corp. Carlisle Compressor Station
P.O. Box 21734
Shreveport, LA 71151

Dear Ms. Ivey:

The enclosed Permit No. 1244-AOP-R2 is your authority to construct, operate, and maintain the equipment and/or control apparatus as set forth in your application initially received on 11/18/2009.

After considering the facts and requirements of A.C.A. §8-4-101 et seq., and implementing regulations, I have determined that Permit No. 1244-AOP-R2 for the construction, operation and maintenance of an air pollution control system for CenterPoint Energy - Mississippi River Transmission Corp. Carlisle Compressor Station to be issued and effective on the date specified in the permit, unless a Commission review has been properly requested under Arkansas Department of Pollution Control & Ecology Commission's Administrative Procedures, Regulation 8, within thirty (30) days after service of this decision.

The applicant or permittee and any other person submitting public comments on the record may request an adjudicatory hearing and Commission review of the final permitting decisions as provided under Chapter Six of Regulation No. 8, Administrative Procedures, Arkansas Pollution Control and Ecology Commission. Such a request shall be in the form and manner required by Regulation 8.603, including filing a written Request for Hearing with the APC&E Commission Secretary at 101 E. Capitol Ave., Suite 205, Little Rock, Arkansas 72201. If you have any questions about filing the request, please call the Commission at 501-682-7890.

Sincerely,

Mike Bates
Chief, Air Division

RESPONSE TO COMMENTS

CenterPoint Energy – Mississippi River Transmission Corp. Carlisle Compressor Station
PERMIT #1244-AOP-R2
AFIN: 43-00093

On June 17th 2010 and June 30th 2010, the Director of the Arkansas Department of Environmental Quality gave notice of a draft permitting decision for the above referenced facility. During the comment period, written comments on the draft permitting decision were submitted on behalf of the facility (Comment #1 through #6). A comment was also made by Department staff (Comment #7). The Department's response to these comments are as follows.

Note: The following page numbers and condition numbers refer to the draft permit. These references may have changed in the final permit based on changes made during the comment period.

Comment #1: The AFRC (Air/Fuel Ratio Controller) is used to control emissions to meet the NAAQS; however, AFRC are operational controls only and CEGT asks that the AFRC be removed as part of the emission control technology.

> **Response to Comment #1:** A description of the AFRC was included in the introduction of the Compliance Assurance Monitoring section of the draft permit (Proceeding Specific Condition #4). This description is not necessary for compliance and was not contained in an enforceable condition. The air/fuel ratio controller will be removed from the emission control technology equipment description of the final permit. The submitted Compliance Assurance Monitoring Plan which contains a description of the AFRC will be attached to the final permit.

Comment #2: A specific condition requires that CEGT comply with CAM and CEGT has submitted a CAM plan. CEGT is therefore requesting that additional requirements that are being added that relate to CAM and, in some cases, are more stringent be removed from this permit.

> **Response to Comment #2:** The conditions that were causing concern were primarily related to maintenance and testing of the SNCR related equipment. These practices were submitted in the CAM Plan and shall be used demonstrate compliance. These conditions shall not be removed from the final permit.

Comment #3: (SC#10) The recorded pressure drop should state that it will not deviate by more than 2 inches of water from the baseline.

> **Response to Comment #3:** Specific Condition #10 will have the language will be changed in include the word "baseline" in addition to the "initial" in order to describe the reading. This does not change the intended meaning of the original statement.

Comment #4: (SC#11)What is the basis for having to test the pressure gauge and the over temperature system annually. This is not a typical requirement and CEGT asks that these two not require annual testing.

> **Response to Comment #4:** (SC#11) The pressure gauge is required to be calibrated. For the final permit, the testing language will be removed.

Comment #5: AFRC is considered an operational control, not an emission control and as such should not be required for annual testing as this is a more stringent requirement.

> **Response to Comment #5:** The AFRC was included in the inspection and preventive maintenance plan and the MONITORING APPROACH JUSTIFICATION submitted in the CAM plan. The AFRC maintenance requirements will remain in the Final Permit.

Comment #6: (SC#14)ADEQ does not allow for portable testing for emissions since CEGT has no portable (equipment). CEGT has its own O&M schedule and that will be followed so CEGT requests that the inspection language added here be removed.

> **Response to Comment #6:** (SC#14) The original condition was based on testing described under the section II of the *MONITORING APPROACH JUSTIFICATION* in the submitted CAM Plan.
>
> After a review of the Draft by ADEQ, it was determined that all engines should be tested initially and every five years (instead of ½ of them). Compliance with emission limits shall be demonstrated using this testing. Therefore, portable testing will not be necessary so it will be removed from the final permit.

Comment #7: (PC#10) The condition requiring one half of the engines (SN-01 through SN-08) to be tested initially and every five years is not sufficient for demonstrating compliance.

> **Response to Comment #7:** (PC#10) The original condition would have allowed ten years between tests for the compressor engines. The emission limits and controls required on these engines were neccessary in order to avoid exceeding National Ambient Air Quality Standards. It is important to demonstrate compliance for these sources. Therefore, the final condition will require all engines to be tested initially and every five years.

ADEQ
OPERATING
AIR PERMIT

Pursuant to the Regulations of the Arkansas Operating Air Permit Program, Regulation 26:

Permit No. : 1244-AOP-R2

IS ISSUED TO:

CenterPoint Energy - Mississippi River Transmission Corp. Carlisle
Compressor Station
Hillman Road, Route 1
Carlisle, AR 72024
Lonoke County
AFIN: 43-00093

THIS PERMIT AUTHORIZES THE ABOVE REFERENCED PERMITTEE TO INSTALL, OPERATE, AND MAINTAIN THE EQUIPMENT AND EMISSION UNITS DESCRIBED IN THE PERMIT APPLICATION AND ON THE FOLLOWING PAGES. THIS PERMIT IS VALID BETWEEN:

October 1, 2010 AND September 30, 2015

THE PERMITTEE IS SUBJECT TO ALL LIMITS AND CONDITIONS CONTAINED HEREIN.

