STATE OF MISSISSIPPI
AIR POLLUTION CONTROL
TITLE V PERMIT

TO OPERATE AIR EMISSIONS EQUIPMENT

THIS CERTIFIES THAT

Southern Natural Gas Company, LLC
Enterprise Compressor Station
100 County Road 332
Enterprise, Mississippi (Clarke Co.)

has been granted permission to operate air emissions equipment in accordance with emission limitations, monitoring requirements and conditions set forth herein. This permit is issued in accordance with Title V of the Federal Clean Air Act (42 U.S.C.A. § 7401 - 7671) and the provisions of the Mississippi Air and Water Pollution Control Law (Section 49-17-1 et. seq., Mississippi Code of 1972), and the regulations and standards adopted and promulgated thereunder.

Permit Issued: SEP 2 0 2013

Effective Date: As specified herein.

MISSISSIPPI ENVIRONMENTAL QUALITY PERMIT BOARD

AUTHORIZED SIGNATURE
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

Expires: August 31, 2018 **Permit No.: 0440-00048**

4857 PER20110001

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SECTION 1. GENERAL CONDITIONS

1.1 The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Federal Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. (Ref.: APC-S-6, Section III.A.6.a.)

1.2 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 in order to maintain compliance with the conditions of this permit. (Ref.: APC-S-6, Section III.A.6.b.)

1.3 This permit and/or any part thereof may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. (Ref.: APC-S-6, Section III.A.6.c.)

1.4 This permit does not convey any property rights of any sort, or any exclusive privilege. (Ref.: APC-S-6, Section III.A.6.d.)

1.5 The permittee shall furnish to the DEQ within a reasonable time any information the DEQ 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 shall also furnish to the DEQ copies of records required to be kept by the permittee or, for information to be confidential, the permittee shall furnish such records to DEQ along with a claim of confidentiality. The permittee may furnish such records directly to the Administrator along with a claim of confidentiality. (Ref.: APC-S-6, Section III.A.6.e.)

1.6 The provisions of this permit are severable. If any provision of this permit, or the application of any provision of this permit to any circumstances, is challenged or held invalid, the validity of the remaining permit provisions and/or portions thereof or their application to other persons or sets of circumstances, shall not be affected thereby. (Ref.: APC-S-6, Section III.A.5.)

1.7 The permittee shall pay to the DEQ an annual permit fee. The amount of fee shall be determined each year based on the provisions of regulated pollutants for fee purposes and the fee schedule specified in the Commission on Environmental Quality's order which shall be issued in accordance with the procedure outlined in Regulation APC-S-6.

(a) For purposes of fee assessment and collection, the permittee shall elect for actual or allowable emissions to be used in determining the annual quantity of emissions unless the Commission determines by order that the method chosen by the applicant for calculating actual emissions fails to reasonably represent actual emissions. Actual emissions shall be calculated using emission monitoring data or direct emissions

measurements for the pollutant(s); mass balance calculations such as the amounts of the pollutant(s) entering and leaving process equipment and where mass balance calculations can be supported by direct measurement of process parameters, such direct measurement data shall be supplied; published emission factors such as those relating release quantities to throughput or equipment type (e.g., air emission factors); or other approaches such as engineering calculations (e.g., estimating volatilization using published mathematical formulas) or best engineering judgments where such judgments are derived from process and/or emission data which supports the estimates of maximum actual emission. (Ref.: APC-S-6, Section VI.A.2.)

(b) If the Commission determines that there is not sufficient information available on a facility's emissions, the determination of the fee shall be based upon the permitted allowable emissions until such time as an adequate determination of actual emissions is made. Such determination may be made anytime within one year of the submittal of actual emissions data by the permittee. (Ref.: APC-S-6, Section VI.A.2.) If at any time within the year the Commission determines that the information submitted by the permittee on actual emissions is insufficient or incorrect, the permittee will be notified of the deficiencies and the adjusted fee schedule. Past due fees from the adjusted fee schedule will be paid on the next scheduled quarterly payment time. (Ref.: APC-S-6, Section VI.D.2.)

(c) The fee shall be due September 1 of each year. By July 1 of each year the permittee shall submit an inventory of emissions for the previous year on which the fee is to be assessed. The permittee may elect a quarterly payment method of four (4) equal payments; notification of the election of quarterly payments must be made to the DEQ by the first payment date of September 1. The permittee shall be liable for penalty as prescribed by State Law for failure to pay the fee or quarterly portion thereof by the date due. (Ref.: APC-S-6, Section VI.D.)

(d) If in disagreement with the calculation or applicability of the Title V permit fee, the permittee may petition the Commission in writing for a hearing in accordance with State Law. Any disputed portion of the fee for which a hearing has been requested will not incur any penalty or interest from and after the receipt by the Commission of the hearing petition. (Ref.: APC-S-6, Section VI.C.)

1.8 No permit revision shall be required under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in this permit. (Ref.: APC-S-6, Section III.A.8.)

1.9 Any document required by this permit to be submitted to the DEQ shall contain a certification by a responsible official that states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. (Ref.: APC-S-6, Section II.E.)

1.10 The permittee shall allow the DEQ, or an authorized representative, upon the presentation

of credentials and other documents as may be required by law, to perform the following:

(a) enter upon the permittee's premises where a Title V 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 that must be kept 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 the permit; and

(d) as authorized by the Federal Act, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or applicable requirements. (Ref.: APC-S-6, Section III.C.2.)