Signed:

Mike Bates
Chief, Air Division

October 1, 2010
Date

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List of Acronyms and Abbreviations

A.C.A.	Arkansas Code Annotated
AFIN	ADEQ Facility Identification Number
CFR	Code of Federal Regulations
CO	Carbon Monoxide
HAP	Hazardous Air Pollutant
lb/hr	Pound Per Hour
MVAC	Motor Vehicle Air Conditioner
No.	Number
NO_x	Nitrogen Oxide
PM	Particulate Matter
PM_{10}	Particulate Matter Smaller Than Ten Microns
SNAP	Significant New Alternatives Program (SNAP)
SO_2	Sulfur Dioxide
SSM	Startup, Shutdown, and Malfunction Plan
Tpy	Tons Per Year
UTM	Universal Transverse Mercator
VOC	Volatile Organic Compound

SECTION I: FACILITY INFORMATION

PERMITTEE:	CenterPoint Energy - Mississippi River Transmission Corp. Carlisle Compressor Station
AFIN:	43-00093
PERMIT NUMBER:	1244-AOP-R2
FACILITY ADDRESS:	Hillman Road, Route 1 Carlisle, AR 72024
MAILING ADDRESS:	P.O. Box 21734 Shreveport, LA 71151
COUNTY:	Lonoke County
CONTACT NAME:	Lacey Ivey
CONTACT POSITION:	Environmental Specialist
TELEPHONE NUMBER:	318-429-3297
REVIEWING ENGINEER:	Ambrosia Brown
UTM North South (Y):	Zone 15: 3837442.71 m
UTM East West (X):	Zone 15: 610182.60 m

SECTION II: INTRODUCTION

Summary of Permit Activity

CenterPoint Energy - Mississippi River Transmission Corporation, Carlisle Compressor Station operates a natural gas compressor station. The compressor station is located about 10 miles south of Carlisle on Hillman Road, Route 1, in Lonoke County, Arkansas. This permit is being issued for a Title V renewal and includes the addition of emission control equipment. A catalytic converter shall be installed to control emissions from each Ingersoll-Rand Natural Gas Compressor Engine. The resulting permitted emissions are decreased by 1677.6 tpy CO and 1280.9 tpy NO_X.

Process Description

Low pressure pipeline gas is pulled off line into the compressor station, and is then repressurized with reciprocating engine powered compressors and placed back into the transmission system.

The Carlisle Compressor Station currently consists of eight (8) Ingersoll-Rand KVG compressor engines (SN-01 through SN-08), and one (1) Caterpillar G-379 standby generator engine (SN-10). A catalytic converter shall be installed to control emissions from each Ingersoll-Rand Natural Gas Compressor Engine.

Additional support equipment includes a used oil tank, two (2) entrained liquid tanks, a lube oil tank, two (2) antifreeze tanks, waste water tank, two (2) kerosene tanks, and a diesel tank. All tanks are included in insignificant activities emission sources list. Natural gas is the only fuel used in any of the combustion sources.

Regulations

The following table contains the regulations applicable to this permit.

Regulations
Arkansas Air Pollution Control Code, Regulation 18, effective June 18, 2010
Regulations of the Arkansas Plan of Implementation for Air Pollution Control, Regulation 19, effective July 18, 2009
Regulations of the Arkansas Operating Air Permit Program, Regulation 26, effective January 25, 2009

Emission Summary

The following table is a summary of emissions from the facility. This table, in itself, is not an enforceable condition of the permit.

EMISSION SUMMARY				
Source No.	Description	Pollutant	Emission Rates	
			lb/hr	tpy
	Total Allowable Emission	PM/PM_{10}	1.7	5.0
		SO_2	0.9	0.9
		VOC	4.1	15.6
		CO	53.1	230.4
		NO_X	52.1	226.9
		*Acetaldehyde**	0.25	0.83
		*Formaldehyde**	1.37	5.84
		*Acrolein**	0.23	0.81
		*Methanol**	0.25	0.89
		*Benzene**	0.17	0.50
		*Toluene**	0.09	0.17
01	1,100 hp Ingersoll Rand KVG Compressor Engine	PM/PM_{10}	0.2	0.6
		SO_2	0.1	0.1
		VOC	0.5	1.9
		CO	5.4	23.4
		NO_X	4.1	17.8
		*Acetaldehyde**	0.03	0.10
		*Formaldehyde**	0.17	0.72
		*Acrolein**	0.03	0.10
		*Methanol**	0.03	0.11
		*Benzene**	0.02	0.06
		*Toluene**	0.01	0.02
02	1,100 hp Ingersoll Rand KVG Compressor Engine	PM/PM_{10}	0.2	0.6
		SO_2	0.1	0.1
		VOC	0.5	1.9
		CO	5.4	23.4
		NO_X	4.1	17.8
		*Acetaldehyde**	0.03	0.10
		*Formaldehyde**	0.17	0.72
		*Acrolein**	0.03	0.10
		*Methanol**	0.03	0.11
		*Benzene**	0.02	0.06
		*Toluene**	0.01	0.02

EMISSION SUMMARY				
Source No.	Description	Pollutant	Emission Rates	
			lb/hr	tpy
03	1,100 hp Ingersoll Rand KVG Compressor Engine	PM/PM_{10}	0.2	0.6
		SO_2	0.1	0.1
		VOC	0.5	1.9
		CO	5.4	23.4
		NO_X	4.1	17.8
		*Acetaldehyde**	0.03	0.10
		*Formaldehyde**	0.17	0.72
		*Acrolein**	0.03	0.10
		*Methanol**	0.03	0.11
		*Benzene**	0.02	0.06
		*Toluene**	0.01	0.02
04	1,100 hp Ingersoll Rand KVG Compressor Engine	PM/PM_{10}	0.2	0.6
		SO_2	0.1	0.1
		VOC	0.5	1.9
		CO	5.4	23.4
		NO_X	4.1	17.8
		*Acetaldehyde**	0.03	0.10
		*Formaldehyde**	0.17	0.72
		*Acrolein**	0.03	0.10
		*Methanol**	0.03	0.11
		*Benzene**	0.02	0.06
		*Toluene**	0.01	0.02
05	1,000 hp Ingersoll Rand KVG Compressor Engine	PM/PM_{10}	0.2	0.6
		SO_2	0.1	0.1
		VOC	0.5	1.9
		CO	5.4	23.4
		NO_X	4.1	17.8
		*Acetaldehyde**	0.03	0.10
		*Formaldehyde**	0.15	0.66
		*Acrolein**	0.02	0.09
		*Methanol**	0.03	0.10
		*Benzene**	0.02	0.06
		*Toluene**	0.01	0.02

EMISSION SUMMARY				
Source No.	Description	Pollutant	Emission Rates	
			lb/hr	tpy
06	1,000 hp Ingersoll Rand KVG Compressor Engine	PM/PM_{10}	0.2	0.6
		SO_2	0.1	0.1
		VOC	0.5	1.9
		CO	5.4	23.4
		NO_X	4.1	17.8
		*Acetaldehyde**	0.03	0.10
		*Formaldehyde**	0.15	0.66
		*Acrolein**	0.02	0.09
		*Methanol**	0.03	0.10
		*Benzene**	0.02	0.06
		*Toluene**	0.01	0.02
07	1,100 hp Ingersoll Rand KVG Compressor Engine	PM/PM_{10}	0.2	0.6
		SO_2	0.1	0.1
		VOC	0.5	1.9
		CO	5.4	23.4
		NO_X	4.1	17.8
		*Acetaldehyde**	0.03	0.10
		*Formaldehyde**	0.17	0.72
		*Acrolein**	0.03	0.10
		*Methanol**	0.03	0.11
		*Benzene**	0.02	0.06
		*Toluene**	0.01	0.02
08	1,100 hp Ingersoll Rand KVG Compressor Engine	PM/PM_{10}	0.2	0.6
		SO_2	0.1	0.1
		VOC	0.5	1.9
		CO	5.4	23.4
		NO_X	4.1	17.8
		*Acetaldehyde**	0.03	0.10
		*Formaldehyde**	0.17	0.72
		*Acrolein**	0.03	0.10
		*Methanol**	0.03	0.11
		*Benzene**	0.02	0.06
		*Toluene**	0.01	0.02

EMISSION SUMMARY				
Source No.	Description	Pollutant	Emission Rates	
			lb/hr	tpy
10	300 hp Caterpillar G379 Standby Generator	PM/PM_{10}	0.1	0.2
		SO_2	0.1	0.1
		VOC	0.1	0.4
		CO	9.9	43.2
		NO_X	19.3	84.5
		Acetaldehyde*	0.01	0.03
		Formaldehyde*	0.05	0.20
		Acrolein*	0.01	0.03
		Methanol*	0.01	0.03
		Benzene*	0.01	0.02
		Toluene*	0.01	0.01

*HAPs included in the VOC totals. Other HAPs are not included in any other totals unless specifically stated.

**Air Contaminants such as ammonia, acetone, and certain halogenated solvents are not VOCs or HAPs.

SECTION III: PERMIT HISTORY

The facility has been in existence since 1950.

The first air permit #1244-A for Carlisle was issued in 1992.
In 1995, the permit #1244-AR-1 was issued in order to reflect revised emission limits based on emission test results, incorporate existing tanks, and higher fuel usage based on actual operating experience.

Air Permit 1244-AOP-R0 was issued on August 30, 1999. This was the first Title V Operating Permit for the facility. The facility was subject to Title V because CO and NO_X emissions were greater than 100 tons per year.

Air Permit 1244-AOP-R1 was issued on June 01, 2005. This was the first Title V permit renewal for the facility. The emission limits were updated to reflect the latest AP-42 emission factors used in the calculations. The 275 hp Ingersoll Rand PVC auxiliary generator (SN-09) was disconnected from service.

SECTION IV: SPECIFIC CONDITIONS

SN-01 through SN-08
Six 1,100 hp Ingersoll Rand KVG Compressor Engines and Two
1,000 hp Ingersoll Rand KVG Compressor Engines

Source Description

There are six (6) 1,100 hp Ingersoll Rand KVG compressor engines used to pressurize natural gas (SN-01, 02, 03, 04, 07, and 08). There are two (2) 1,000 hp Ingersoll Rand KVG compressor engines also used to pressurize natural gas (SN-05 and SN-06).All compressors have 4-stroke rich-burn engines. Compressors may run at 120% of rated capacity for short durations. All engines are powered by natural gas and will have a non-selective catalytic converter installed in order to reduce NO_X and CO emissions.

Specific Conditions

1. The permittee shall not exceed the emission rates set forth in the following table. The pound per hour and ton per year rates emission rates are based on using natural gas and maximum operating capacity of the equipment. [Regulation 19, §19.501 et seq., and 40 CFR Part 52, Subpart E]

SN	Pollutant	lb/hr	tpy
01	PM_{10}	0.2	0.6
	SO_2	0.1	0.1
	VOC	0.5	1.9
	CO	5.4	23.4
	NO_X	4.1	17.8
02	PM_{10}	0.2	0.6
	SO_2	0.1	0.1
	VOC	0.5	1.9
	CO	5.4	23.4
	NO_X	4.1	17.8
03	PM_{10}	0.2	0.6
	SO_2	0.1	0.1
	VOC	0.5	1.9
	CO	5.4	23.4
	NO_X	4.1	17.8
04	PM_{10}	0.2	0.6
	SO_2	0.1	0.1
	VOC	0.5	1.9
	CO	5.4	23.4
	NO_X	4.1	17.8

SN	Pollutant	lb/hr	tpy
05	PM_{10}	0.2	0.6
	SO_2	0.1	0.1
	VOC	0.5	1.9
	CO	5.4	23.4
	NO_X	4.1	17.8
06	PM_{10}	0.2	0.6
	SO_2	0.1	0.1
	VOC	0.5	1.9
	CO	5.4	23.4
	NO_X	4.1	17.8
07	PM_{10}	0.2	0.6
	SO_2	0.1	0.1
	VOC	0.5	1.9
	CO	5.4	23.4
	NO_X	4.1	17.8
08	PM_{10}	0.2	0.6
	SO_2	0.1	0.1
	VOC	0.5	1.9
	CO	5.4	23.4
	NO_X	4.1	17.8

2. The permittee shall not exceed the HAP emission rates set forth in the following table at SN-01 through SN-08. Compliance with HAPs emission will be assured through the use of natural gas and operating at or below maximum allowed capacity of the equipment. [Regulation 18, §18.801 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

SN	Pollutant	lb/hr	tpy
01	PM	0.2	0.6
	Acetaldehyde	0.03	0.03
	Formaldehyde	0.17	0.20
	Acrolein	0.03	0.03
	Methanol	0.03	0.03
	Benzene	0.02	0.02
	Toluene	0.01	0.01
02	PM	0.2	0.6
	Acetaldehyde	0.03	0.03
	Formaldehyde	0.17	0.20
	Acrolein	0.03	0.03
	Methanol	0.03	0.03
	Benzene	0.02	0.02
	Toluene	0.01	0.01

SN	Pollutant	lb/hr	tpy
03	PM	0.2	0.6
	Acetaldehyde	0.03	0.10
	Formaldehyde	0.17	0.72
	Acrolein	0.03	0.10
	Methanol	0.03	0.11
	Benzene	0.02	0.06
	Toluene	0.01	0.02
04	PM	0.2	0.6
	Acetaldehyde	0.03	0.10
	Formaldehyde	0.17	0.72
	Acrolein	0.03	0.10
	Methanol	0.03	0.11
	Benzene	0.02	0.06
	Toluene	0.01	0.02
05	PM	0.2	0.6
	Acetaldehyde	0.03	0.10
	Formaldehyde	0.15	0.66
	Acrolein	0.02	0.09
	Methanol	0.03	0.10
	Benzene	0.02	0.06
	Toluene	0.01	0.02
06	PM	0.2	0.6
	Acetaldehyde	0.03	0.10
	Formaldehyde	0.15	0.66
	Acrolein	0.02	0.09
	Methanol	0.03	0.10
	Benzene	0.02	0.06
	Toluene	0.01	0.02
07	PM	0.2	0.6
	Acetaldehyde	0.03	0.10
	Formaldehyde	0.17	0.72
	Acrolein	0.03	0.10
	Methanol	0.03	0.11
	Benzene	0.02	0.06
	Toluene	0.01	0.02
08	PM	0.2	0.6
	Acetaldehyde	0.03	0.10
	Formaldehyde	0.17	0.72
	Acrolein	0.03	0.10
	Methanol	0.03	0.11
	Benzene	0.02	0.06
	Toluene	0.01	0.02

3. Visible emissions may not exceed the limits specified in the following table of this permit as measured by EPA Reference Method 9. The permittee will demonstrate compliance with this condition by Plantwide Condition No. 6.