1.11 Except as otherwise specified or limited herein, the permittee shall have necessary sampling ports and ease of accessibility for any new air pollution control equipment, obtained after May 8, 1970, and vented to the atmosphere. (Ref.: APC-S-1, Section 3.9(a))

1.12 Except as otherwise specified or limited herein, the permittee shall provide the necessary sampling ports and ease of accessibility when deemed necessary by the Permit Board for air pollution control equipment that was in existence prior to May 8, 1970. (Ref.: APC-S-1, Section 3.9(b))

1.13 Compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance where such applicable requirements are included and are specifically identified in the permit or where the permit contains a determination, or summary thereof, by the Permit Board that requirements specifically identified previously are not applicable to the source. (Ref.: APC-S-6, Section III.F.1.)

1.14 Nothing in this permit shall alter or affect the following:

(a) the provisions of Section 303 of the Federal Act (emergency orders), including the authority of the Administrator under that section;

(b) the liability of an owner or operator of a source 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 Section 408(a) of the Federal Act.

(d) the ability of EPA to obtain information from a source pursuant to Section 114 of the Federal Act. (Ref.: APC-S-6, Section III.F.2.)

1.15 The permittee shall comply with the requirement to register a Risk Management Plan if permittee's facility is required pursuant to Section 112(r) of the Act to register such a plan. (Ref.: APC-S-6, Section III.H.)

1.16 Expiration of this permit terminates the permittee's right to operate unless a timely and complete renewal application has been submitted. A timely application is one which is submitted at least six (6) months prior to expiration of the Title V permit. If the permittee submits a timely and complete application, the failure to have a Title V permit is not a violation of regulations until the Permit Board takes final action on the permit application. This protection shall cease to apply if, subsequent to the completeness determination, the permittee fails to submit by the deadline specified in writing by the DEQ any additional information identified as being needed to process the application. (Ref.: APC-S-6, Section IV.C.2., Section IV.B., and Section II.A.1.c.)

1.17 The permittee is authorized to make changes within their facility without requiring a permit revision (ref: Section 502(b)(10) of the Act) if:

(a) the changes are not modifications under any provision of Title I of the Act;

(b) the changes do not exceed the emissions allowable under this permit;

(c) the permittee provides the Administrator and the Department with written notification in advance of the proposed changes (at least seven (7) days, or such other time frame as provided in other regulations for emergencies) and the notification includes:

(1) a brief description of the change(s),

(2) the date on which the change will occur,

(3) any change in emissions, and

(4) any permit term or condition that is no longer applicable as a result of the change;

(d) the permit shield shall not apply to any Section 502(b)(10) change. (Ref.: APC-S-6, Section IV.F.)

1.18 Should the Executive Director of the Mississippi Department of Environmental Quality declare an Air Pollution Emergency Episode, the permittee will be required to operate in accordance with the permittee's previously approved Emissions Reduction Schedule or, in the absence of an approved schedule, with the appropriate requirements specified in Regulation APC-S-3, "Regulations for the Prevention of Air Pollution Emergency Episodes" for the level of emergency declared. (Ref.: APC-S-3)

1.19 Except as otherwise provided herein, a modification of the facility may require a Permit to

Construct in accordance with the provisions of Regulations APC-S-2, "Permit Regulations for the Construction and/or Operation of Air Emissions Equipment", and may require modification of this permit in accordance with Regulations APC-S-6, "Air Emissions Operating Permit Regulations for the Purposes of TitleV of the Federal Clean Air Act". Modification is defined as "[a]ny physical change in or change in the method of operation of a facility which increases the actual emissions or the potential uncontrolled emissions of any air pollutant subject to regulation under the Federal Act emitted into the atmosphere by that facility or which results in the emission of any air pollutant subject to regulation under the Federal Act into the atmosphere not previously emitted. A physical change or change in the method of operation shall not include:

(a) routine maintenance, repair, and replacement;

(b) use of an alternative fuel or raw material by reason of an order under Sections 2 (a) and (b) of the Federal Energy Supply and Environmental Coordination Act of 1974 (or any superseding legislation) or by reason of a natural gas curtailment plan pursuant to the Federal Power Act;

(c) use of an alternative fuel by reason of an order or rule under Section 125 of the Federal Act;

(d) use of an alternative fuel or raw material by a stationary source which:

(1) the source was capable of accommodating before January 6, 1975, unless such change would be prohibited under any federally enforceable permit condition which was established after January 6, 1975, pursuant to 40 CFR 52.21 or under regulations approved pursuant to 40 CFR 51.166; or

(2) the source is approved to use under any permit issued under 40 CFR 52.21 or under regulations approved pursuant to 40 CFR 51.166;

(e) an increase in the hours of operation or in the production rate unless such change would be prohibited under any federally enforceable permit condition which was established after January 6, 1975, pursuant to 40 CFR 52.21 or under regulations approved pursuant to 40 CFR Subpart I or 40 CFR 51.166; or

(f) any change in ownership of the stationary source."

1.20 Any change in ownership or operational control must be approved by the Permit Board. (Ref.: APC-S-6, Section IV.D.4.)

1.21 This permit is a Federally approved operating permit under Title V of the Federal Clean Air Act as amended in 1990. All terms and conditions, including any designed to limit the source's potential to emit, are enforceable by the Administrator and citizens under the Federal Act as well as the Commission. (Ref.: APC-S-6, Section III.B.1)

1.22 Except as otherwise specified or limited herein, the open burning of residential, commercial, institutional, or industrial solid waste, is prohibited. This prohibition does not apply to infrequent burning of agricultural wastes in the field, silvicultural wastes for forest management purposes, land-clearing debris, debris from emergency clean-up operations, and ordnance. Open burning of land-clearing debris must not use starter or auxiliary fuels which cause excessive smoke (rubber tires, plastics, etc.); must not be performed if prohibited by local ordinances; must not cause a traffic hazard; must not take place where there is a High Fire Danger Alert declared by the Mississippi Forestry Commission or Emergency Air Pollution Episode Alert imposed by the Executive Director and must meet the following buffer zones.