SN	Limit	Regulatory Citation
01, 02, 03, 04, 05, 06, 07, and 08	5%	§18.501

Compliance Assurance Monitoring (CAM)

The facility shall install non-selective catalytic reduction (NSCR) in order to comply with NAAQS standard for NO_X.

Non-selective catalytic reduction uses residual hydrocarbons and CO in the rich-burn engine exhaust as a reducing agent for the NOx. The hydrocarbons and CO are oxidized by O2 and NOx. The excess hydrocarbons, CO, and NOx pass over a catalyst that oxidizes the excess hydrocarbons and CO to H2O and CO2, while reducing NOx to N2. The NOx and CO reduction efficiencies are approximately 90 percent.

4. The compressor engines (SN-01 through SN-8) are subject to and shall comply with all applicable provisions of Regulation 19, §19.304, 40 CFR Part 52 Subpart E, and Part §64.6 for Compliance Assurance Monitoring. [Regulation 19, §19.304, 40 CFR Part 52 Subpart E, and Part §64.6]

5. The permittee shall operate the NSCR unit within design parameters whenever its engine is operating. Any excursions will require logging of any corrective action, event duration, and reporting in the semi-annual report. Qualifying events include periods during start-up when the temperature recorded is outside the specified range. Records of these events will be maintained at nearest manned facility. The uncontrolled emissions during these events must also be included in the tally of emission totals. [Regulation 19, §19.304, 40 CFR Part 52 Subpart E, and Part §64.6]

6. The permittee shall continuously monitor the temperature of the exhaust gas into the catalyst when the NSCR is operating by use of an inline thermocouple. These readings will be recorded, maintained at the nearest manned facility, and made available to Department personnel upon request. [Regulation 19, §19.304, §19.705, 40 CFR Part 52 Subpart E, and Part §64.6]

7. During the compliance monitoring required by Specific Condition #6, the 4-hour rolling average temperature may not exceed 1250 F or fall below 750 F. Values outside this range will trigger an indicator which requires corrective action, logging, and reporting in the semi-annual report. Records of these occurrences will be maintained at nearest manned facility. [Regulation 19, §19.304, §19.705, 40 CFR Part 52 Subpart E, and Part §64.6]

8. The thermocouple and indicator required in Specific Condition #6 and #7 shall be visually checked quarterly and tested annually. Records of these tests shall be maintained

at the nearest manned facility and made available to Department personnel upon request. [Regulation 19, §19.304, §19.705, 40 CFR Part 52 Subpart E, and Part §64.6]

9. The permittee shall observe and record the pressure drop across the catalyst monthly using a differential pressure gauge and/or transmitter. Records of these readings will be maintained at nearest manned facility, available to Department personnel upon request, and submitted to the Department under General Condition #7. [Regulation 19, §19.304, §19.705, 40 CFR Part 52 Subpart E, and Part §64.6]

10. During the compliance monitoring required by Specific Condition #9, the recorded pressure drop may not deviate from the baseline (initial operating) reading by more than 2 inches H_2O. Values outside this range require corrective action, logging, and reporting in the semi-annual report. Records of these occurrences will be maintained at nearest manned facility. [Regulation 19, §19.304, §19.705, 40 CFR Part 52 Subpart E, and Part §64.6]

11. The pressure gauge required in Specific Condition #9 shall be calibrated quarterly. Records of these tests shall be maintained at the nearest manned facility and made available to Department personnel upon request. [Regulation 19, §19.304, §19.705, 40 CFR Part 52 Subpart E, and Part §64.6]

12. The converter is equipped with an over-temperature system that protects the catalyst from excessive temperature conditions caused by engine misfires. The over-temperature system installed in the NSCR shall be tested annually to check functionality. Records of these tests shall be maintained at the nearest manned facility and made available to Department personnel upon request. [Regulation 19, §19.304, §19.705, 40 CFR Part 52 Subpart E, and Part §64.6]

13. The permittee shall use an O_2 sensor to analyze the exhaust gas in order to make adjustments to the combustion process. If the adjustment needed is outside of the acceptable range, an alarm will be triggered. If the alarm sounds for more than 30 minutes in any 4 hour period, corrective action must be taken. All alarm events shall be logged and reporting in the semi-annual report. Records of these occurrences will be maintained at nearest manned facility. [Regulation 19, §19.304, §19.705, 40 CFR Part 52 Subpart E, and Part §64.6]

14. The permittee shall implement a Preventative Maintenance plan for the engine and catalyst system to assure proper operation. An inspection of the air/fuel ratio controller system, temperature scanners/end devices, and a visual inspection of the thermocouple probes shall be performed on a weekly basis. [Regulation 19, §19.304, §19.705, 40 CFR Part 52 Subpart E, and Part §64.6]

15. Records demonstrating compliance with Specific Condition #14 shall be maintained at the nearest manned facility and made available upon request. [Regulation 19, §19.304, §19.705, 40 CFR Part 52 Subpart E, and Part §64.6]

SN-10

300 hp Caterpillar G379 Standby Generator

Source Description

Caterpillar G379 Standby Generator (SN-10) is powered by 300 hp 4-stroke rich burn engine. Natural gas is used as a fuel.

Specific Conditions

16. The permittee shall not exceed the emission rates set forth in the following table. The pound per hour and ton per year rates emission rates are based on using natural gas and maximum operating capacity of the equipment. [Regulation 19, §19.501 et seq. and 40 CFR Part 52, Subpart E]

SN	Pollutant	lb/hr	tpy
10	PM_{10}	0.1	0.2
	SO_2	0.1	0.1
	VOC	0.1	0.4
	CO	9.9	43.2
	NO_X	19.3	84.5

17. The permittee shall not exceed the HAP emission rates set forth in the following table at SN-10. Compliance with HAPs emission will be assured through the use of natural gas and operating at or below maximum capacity of the equipment. [Regulation 19, §19.501 et seq. and 40 CFR Part 52, Subpart E]

SN	Pollutant	lb/hr	tpy
10	PM	0.1	0.2
	Acetaldehyde	0.01	0.03
	Formaldehyde	0.05	0.20
	Acrolein	0.01	0.03
	Methanol	0.01	0.03
	Benzene	0.01	0.02
	Toluene	0.01	0.01

18. The permittee shall not exceed 5% opacity from source SN-10 as measured by EPA Reference Method 9. Compliance with this condition shall be demonstrated by burning natural gas. [§18.501 and A.C.A §8-4-304 and §8-4-311]

SECTION V: COMPLIANCE PLAN AND SCHEDULE

CenterPoint Energy - Mississippi River Transmission Corp. Carlisle Compressor Station will continue to operate in compliance with those identified regulatory provisions. The facility will examine and analyze future regulations that may apply and determine their applicability with any necessary action taken on a timely basis.

SECTION VI: PLANTWIDE CONDITIONS

1. The permittee shall notify the Director in writing within thirty (30) days after commencing construction, completing construction, first placing the equipment and/or facility in operation, and reaching the equipment and/or facility target production rate. [Regulation 19, §19.704, 40 CFR Part 52, Subpart E, and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

2. If the permittee fails to start construction within eighteen months or suspends construction for eighteen months or more, the Director may cancel all or part of this permit. [Regulation 19, §19.410(B) and 40 CFR Part 52, Subpart E]

3. The permittee must test any equipment scheduled for testing, unless otherwise stated in the Specific Conditions of this permit or by any federally regulated requirements, within the following time frames: (1) new equipment or newly modified equipment within sixty (60) days of achieving the maximum production rate, but no later than 180 days after initial start up of the permitted source or (2) operating equipment according to the time frames set forth by the Department or within 180 days of permit issuance if no date is specified. The permittee must notify the Department of the scheduled date of compliance testing at least fifteen (15) days in advance of such test. The permittee shall submit the compliance test results to the Department within thirty (30) days after completing the testing. [Regulation 19, §19.702 and/or Regulation 18 §18.1002 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

4. The permittee must provide:

    a. Sampling ports adequate for applicable test methods;
    b. Safe sampling platforms;
    c. Safe access to sampling platforms; and
    d. Utilities for sampling and testing equipment.

    [Regulation 19, §19.702 and/or Regulation 18, §18.1002 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

5. The permittee must operate the equipment, control apparatus and emission monitoring equipment within the design limitations. The permittee shall maintain the equipment in good condition at all times. [Regulation 19, §19.303 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

6. Pipeline quality natural gas shall be the only fuel used to fire the compressor engines at this facility. [Regulation No.19 §19.705 and/or Regulation No. 18 §18.1004, A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, and 40 CFR 70.6]

7. The permittee shall use good maintenance practices to control emissions from valves, fittings, flanges, seals and other associated equipment. [Regulation 19, §19.303 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

8. This permit subsumes and incorporates all previously issued air permits for this facility. [Regulation 26 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

9. Pursuant to Regulation 19, section 19.705 and A.C.A. 8-4-203 as referenced by A.C.A. 8-4-304 and 8-4-311, the permittee may replace any existing engines on a temporary or permanent basis with engines which have the same or lower emission rates on a pound per hour basis, and have the same or lower horsepower, and which result in the same or lower actual emissions from the facility on a ton per year basis. The permittee shall conduct NOx and CO emission testing within 90 days of the date of replacement to verify the emissions from the newly installed engine. This testing shall be conducted in accordance with EPA Reference Methods 7E for NOx and 10 for CO. The permittee shall notify ADEQ of the replacement within 30 days of startup. This does not apply to modifications which must go through a PSD review as defined in 40 CFR 52.21 or equipment subject to 40 CFR Part 60 Subpart JJJJ. Notwithstanding the above, as provided by Regulation 26, in the event an emergency occurs, the permittee shall have an affirmative defense of emergency to an action brought for non-compliance with technology-based emission limitations if the conditions of Regulation 26, Sec. 7(f) are met.

10. The permittee shall simultaneously conduct tests for CO and NOx on the compressor engines initially and every 5 years in accordance with Plantwide Condition 3 and the schedule set forth in the following table. EPA Reference Method 10 and 7E shall be used for CO and NOx, respectively. The permittee shall test the engine within 90% of its rated capacity. If the engine is not tested within this range, the permittee shall be limited to operating within 10% above the tested rate. The benchmark pressure drop across the catalyst as referenced in Specific Condition #10 shall be confirmed during testing. The Department reserves the right to select the engine(s) to be tested. The engine(s) tested shall be rotated so that no such engine(s) is tested twice before another similar (make and model) engine of equal horse power engine is tested once. If the tested emission rate for any pollutant is in excess of the permitted emission rate, all similar (make and model) engines shall be tested for that pollutant. [Regulation No.19 §19.702, and 40 CFR Part 52, Subpart E]

Testing

SN	Description	Testing Requirement
01, 02, 03, 04, 05, 06, 07, and 08	1100 HP Ingersoll Rand KVG Compressor Engine	All (8) engines initially and every five years

Title VI Provisions

11. The permittee must comply with the standards for labeling of products using ozone-depleting substances. [40 CFR Part 82, Subpart E]

a. All containers containing a class I or class II substance stored or transported, all products containing a class I substance, and all products directly manufactured with a class I substance must bear the required warning statement if it is being introduced to interstate commerce pursuant to §82.106.
b. The placement of the required warning statement must comply with the requirements pursuant to §82.108.
c. The form of the label bearing the required warning must comply with the requirements pursuant to §82.110.
d. No person may modify, remove, or interfere with the required warning statement except as described in §82.112.

12. The permittee must comply with the standards for recycling and emissions reduction, except as provided for MVACs in Subpart B. [40 CFR Part 82, Subpart F]

a. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to §82.156.
b. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to §82.158.
c. Persons performing maintenance, service repair, or disposal of appliances must be certified by an approved technician certification program pursuant to §82.161.
d. Persons disposing of small appliances, MVACs, and MVAC like appliances must comply with record keeping requirements pursuant to §82.166. ("MVAC like appliance" as defined at §82.152)
e. Persons owning commercial or industrial process refrigeration equipment must comply with leak repair requirements pursuant to §82.156.
f. Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to §82.166.

13. If the permittee manufactures, transforms, destroys, imports, or exports a class I or class II substance, the permittee is subject to all requirements as specified in 40 CFR Part 82, Subpart A, Production and Consumption Controls.

14. If the permittee performs a service on motor (fleet) vehicles when this service involves ozone depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners.

The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term "MVAC" as used in Subpart B does not include the air tight sealed refrigeration system used as refrigerated cargo, or the system used on passenger buses using HCFC 22 refrigerant.

15. The permittee can switch from any ozone depleting substance to any alternative listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 CFR Part 82, Subpart G.

SECTION VII: INSIGNIFICANT ACTIVITIES

The following sources are insignificant activities. Any activity that has a state or federal applicable requirement shall be considered a significant activity even if this activity meets the criteria of §26.304 of Regulation 26 or listed in the table below. Insignificant activity determinations rely upon the information submitted by the permittee in an application dated November 18, 2009.