(a) Open burning without a forced-draft air system must not occur within 500 yards of an occupied dwelling.

(b) Open burning utilizing a forced-draft air system on all fires to improve the combustion rate and reduce smoke may be done within 500 yards of but not within 50 yards of an occupied dwelling.

(c) Burning must not occur within 500 yards of commercial airport property, private air fields, or marked off-runway aircraft approach corridors unless written approval to conduct burning is secured from the proper airport authority, owner or operator. (Ref.: APC-S-1, Section 3.7)

1.23 Except as otherwise specified herein, the permittee shall be subject to the following provision with respect to emergencies.

(a) Except as otherwise specified herein, an "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

(b) An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions specified in (c) following are met.

(c) The affirmative defense of emergency shall be demonstrated through properly signed contemporaneous operating logs, or other relevant evidence that include information as follows:

(1) an emergency occurred and that the permittee can identify the cause(s) of the emergency;

(2) the permitted facility was at the time being properly operated;

(3) during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and

(4) the permittee submitted notice of the emergency to the DEQ within 2 working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

(d) In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

(e) This provision is in addition to any emergency or upset provision contained in any applicable requirement specified elsewhere herein. (Ref.: APC-S-6, Section III.G.)

1.24 Except as otherwise specified herein, the permittee shall be subject to the following provisions with respect to upsets, startups, shutdowns and maintenance.

(a) Upsets (as defined by APC-S-1, Section 2.37)

(1) The occurrence of an upset constitutes an affirmative defense to an enforcement action brought for noncompliance with emission standards or other requirements of Applicable Rules and Regulations or any applicable permit if the permittee demonstrates through properly signed contemporaneous operating logs, or other relevant evidence that include information as follows:

(i) an upset occurred and that the permittee can identify the cause(s) of the upset;

(ii) the source was at the time being properly operated;

(iii) during the upset the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements of Applicable Rules and Regulations or any applicable permit;

(iv) the permittee submitted notice of the upset to the DEQ within 5 working days of the time the upset began; and

(v) the notice of the upset shall contain a description of the upset, any steps taken to mitigate emissions, and corrective actions taken.

(2) In any enforcement proceeding, the permittee seeking to establish the

occurrence of an upset has the burden of proof.

(3) This provision is in addition to any upset provision contained in any applicable requirement.

(b) Startups and Shutdowns (as defined by APC-S-1, Sections 2.34& 2.29)

(1) Startups and shutdowns are part of normal source operation. Emissions limitations applicable to normal operation apply during startups and shutdowns except as follows:

(i) when sudden, unavoidable breakdowns occur during a startup or shutdown, the event may be classified as an upset subject to the requirements above;

(ii) when a startup or shutdown is infrequent, the duration of excess emissions is brief in each event, and the design of the source is such that the period of excess emissions cannot be avoided without causing damage to equipment or persons; or

(iii) when the emissions standards applicable during a startup or shutdown are defined by other requirements of Applicable Rules and Regulations or any applicable permit.

(2) In any enforcement proceeding, the permittee seeking to establish the applicability of any exception during a startup or shutdown has the burden of proof.

(3) In the event this startup and shutdown provision conflicts with another applicable requirement, the more stringent requirement shall apply.

(c) Maintenance.

(1) Maintenance should be performed during planned shutdown or repair of process equipment such that excess emissions are avoided. Unavoidable maintenance that results in brief periods of excess emissions and that is necessary to prevent or minimize emergency conditions or equipment malfunctions constitutes an affirmative defense to an enforcement action brought for noncompliance with emission standards, or other regulatory requirements if the permittee can demonstrate the following:

(i) the permittee can identify the need for the maintenance;

(ii) the source was at the time being properly operated;

(iii) during the maintenance the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements of Applicable Rules and Regulations or any applicable permit;

(iv) the permittee submitted notice of the maintenance to the DEQ within 5 working days of the time the maintenance began or such other times as allowed by DEQ; and

(v) the notice shall contain a description of the maintenance, any steps taken to mitigate emissions, and corrective actions taken.

(2) In any enforcement proceeding, the permittee seeking to establish the applicability of this section has the burden of proof.

(3) In the event this maintenance provision conflicts with another applicable requirement, the more stringent requirement shall apply. (Ref.: APC-S-1, Section 10)

1.25 The permittee shall comply with all applicable standards for demolition and renovation activities pursuant to the requirements of 40 CFR Part 61, Subpart M, as adopted by reference in Regulation APC-S-1, Section 8. The permittee shall not be required to obtain a modification of this permit in order to perform the referenced activities.

SECTION 2. EMISSION POINTS & POLLUTION CONTROL DEVICES

Emission Point	Description
AA-003	2,000 HP Clark TLAD-5 natural gas-fired compressor engine (Ref. No. 001C-008)
AA-004	2,000 HP Clark TLAD-5 natural gas-fired compressor engine (Ref. No. 001C-009)
AA-005	2,500 HP Cooper Bessemer GMVH-12C natural gas-fired compressor engine (Ref. No. 001C-010)
AA-006	3,920 HP Cooper Bessemer 8W330-C2 natural gas-fired compressor engine (Ref. No. 001C-011)
AA-007	3,920 HP Cooper Bessemer 8W330-C2 natural gas-fired compressor engine (Ref. No. 001C-012)
AA-008	3,920 HP Cooper Bessemer 8W330-C2 natural gas-fired compressor engine (Ref. No. 001C-013)
AA-009	567 HP Caterpillar G3412 TA natural gas-fired emergency generator (Ref. No. 002G-003)
AA-010	4,730 HP Caterpillar G3616 natural gas-fired compressor engine (Ref. No. 001C-014) equipped with an oxidation catalyst
AA-011	4,730 HP Caterpillar G3616 natural gas-fired compressor engine (Ref. No. 001C-015) equipped with an oxidation catalyst
AA-012	340 HP Detroit Diesel S60G natural gas-fired emergency generator (Ref. No. 002G-004)
AA-013	10,350 HP Solar Taurus T-70 natural gas-fired compressor turbine (~61.16 MMBTU/hr)
AA-014	650 HP Kohler Power Systems Model 400 REZXB natural gas-fired emergency generator (~5.2 MMBTU/hr)

SECTION 3. EMISSION LIMITATIONS & STANDARDS

A. Facility-Wide Emission Limitations & Standards

3.A.1 Except as otherwise specified or limited herein, the permittee shall not cause, permit, or allow the emission of smoke from a point source into the open air from any manufacturing, industrial, commercial or waste disposal process which exceeds forty (40) percent opacity subject to the exceptions provided in (a) & (b).

(a) Startup operations may produce emissions which exceed 40% opacity for up to fifteen (15) minutes per startup in any one hour and not to exceed three (3) startups per stack in any twenty-four (24) hour period.

(b) Emissions resulting from soot blowing operations shall be permitted provided such emissions do not exceed 60 percent opacity, and provided further that the aggregate duration of such emissions during any twenty-four (24) hour period does not exceed ten (10) minutes per billion BTU gross heating value of fuel in any one hour. (Ref.: APC-S-1, Section 3.1)

3.A.2 Except as otherwise specified or limited herein, the permittee shall not cause, allow, or permit the discharge into the ambient air from any point source or emissions, any air contaminant of such opacity as to obscure an observer's view to a degree in excess of 40% opacity, equivalent to that provided in Paragraph 3.A.1. This shall not apply to vision obscuration caused by uncombined water droplets. (Ref.: APC-S-1, Section 3.2)

B. Emission Point Specific Emission Limitations & Standards

Emission Point(s)	Applicable Requirement	Condition Number(s)	Pollutant/ Parameter	Limit/Standard
AA-003 through AA-008, AA-010, AA-011, AA-013 & AA-014	APC-S-1, Section 3.4(a)(2)	3.B.1	PM/PM_{10}	$E=0.8808*I^{-0.1667}$
	APC-S-1, Section 4.1(a)	3.B.2	SO_2	4.8 lbs/MMBTU
AA-009 & AA-012	APC-S-1, Section 3.4(a)(1)	3.B.3	PM/PM_{10}	0.6 lbs/MMBTU
	APC-S-1, Section 4.1(a)	3.B.2	SO_2	4.8 lbs/MMBTU
AA-003	Construction Permit issued on November 7, 1978.	3.B.4	NO_X	59.2 lbs/hr and 248.6 TPY
			Operating hours	8,424 hrs/yr

Emission Point(s)	Applicable Requirement	Condition Number(s)	Pollutant/ Parameter	Limit/Standard
AA-004	PSD Construction Permit issued on August 3, 1981.	3.B.5	NO_X	37.4 lbs/hr and 163.9 TPY
			CO	10.5 lbs/hr and 46.2 TPY
AA-005	Construction Permit issued on August 28, 1984.	3.B.6	NO_X	12.7 lbs/hr and 55.6 TPY
AA-006, AA-007, &AA-008	Construction Permit issued on May 14, 1996.	3.B.7	NO_X	24.0 lbs/hr and 105.0 TPY
			CO	15.0 lbs/hr and 65.0 TPY
AA-010	Title V Permit Modification issued on January 18, 2002 and PSD Construction Permit issued on August 26, 2003.	3.B.8	CO	3.65 lbs/hr and 16.0 TPY*
			NO_X	7.3 lbs/hr and 31.97 TPY
			VOC	4.43 lbs/hr and 19.41 TPY*
			Fuel Restriction	Natural Gas Only
			Control Device Requirement	The air pollution control device must be operated at all times.
AA-011	PSD Construction Permit issued on August 26, 2003.	3.B.9	CO	3.65 lbs/hr and 16.0 TPY*
			NO_X	7.3 lbs/hr and 31.97 TPY
			VOC	4.43 lbs/hr and 19.41 TPY*
			Fuel Restriction	Natural Gas Only
			Control Device Requirement	The air pollution control device must be operated at all times.
AA-003 through AA-008 &AA-010	NESHAP 40 CFR 63 Subpart ZZZZ, 63.6585 & 63.6590(b)(3)	3.B.10	HAP	MACT applicability only and does not have to meet the requirements of this standard.
AA-009	NESHAP 40 CFR 63 Subpart ZZZZ, 63.6585, 63.6590(b)(3)& 63.6640 (f)(2)	3.B.11	HAP	No limit on the use of emergency RICE in emergency situations and for maintenance checks. Limited to additional 50 hrs/yr in non-emergency situations with restrictions. No other subpart requirements apply.