Description	Category
2,500 gallons used oil storage tank	A-3
Two (2) 4,200 gallons entrained liquid storage tanks	A-3
5,000 gallons lube oil storage tank	A-3
8,820 gallons antifreeze storage tank	A-3
4,200 gallons antifreeze storage tank	A-3
1,500 gallons waste water storage tank	A-3
Two (2) 100 gallons kerosene storage tanks	A-2
100 gallons diesel storage tank	A-2
Compressors blowdowns	A-13
Fugitive emissions	A-13

SECTION VIII: GENERAL PROVISIONS

1. Any terms or conditions included in this permit which specify and reference Arkansas Pollution Control & Ecology Commission Regulation 18 or the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 et seq.) as the sole origin of and authority for the terms or conditions are not required under the Clean Air Act or any of its applicable requirements, and are not federally enforceable under the Clean Air Act. Arkansas Pollution Control & Ecology Commission Regulation 18 was adopted pursuant to the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 et seq.). Any terms or conditions included in this permit which specify and reference Arkansas Pollution Control & Ecology Commission Regulation 18 or the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 et seq.) as the origin of and authority for the terms or conditions are enforceable under this Arkansas statute. [40 CFR 70.6(b)(2)]

2. This permit shall be valid for a period of five (5) years beginning on the date this permit becomes effective and ending five (5) years later. [40 CFR 70.6(a)(2) and §26.701(B) of the Regulations of the Arkansas Operating Air Permit Program (Regulation 26)]

3. The permittee must submit a complete application for permit renewal at least six (6) months before permit expiration. Permit expiration terminates the permittee's right to operate unless the permittee submitted a complete renewal application at least six (6) months before permit expiration. If the permittee submits a complete application, the existing permit will remain in effect until the Department takes final action on the renewal application. The Department will not necessarily notify the permittee when the permit renewal application is due. [Regulation 26, §26.406]

4. Where an applicable requirement of the Clean Air Act, as amended, 42 U.S.C. 7401, et seq. (Act) is more stringent than an applicable requirement of regulations promulgated under Title IV of the Act, the permit incorporates both provisions into the permit, and the Director or the Administrator can enforce both provisions. [40 CFR 70.6(a)(1)(ii) and Regulation 26, §26.701(A)(2)]

5. The permittee must maintain the following records of monitoring information as required by this permit.

    a. The date, place as defined in this permit, and time of sampling or measurements;
    b. The date(s) analyses performed;
    c. The company or entity performing the analyses;
    d. The analytical techniques or methods used;
    e. The results of such analyses; and
    f. The operating conditions existing at the time of sampling or measurement.

    [40 CFR 70.6(a)(3)(ii)(A) and Regulation 26, §26.701(C)(2)]

6. The permittee must retain the records of all required monitoring data and support information for at least five (5) years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. [40 CFR 70.6(a)(3)(ii)(B) and Regulation 26, §26.701(C)(2)(b)]

7. The permittee must submit reports of all required monitoring every six (6) months. If permit establishes no other reporting period, the reporting period shall end on the last day of the anniversary month of the initial Title V permit. The report is due within thirty (30) days of the end of the reporting period. Although the reports are due every six months, each report shall contain a full year of data. The report must clearly identify all instances of deviations from permit requirements. A responsible official as defined in Regulation No. 26, §26.2 must certify all required reports. The permittee will send the reports to the address below:

    Arkansas Department of Environmental Quality
    Air Division
    ATTN: Compliance Inspector Supervisor
    5301 Northshore Drive
    North Little Rock, AR 72118-5317

    [40 C.F.R. 70.6(a)(3)(iii)(A) and Regulation 26, §26.701(C)(3)(a)]

8. The permittee shall report to the Department all deviations from permit requirements, including those attributable to upset conditions as defined in the permit.

    a. For all upset conditions (as defined in Regulation19, § 19.601), the permittee will make an initial report to the Department by the next business day after the discovery of the occurrence. The initial report may be made by telephone and shall include:

        i. The facility name and location;
        ii. The process unit or emission source deviating from the permit limit;
        iii. The permit limit, including the identification of pollutants, from which deviation occurs;
        iv. The date and time the deviation started;
        v. The duration of the deviation;
        vi. The average emissions during the deviation;
        vii. The probable cause of such deviations;
        viii. Any corrective actions or preventive measures taken or being taken to prevent such deviations in the future; and
        ix. The name of the person submitting the report.

The permittee shall make a full report in writing to the Department within five (5) business days of discovery of the occurrence. The report must include, in addition to the information required by the initial report, a schedule of actions taken or planned to eliminate future occurrences and/or to minimize the amount the permit's limits were exceeded and to reduce the length of time the limits were exceeded. The permittee may submit a full report in writing (by facsimile, overnight courier, or other means) by the next business day after discovery of the occurrence, and the report will serve as both the initial report and full report.

b. For all deviations, the permittee shall report such events in semi-annual reporting and annual certifications required in this permit. This includes all upset conditions reported in 8a above. The semi-annual report must include all the information as required by the initial and full reports required in 8a.

[Regulation 19, §19.601 and §19.602, Regulation 26, §26.701(C)(3)(b), and 40 CFR 70.6(a)(3)(iii)(B)]

9. If any provision of the permit or the application thereof to any person or circumstance is held invalid, such invalidity will not affect other provisions or applications hereof which can be given effect without the invalid provision or application, and to this end, provisions of this Regulation are declared to be separable and severable. [40 CFR 70.6(a)(5), Regulation 26, §26.701(E), and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

10. The permittee must comply with all conditions of this Part 70 permit. Any permit noncompliance with applicable requirements as defined in Regulation 26 constitutes a violation of the Clean Air Act, as amended, 42 U.S.C. §7401, et seq. and is grounds for enforcement action; for permit termination, revocation and reissuance, for permit modification; or for denial of a permit renewal application. [40 CFR 70.6(a)(6)(i) and Regulation 26, §26.701(F)(1)]

11. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the conditions of this permit. [40 CFR 70.6(a)(6)(ii) and Regulation 26, §26.701(F)(2)]

12. The Department may modify, revoke, reopen and reissue the permit or terminate the permit for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. [40 CFR 70.6(a)(6)(iii) and Regulation 26, §26.701(F)(3)]

13. This permit does not convey any property rights of any sort, or any exclusive privilege. [40 CFR 70.6(a)(6)(iv) and Regulation 26, §26.701(F)(4)]

14. The permittee must furnish to the Director, within the time specified by the Director, any information that the Director may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee must also furnish to the Director copies of records required by the permit. For information the permittee claims confidentiality, the Department may require the permittee to furnish such records directly to the Director along with a claim of confidentiality. [40 CFR 70.6(a)(6)(v) and Regulation 26, §26.701(F)(5)]

15. The permittee must pay all permit fees in accordance with the procedures established in Regulation 9. [40 CFR 70.6(a)(7) and Regulation 26, §26.701(G)]

16. No permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes provided for elsewhere in this permit. [40 CFR 70.6(a)(8) and Regulation 26, §26.701(H)]

17. If the permit allows different operating scenarios, the permittee shall, contemporaneously with making a change from one operating scenario to another, record in a log at the permitted facility a record of the operational scenario. [40 CFR 70.6(a)(9)(i) and Regulation 26, §26.701(I)(1)]

18. The Administrator and citizens may enforce under the Act all terms and conditions in this permit, including any provisions designed to limit a source's potential to emit, unless the Department specifically designates terms and conditions of the permit as being federally unenforceable under the Act or under any of its applicable requirements. [40 CFR 70.6(b) and Regulation 26, §26.702(A) and (B)]

19. Any document (including reports) required by this permit must contain a certification by a responsible official as defined in Regulation 26, §26.2. [40 CFR 70.6(c)(1) and Regulation 26, §26.703(A)]

20. The permittee must allow an authorized representative of the Department, upon presentation of credentials, to perform the following: [40 CFR 70.6(c)(2) and Regulation 26, §26.703(B)]

    a. Enter upon the permittee's premises where the permitted source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
    b. Have access to and copy, at reasonable times, any records required under the conditions of this permit;
    c. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and

d. As authorized by the Act, sample or monitor at reasonable times substances or parameters for assuring compliance with this permit or applicable requirements.