Emission Point(s)	Applicable Requirement	Condition Number(s)	Pollutant/ Parameter	Limit/Standard
AA-011	NESHAP 40 CFR 63 Subpart ZZZZ, 63.6585&63.6590(a)(2)(i)	3.B.12	HAP	MACT applicability.
	NESHAP 40 CFR 63 Subpart ZZZZ,63.6600(b) & Table 2a	3.B.13	CO	Reduce CO emissions by ≥ 93% using an oxidation catalyst.
	NESHAP 40 CFR 63 Subpart ZZZZ, 63.6600(b) & Table 2b	3.B.14	Pressure	Pressure drop across the catalyst changes≤ 2 in. of H_2O.
			Temperature	Maintain catalyst inlet temp. between 450 ^oF and 1350 ^oF.
	NESHAP 40 CFR 63 Subpart ZZZZ,63.6605	3.B.15	Operating Requirements	Limits apply except during startup, shutdown & malfunction.
AA-012	NESHAP 40 CFR 63 Subpart ZZZZ, 63.6585, 63.6590(a)(1)(ii), 63.6595(a)(1), 63.6602 & 63.6640(f)(1)	3.B.16	HAP and Maintenance Requirements	MACT applicability by October 19, 2013.
AA-010 & AA-011	CAM 40 CFR 64	3.B.17	CO and Formaldehyde	See CAM Plans in Appendix B.
AA-013	Construction Permit issued on April 1, 2013. NSPS 40 CFR 60 Subpart GG, 60.330(a)&(b)	3.B.18	CO	11.89 lbs/hr and45.14 TPY
			NO_X	9.77 lbs/hr and 37.05 TPY
			VOC	3.10 lbs/hr and 11.75 TPY
	NSPS 40 CFR 60 Subpart GG, 60.332(a)(2)	3.B.19	NO_X	STD = 0.0150((14.4)/Y) + F
	NSPS 40 CFR 60 Subpart GG, 60.333(b)	3.B.20	Sulfur Content	≤ 0.8% by weight (8000 ppmw)
	NSPS 40 CFR 60 Subpart GG, 60.334(h)(3)	3.B.21	Fuel Restrictions	Natural Gas Only, with sulfur content ≤ 20.0 grains/100 scf
AA-014	Construction Permit issued on April 1, 2013. NSPS 40 CFR 60 Subpart JJJJ, 60.4230(a)(4)(iv) & 60.4233(e)	3.B.22	CO	4.0 g/hp-hr
			NO_X	2.0 g/hp-hr
			VOC	1.0 g/hp-hr
			Op. Hours	≤ 500 hours/year

Emission Point(s)	Applicable Requirement	Condition Number(s)	Pollutant/ Parameter	Limit/Standard
AA-014	NSPS 40 CFR 60 Subpart JJJJ, 60.4243(b)(2)	3.B.23	Maintenance Requirements	Maintain plan and records of maintenance. Conduct initial performance test and subsequent performance testevery 8,760 hours or 3 years, whichever comes first.
	NSPS 40 CFR 60 Subpart JJJJ, 60.4243(d)	3.B.24		Maintenance checks/readiness testing is limited to 100 hrs/year; however, there is no time limit on use in emergency situations. Emergency stationary ICE may operate up to 50 hrs/year in non-emergency situations, but those hours are counted towards the 100 hrs/year limit.
	NESHAP 40 CFR 63 Subpart ZZZZ, 63.6580 & 63.6590(c)	3.B.25	Applicability Determination	Compliance with NSPS Subpart JJJJ shall satisfy compliance requirements of 40 CFR 63, Subpart ZZZZ.

3.B.1 For Emission Points AA-003 through AA-008, AA-010, AA-011, AA-013, and AA-014, the permittee shall not have particulate matter (PM) emissions from fossil fuel burning installations of greater than 10 million BTU per hour heat input that exceeds the emission rate as determined by the relationship:

$$E=0.8808 * I^{-0.1667}$$

where E is the emission rate in pounds per million BTU per hour heat input and I is the heat input in millions of BTU per hour. (Ref.: APC-S-1, Section 3.4(a)(2))

3.B.2 For Emission Points AA-003 through AA-014, the permittee shall not discharge sulfur oxides from any fuel burning installation in which the fuel is burned primarily to produce heat or power by indirect heat transfer in excess of 4.8 pounds (measured as sulfur dioxide(SO_2)) per million BTU heat input. (Ref.: APC-S-1, Section 4.1(a))

3.B.3 For Emission Points AA-009 and AA-012, the maximum permissible emission of ash and/or PM from fossil fuel burning installations of less than 10 million BTU per hour heat input shall not exceed 0.6 pounds per million BTU per hour heat input. (Ref.: APC-S-1, Section 3.4(a)(1))

3.B.4 For Emission Point AA-003, the permittee is limited by the Permit to Construct issued on November 7, 1978.Nitrogen oxide (NO_X) emissions are limited to 59.2 pounds per hour (lbs/hr) and 248.6 tons per year (TPY) andoperating hours are limited to 8,424 hours per year (hrs/yr).

3.B.5 For Emission Point AA-004, the permittee is limited by the PSD Construction Permit issued on August 3, 1981. NO_X emissions are limited to 37.4 lbs/hr and 163.9 TPY, and carbon monoxide (CO) emissions are limited to 10.5 lbs/hr and 46.2 TPY.

3.B.6 For Emission Point AA-005, the permittee is limited by the Permit to Construct issued on August 28, 1984. NO_X emissions are limited to 12.7 lbs/hr and 55.6 TPY.

3.B.7 For Emission Points AA-006, AA-007, and AA-008, the permittee is limited by the Permit to Construct issued on May 14, 1996. NO_X emissions are limited to 24.0 lbs/hr and 105.0 TPY, and CO emissions are limited to 15.0 lbs/hr and 65.0 TPY.

3.B.8 For Emission Point AA-010, the permittee is limited by the PSD Construction Permit issued on August 26, 2003, and the Title V Permit Modification issued on January 18, 2002.Emissions are limited as follows:

CO	3.65 lbs/hr and 16.0 TPY*
NO_X	7.3 lbs/hr and 31.97 TPY
VOC	4.43 lbs/hr and 19.41 TPY*

** Limits established to remain below PSD significant emission rates.*

For Emission Point AA-010, the permittee is restricted to combusting natural gas only, and the air pollution control device must be operated at all times.

3.B.9 For Emission Point AA-011, the permittee is limited by the PSD Construction Permit issued on August 26, 2003. Emissions are limited as follows:

CO	3.65 lbs/hr and 16.0 TPY*
NO_X	7.3 lbs/hr and 31.97 TPY
VOC	4.43 lbs/hr and 19.41 TPY*

** Limits established to remain below PSD significant emission rates.*

For Emission Point AA-011, the permittee is restricted to combusting natural gas only, and the air pollution control device must be operated at all times.

3.B.10 Emission Points AA-003 through AA-008 and AA-010 are subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE), 40 CFR Part 63, Subpart ZZZZ. These units are existing stationary RICE's that are 2-stroke or 4-stroke lean burn units and are not required to meet the requirements of this standard or the General Provisions, 40 CFR Part 63, Subpart A. (Ref.: 40 CFR 63.6585 & 63.6590(b)(3))

3.B.11 Emission Point AA-009 is subject to the NESHAP for Stationary RICE, 40 CFR Part 63, Subpart ZZZZ. This unit is an existing stationary RICE that is a 4-stroke rich burn unit and

is also an emergency use unit that is not required to meet the requirements of this standard, except for 40 CFR 63.6640(f)(2), or General Provisions, 40 CFR Part 63, Subpart A. (Ref.: 40 CFR 63.6585 and 63.6590(b)(3))

There is no time limit on the use of the emergency RICE in emergency situations and for maintenance checks and readiness (recommended by the manufacturer, vendor, or insurance company), but required testing should be minimized. The emergency stationary RICE is limited to an additional 50 hours per year in non-emergency situations. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. In addition, any operation of this unit that is not considered emergency use under this standard should be documented by the permittee. (Ref.: 40 CFR 63.6640(f)(2))

3.B.12 Emission Point AA-011 is subject to the NESHAP for Stationary RICE, 40 CFR Part 63, Subpart ZZZZ. This is a new stationary 4-stroke lean burn RICE with a site rating of more than 500 HP subject to the applicable emission and operating limitations in Table 2a and Table 2b of the subpart. (Ref.: 40 CFR 63.6585, 63.6590(a)(2)(i), & 63.6600(b))

3.B.13 For Emission Point AA-011, the permittee shall reduce CO emissions by 93% or more using an oxidation catalyst operated at 100% load plus or minus 10%. (Ref.: 40 CFR 63.6600(b) & Table 2a)

3.B.14 For Emission Point AA-011, the permittee shall maintain the catalyst so that the pressure drop across the catalyst does not change by more than two inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst that was measured during the initial performance test. In addition, the permittee shall maintain the temperature of the stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 ^{o}F and less than or equal to 1350 ^{o}F. (Ref.: 40 CFR 63.6600(b) & Table 2b)

3.B.15 For Emission Point AA-011, the permittee shall comply with the emission limitations and operating limitations at all times except during periods of startup, shutdown, and malfunction. The permittee shall also maintain the stationary RICE, including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at all times, including during startup, shutdown, and malfunction. (Ref.: 40 CFR 63.6605)

3.B.16 Emission Point AA-012 is subject to the NESHAP for Stationary RICE, 40 CFR Part 63, Subpart ZZZZ. This unit is an existing emergency stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions that is required to comply with the emission limitations in Table 2c to this subpart and the requirements of 40 CFR 63.6640(f)(1). (Ref.: 40 CFR 63.6585, 63.6590(a)(1)(ii), 63.6595(a)(1), 63.6602, & 63.6640(f)(1))

An existing stationary spark ignition (SI) RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions must comply with the applicable emission limitations and operating limitations no later than **October 19, 2013**.

An emergency stationary SI RICE must do the following (from Table 2c):

(a) Change oil and filter every 500 hours of operation or annually, whichever comes first;

(b) Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first; and

(c) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

There is no time limit on the use of the emergency RICE in emergency situations and for maintenance checks and readiness (recommended by the manufacturer, vendor, or insurance company), but required testing should be minimized. The emergency stationary RICE is limited to an additional 50 hours per year in non-emergency situations. Maintenance checks and readiness testing of such units is limited to 100 hours per year unless more time is required by Federal, State, or local standards. The 50 hours per year in non-emergency situations are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. In addition, any operation of this unit that is not considered emergency use under this standard should be documented by the permittee.

3.B.17 For Emission Points AA-010 and AA-011, the permittee shall comply with the Compliance Assurance Monitoring (CAM) requirements as specified in 40 CFR Part 64. The CAM Plans are provided in Appendix B.

3.B.18 For Emission Point AA-013, the permittee is limited by the Permit to Construct issued on April 1, 2013. NO_X emissions are limited to 9.77 lbs/hr and 37.05 TPY, CO emissions are limited to 11.89 lbs/hr and 45.14 TPY, and VOC emissions are limited to 3.10 lbs/hr and 11.75 TPY.