21. The permittee shall submit a compliance certification with the terms and conditions contained in the permit, including emission limitations, standards, or work practices. The permittee must submit the compliance certification annually within 30 days following the last day of the anniversary month of the initial Title V permit. The permittee must also submit the compliance certification to the Administrator as well as to the Department. All compliance certifications required by this permit must include the following: [40 CFR 70.6(c)(5) and Regulation 26, §26.703(E)(3)]

a. The identification of each term or condition of the permit that is the basis of the certification;
b. The compliance status;
c. Whether compliance was continuous or intermittent;
d. The method(s) used for determining the compliance status of the source, currently and over the reporting period established by the monitoring requirements of this permit; and
e. Such other facts as the Department may require elsewhere in this permit or by §114(a)(3) and §504(b) of the Act.

22. Nothing in this permit will alter or affect the following: [Regulation 26, §26.704(C)]

a. The provisions of Section 303 of the Act (emergency orders), including the authority of the Administrator under that section;
b. The liability of the permittee for any violation of applicable requirements prior to or at the time of permit issuance;
c. The applicable requirements of the acid rain program, consistent with §408(a) of the Act; or
d. The ability of EPA to obtain information from a source pursuant to §114 of the Act.

23. This permit authorizes only those pollutant emitting activities addressed in this permit. [A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

24. The permittee may request in writing and at least 15 days in advance of the deadline, an extension to any testing, compliance or other dates in this permit. No such extensions are authorized until the permittee receives written Department approval. The Department may grant such a request, at its discretion in the following circumstances:

a. Such an extension does not violate a federal requirement;
b. The permittee demonstrates the need for the extension; and
c. The permittee documents that all reasonable measures have been taken to meet the current deadline and documents reasons it cannot be met.

[Regulation 18, §18.314(A), Regulation 19, §19.416(A), Regulation 26, §26.1013(A), A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, and 40 CFR Part 52, Subpart E]

25. The permittee may request in writing and at least 30 days in advance, temporary emissions and/or testing that would otherwise exceed an emission rate, throughput requirement, or other limit in this permit. No such activities are authorized until the permittee receives written Department approval. Any such emissions shall be included in the facility's total emissions and reported as such. The Department may grant such a request, at its discretion under the following conditions:

    a. Such a request does not violate a federal requirement;
    b. Such a request is temporary in nature;
    c. Such a request will not result in a condition of air pollution;
    d. The request contains such information necessary for the Department to evaluate the request, including but not limited to, quantification of such emissions and the date/time such emission will occur;
    e. Such a request will result in increased emissions less than five tons of any individual criteria pollutant, one ton of any single HAP and 2.5 tons of total HAPs; and
    f. The permittee maintains records of the dates and results of such temporary emissions/testing.

[Regulation 18, §18.314(B), Regulation 19, §19.416(B), Regulation 26, §26.1013(B), A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, and 40 CFR Part 52, Subpart E]

26. The permittee may request in writing and at least 30 days in advance, an alternative to the specified monitoring in this permit. No such alternatives are authorized until the permittee receives written Department approval. The Department may grant such a request, at its discretion under the following conditions:

    a. The request does not violate a federal requirement;
    b. The request provides an equivalent or greater degree of actual monitoring to the current requirements; and
    c. Any such request, if approved, is incorporated in the next permit modification application by the permittee.

[Regulation 18, §18.314(C), Regulation 19, §19.416(C), Regulation 26, §26.1013(C), A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, and 40 CFR Part 52, Subpart E]

Appendix A: Compliance Assurance Monitoring

COMPLIANCE ASSURANCE MONITORING:
CATALYTIC CONVERTER FOR NOx and CO CONTROL
CENTERPOINT ENERGY- MISSISSIPPI RIVER TRANSMISSION CORP.
CARLISLE COMPRESSOR STATION
COMPRESSOR ENGINES

I. Background

A. Emissions Unit

Description: Ingersoll Rand KVG Compressor Engines
Point Source Nos:
Facility: Centerpoint Energy- Mississippi River Transmission Corp.
Carlisle Compressor Station

B. Applicable Regulation, Emission Limits, and Monitoring Requirements

Regulation: Proposed Title V Permit
Emission limits (per engine):

Pollutant	Emissions	
	(lbs/hr)	tpy
NOx		
CO		

Monitoring requirements: Temperature of exhaust gas into the catalyst bed (deg. F), pressure drop across catalyst, and inspection and preventative maintenance program.

C. Control Technology:

Non-selective catalytic reduction (NSCR w/AFRC)

II. Monitoring Approach

The key elements of the monitoring approach are presented in Table 1.

III. Response to Excursion

Excursions outside of the indicator ranges will trigger an inspection, corrective action, and reporting. Maintenance personnel will inspect the compressors and the catalytic converters within 24 hours of receiving notification of an excursion and make needed repairs as soon as practicable. See Table 1 for additional details. Operation will return to normal upon completed corrective action.

TABLE 1. CARLISLE COMPRESSOR STATION/COMPRESSOR ENGINE MONITORING APPROACH

	Indicator No. 1	Indicator No. 2
I. Indicator	Temperature of exhaust gas into catalyst.	Pressure drop across the catalyst.
Measurement Approach	Exhaust gas temperature is measured continuously using an in line thermocouple and translated by a temp. scanner or other end device.	Pressure drop across the catalyst beds is measured monthly using a differential pressure gauge.
II. Indicator Range	The indicator range is above 750 F but lower than 1250 F. Excursions trigger corrective action, logging and reporting in semiannual report.	The indicator range is a pressure drop deviation of less than 2 in. H2O from the benchmark. Excursions trigger corrective action, logging and reporting in semiannual report.
III. Performance Criteria A. Data Representativeness	Temperature is measured at the inlet to the catalyst by a thermocouple. The minimum accuracy is +/-5 F.	Pressure drop across the catalyst is measured at the catalyst inlet and exhaust. The minimum accuracy of the device is ±0.25 in. H2O.
B. QA/QC Practices and Criteria	Thermocouple visually checked quarterly and tested annually.	Pressure gauge calibrated quarterly.
C. Monitoring Frequency	Temperature is measured continuously.	Pressure drop is measured monthly.
D. Data Collection Procedures	Temperatures will be collected by our SCADA system and recorded on a computer in the Shreveport office. . Otherwise excursions trigger corrective action, logging and reporting in semiannual report.	Records are maintained to document monthly readings and any required maintenance.
E. Averaging period	4-hour rolling average	None, not to exceed maximum.