Emission Point AA-013 is subject to the New Source Performance Standards (NSPS) for Stationary Combustion Turbines, 40 CFR Part 60, Subpart GG, and shall comply with all applicable requirements of the General Provisions in Subpart A. Subpart GG is applicable to all stationary gas turbines that commenced construction, modification, or reconstruction after October 3, 1977, with a heat input at peak load equal to or greater than 10.7 gigajoules (10 million Btu) per hour, based on the lower heating value of the fuel fired. (Ref.: §60.330(a) and (b))

3.B.19 For Emission Point AA-013, the permittee shall not cause to be discharged into the atmosphere from any stationary gas turbine, any gases which contain nitrogen oxides in excess of:

$$STD = 0.0150((14.4)/Y) + F$$

where: STD = allowable ISO corrected (if required as given in §60.335(b)(1)) NO_X emission concentration (percent by volume at 15 percent oxygen and on a dry basis), Y = manufacturer's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility (The value of Y shall not exceed 14.4 kilojoules per watt hour), and F = NO_X emission allowance for fuel-bound nitrogen as defined in 60.332(a)(4).

(Ref.: §60.332(a)(2))

3.B.20 For Emission Point AA-013, the permittee shall not burn any fuel which contains total sulfur in excess of 0.8 percent by weight (8000 ppmw). (Ref.: §60.333(b))

3.B.21 For Emission Point AA-013, the permittee shall demonstrate that the gaseous fuel combusted in the turbine meets the definition of natural gas in §60.331(u). The permittee shall use one of the following sources of information to make the required demonstration:

(a) The gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less; or

(b) Representative fuel sampling data which show that the sulfur content of the gaseous fuel does not exceed 20 grains/100 scf. At a minimum, the amount of fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of Appendix D to Part 75 is required.

(Ref.: §60.334(h)(3))

3.B.22 For Emission Point AA-014, the permittee is limited by the Permit to Construct issued on April 1, 2013. NO_X emissions are limited to 2.0 g/hp-hr, CO emissions are limited to 4.0 g/hp-hr, VOC emissions are limited to 1.0 g/hp-hr, and the hours of operation are limited to 500 hour per year.

Emission Point AA-014 is subject to NSPS for Stationary Spark Ignition (SI) Internal Combustion Engines (ICE), 40 CFR 60, Subpart JJJJ. The provisions of Subpart JJJJ are applicable to manufacturers, owners, and operators of SI ICE where the permittee commences construction after June 12, 2006, and the stationary SI ICE is manufactured on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 KW (25 HP). (Ref.: 40 CFR 60.4230(a)(4)(iv))

Emission Point AA-014, Stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) (except gasoline and rich burn engines that use LPG), must comply with the emission standards in Table 1 of Subpart JJJJ. The 650 HP emergency generator is subject to NO_X, CO, and VOC emission limits of 2.0, 4.0, and 1.0 g/hp-hr, respectively. (Ref.: 40 CFR 60.4233(e))

3.B.23 For Emission Point AA-014, units required to comply with the emission standards specified in § 60.4233(d) or (e), the permittee must demonstrate compliance for a non-certified engine greater than 500 HP by keeping a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, the permittee must conduct an initial performance test and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance. (40 CFR 60.4243(b)(2))

3.B.24 For Emission Point AA-014, the permittee may operate the emergency stationary ICE for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year; however, there is no time limit on the use of emergency stationary ICE in emergency situations. Emergency stationary ICE may operate up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. For emergency engines, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year is prohibited. (Ref.: 40 CFR 60.4243(d))

3.B.25 Emission Point AA-014 is subject to NESHAP for Stationary RICE, 40 CFR Part 63, Subpart ZZZZ; however, by complying with NSPS Subpart JJJJ, the permittee shall be in compliance 40 CFR 63, Subpart ZZZZ, as provided in the regulation. (Ref.: 40 CFR 63.6580& 63.6590(c))

C. Insignificant and Trivial Activity Emission Limitations & Standards

Applicable Requirement	Condition Number(s)	Pollutant/ Parameter	Limit/Standard
APC-S-1, Section 3.4(a)(1)	3.C.1	PM/PM_{10}	0.6 lbs/MMBTU, or as otherwise limited by facility modification restrictions
APC-S-1, Section 4.1(a)	3.C.2	SO_2	4.8 lbs/MMBTU, or as otherwise limited by facility modification restrictions
APC-S-1, Section 3.6(a)	3.C.3	PM/PM_{10}	$E=4.1(p)^{0.67}$, or as otherwise limited by facility modification restrictions

3.C.1 The maximum permissible emission of ash and/or particulate matter from fossil fuel burning installations of less than 10 million BTU per hour heat input shall not exceed 0.6 pounds per million BTU per hour heat input. (Ref.: APC-S-1, Section 3.4(a)(1))

3.C.2 The maximum discharge of sulfur oxides from any fuel burning installation in which the fuel is burned primarily to produce heat or power by indirect heat transfer shall not exceed 4.8 pounds (measured as sulfur dioxide) per million BTU heat input. (Ref.: APC-S-1, Section 4.1(a))

3.C.3 Except as otherwise specified or limited herein, the permittee shall not cause, permit, or allow the emission from any manufacturing process, in any one hour from any point source, particulate matter in total quantities in excess of the amount determined by the relationship:

$$E=4.1(p)^{0.67}$$

Where E is the emission rate in pounds per hour and p is the process weight input rate in tons per hour. If the process weight input rate (p) changes, the emissions rate (E) will change accordingly. (Ref.: APC-S-1, Section 3.6(a))

SECTION 4. COMPLIANCE SCHEDULE

4.1 Unless otherwise specified herein, the permittee shall be in compliance with all requirements contained herein upon issuance of this permit.