MONITORING APPROACH JUSTIFICATION

I. Background

Compressor engines are used in natural gas plants for process compression needs. Postcombustion catalytic controls are installed on the engine exhaust system in order to lower NOx and CO emissions. The catalytic converters uses residual hydrocarbons and CO in the rich-burn engine exhaust as a reducing agent for the NOx. The hydrocarbons and CO are oxidized by O_2 and NOx. The excess hydrocarbons, CO, and NOx pass over a catalyst that oxidizes the excess hydrocarbons and CO to H_2O and CO_2, while reducing NOx to N_2. The NOx and CO reduction efficiencies are approximately 90 percent. The catalysts are passive units and have no mechanical components.

II. Rationale for Selection of Performance Indicators

Temperature into the catalyst unit is measured because temperature excursions can indicate problems with engine operation that can prevent the chemical reaction from taking place in the catalyst bed. Too low of an exhaust temperature reduces the activity of the intended chemical/catalyst reaction. Too high of an exhaust gas temperature increase into the catalyst can indicate engine problems and the catalyst unit may be damaged by higher temperatures than it was designed to handle.

The pressure drop across the catalyst is measured monthly. A significant change in pressure drop from the benchmark can indicate that the catalyst is becoming fouled, slowing gas flow through the unit, and lowering the effectiveness of the unit.

Continued implementation of the Preventative Maintenance plan related to the operation of the engine and catalyst system will help provide assurance that the engine and catalyst are in good repair and are being operated properly. Weekly inspections for proper operation of the engine help to ensure that the catalysts aren't being fouled and emission limits can be met. If no excursions occur, compliance will be assured based on optimum performance of the catalyst unit. Preventative maintenance checks for proper operation of the engines facilitate good catalyst reactions. Operation at low or high temperatures can inhibit proper chemical reaction and could be caused by fouling or masking as one cause to prevent. Items on the weekly PM plan include inspecting the air/fuel ratio controller system, visual inspection of thermocouple probes to ensure proper operation, and inspection of temperature scanners or end devices.

MRT uses an air/fuel ratio controller (AFRC) to promote and maintain proper air/fuel ratios. The AFR is set to comply with emission limits for NOx and CO. The AFRC continuously checks and controls the air/fuel combustion mixtures. The set points for the AFRCs are checked during the weekly I/PM checks. Typically, the AFR set points do not require continual adjustment. Annual stack testing using portable analyzers help to verify the effectiveness of the preventative maintenance activities performed weekly in complying with permit limits.

III. Rationale for Selection of Indicator Level

Each catalyst bed is designed to work optimally at recommended temperatures. The temperature ranges selected are based on the catalyst manufacturer's suggested operating parameters for optimal chemical reaction and CEFS's field experience.

The O2 sensor output voltage range (typically 0.1 to 0.9 volts above 650°F) is site-specific and must be set by using an exhaust gas analyzer to determine the set-point voltage that results in the best emission performance. An alarm will be triggered if the position of an AFRC stepper valve is at

the minimum travel limit (indicating the engine is too rich and the controller cannot close the valve any further) or maximum travel limit (indicating that the engine is too lean and the controller cannot open the valve any further to enrich the mixture). The field office will receive notification when the alarm sounds for 30 minutes. Such excursions should trigger corrective action, logging, and reporting in the semiannual reports.

The indicator range for the catalyst pressure drop is a pressure drop that deviates more than 2 inches of H_2O from the benchmark. This range was selected based on the manufacturer's specifications. A change in pressure drop indicates fouling of the catalyst and requires either cleaning or replacing of the catalyst bed. The first pressure drop reading following installation will be used as the benchmark.

Inspection and Preventive Maintenance Plan

The following is an inspection and preventive maintenance plan for engines equipped with NSCR. The plan is designed to ensure optimum operation of the converters, avoid situations that could cause converter damage and identify problems in a timely manner.

I. Engine Operations

Proper engine operation is critical to the performance of catalytic converters. Emissions are directly influenced by a number of factors that affect combustion temperature and efficiency, including the engine timing, the type and heat-content of the fuel, the ambient air temperature and relative humidity, the fuel temperature, and changes in load. An Air-to-Fuel Ratio Controller (AFRC) is used to automatically adjust for changes in these factors. However, the range of adjustment of most AFRCs is limited. Each engine is equipped with an alarm system that sounds if the AFRC is unable to fully compensate for significant changes in the load or fuel heat-content that may result in the engine prematurely detonating or misfiring. If an engine misfires, it produces high catalyst temperatures because the unburned air/fuel mixture burns when it contacts the catalyst. Several misfiring cylinders can produce enough heat to cause permanent damage to the catalyst.

Preventive Maintenance: Engines will be checked weekly for proper operation and for misfiring conditions. Corrective action may include adjusting the engine timing to a different setting at which the AFRC can adequately adjust the air-to-fuel ratio over the expected range of fuel heat content and loading. The timing setting is site-specific, based on the fuel heat-content and the expected load on the engine. Once the timing is set, the AFRC is adjusted so that it can compensate for the range of other expected changes in air and fuel over which the engine is expected to operate. If significant changes in fuel heat-content or loading occur, the timing must be reset and the AFRC again adjusted to the new operating conditions.

II. Over-Temperature System

The converter is equipped with an over-temperature system that protects the catalyst from excessive temperature conditions caused by engine misfires.

Preventive Maintenance: The catalyst over-temperature system will be tested annually to ensure it is working.

III. Exhaust Temperature

For efficient converter operations, the NSCR inlet gas must be above 750°F at all times, with a maximum of 1,250°F.

Preventive Maintenance: The thermocouples measuring the exhaust temperature will be tested

annually. The thermocouple probes will be visually inspected quarterly.

IV. Air-to-Fuel Ratio Controller

The air-to-fuel ratio controllers are used in conjunction with catalytic converters to control the oxygen content of the exhaust. The air/fuel ratio controllers are set to control oxygen content such that CO and NOx limits are not exceeded.

Preventive Maintenance: The air-to-fuel ratio set-points will be checked and adjusted quarterly. The controller will be checked weekly to ensure that the alarm set-points are correct.

V. Performance Monitoring

Catalyst temperature will be used to monitor catalyst performance.

CERTIFICATE OF SERVICE

I, Cynthia Hook, hereby certify that a copy of this permit has been mailed by first class mail to CenterPoint Energy - Mississippi River Transmission Corp. Carlisle Compressor Station, P.O. Box 21734, Shreveport, LA, 71151, on this 1st day of October, 2010.

Cynthia Hook, AAII, Air Division