4.2 Except as otherwise specified herein, the permittee shall submit to the Permit Board and to the Administrator of EPA Region IV a certification of compliance with permit terms and conditions, including emission limitations, standards, or work practices, by January 31 for the preceding calendar year. Each compliance certification shall include the following:

(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 applicable reporting period;

(e) such other facts as may be specified as pertinent in specific conditions elsewhere in this permit. (Ref.: APC-S-6, Section III.C.5.a.,c.,&d.)

4.3 Emission Point AA-012 is subject to the NESHAP for Stationary RICE, 40 CFR Part 63, Subpart ZZZZ. This unit is an existing emergency stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions. An existing stationary spark ignition (SI) RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions must comply with the applicable emission limitations and operating limitations by no later than **October 19, 2013**.(Ref.: 40 CFR 63.6595(a)(1))

SECTION 5. MONITORING, RECORDKEEPING & REPORTING REQUIREMENTS

A. General Monitoring, Recordkeeping and Reporting Requirements

5.A.1 The permittee shall install, maintain, and operate equipment and/or institute procedures as necessary to perform the monitoring and recordkeeping specified below.

5.A.2 In addition to the recordkeeping specified below, the permittee shall include with all records of required monitoring information the following:

(a) the date, place as defined in the permit, and time of sampling or measurements;

(b) the date(s) analyses were performed;

(c) the company or entity that performed 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. (Ref.: APC-S-6, Section III.A.3.b.(1)(a)-(f))

5.A.3 Except where a longer duration is specified in an applicable requirement, the permittee shall retain records of all required monitoring data and support information for a period of at least five (5) years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. (Ref.: APC-S-6, Section III.A.3.b.(2))

5.A.4 Except as otherwise specified herein, the permittee shall submit reports of any required monitoring by July 31 and January 31 for the preceding six-month period. All instances of deviations from permit requirements must be clearly identified in such reports and all required reports must be certified by a responsible official consistent with APC-S-6, Section II.E. (Ref.: APC-S-6, Section III.A.3.c.(1))

5.A.5 Except as otherwise specified herein, the permittee shall report all deviations from permit requirements, including those attributable to upsets, the probable cause of such deviations, and any corrective actions or preventive measures taken. Said report shall be made within five (5) days of the time the deviation began. (Ref.: APC-S-6, Section III.A.3.c.(2))

5.A.6 Except as otherwise specified herein, the permittee shall perform emissions sampling and analysis in accordance with EPA Test Methods and with any continuous emission

monitoring requirements, if applicable. All test methods shall be those versions or their equivalents approved by the DEQ and the EPA.

5.A.7 The permittee shall maintain records of any alterations, additions, or changes in equipment or operation.

B. Specific Monitoring and Recordkeeping Requirements

Emission Point(s)	Pollutant/ Parameter	Monitoring/Recordkeeping Requirement	Condition Number	Applicable Requirement
AA-003 through AA-008	NO_X	Biennial stack testing in accordance with EPA Ref. Method 7 or 7E.	5.B.1	Permit and APC-S-6, Section III.A.3
AA-003	Operating Hours	Monitor and record daily the number of hours operated.	5.B.2	Permit and APC-S-6, Section III.A.3
AA-004 & AA-006 through AA-008	CO	Biennial stack testing in accordance with EPA Ref. Method 10.	5.B.3	Permit and APC-S-6, Section III.A.3
AA-003 through AA-014	Fuel	Monitor and record monthly the type and quantity of natural gas combusted.	5.B.4	Permit and APC-S-6, Section III.A.3
AA-009	Operating Hours	Monitor and record all periods of non-emergency use operation (not including routine testing and maintenance).	5.B.5	Permit and APC-S-6, Section III.A.3
AA-012	Operating Hours	Monitor and record all periods of operation using non-resettable hour meter.	5.B.6	NESHAP Subpart ZZZZ, 40 CFR 63.6640(f)
AA-010	NO_X	Semi-annual emissions testing for NO_X using an approved portable analyzer.	5.B.7	Permit and APC-S-6, Section III.A.3
	CO, VOC, & Formaldehyde	Weekly visual inspection of air pollution control device for leaks, ruptures, cracks, etc. and maintenance of control device.	5.B.8	
	Catalyst Inlet Temperature	Continuously monitor and record the catalyst inlet temperature.	5.B.9	
	CO	Annual performance tests in accordance with ASTM D6522-00 or EPA Reference Methods 3A and 10.	5.B.10	

Emission Point(s)	Pollutant/ Parameter	Monitoring/Recordkeeping Requirement	Condition Number	Applicable Requirement
		Perform performance test upon replacement of the catalyst.	5.B.11	
AA-010	CO and Formaldehyde	Compliance Assurance Monitoring (CAM) Requirements – See Appendix B.	5.B.12	40 CFR 64
AA-011	NO_X	Semi-annual emissions testing for NO_X using an approved portable analyzer.	5.B.7	Permit and APC-S-6, Section III.A.3
	CO, VOC, & Formaldehyde	Weekly visual inspection of air pollution control device for leaks, ruptures, cracks, etc. and maintenance of control device.	5.B.8	
	CO and Formaldehyde	Compliance Assurance Monitoring (CAM) Requirements – See Appendix B.	5.B.13	40 CFR 64
	CO & O_2	Semi-annual/annual performance tests in accordance with ASTM D6522-00 or EPA Reference Methods 3A and 10.	5.B.14	NESHAP Subpart ZZZZ, 40 CFR 63.6615, 63.6620, 63.6640 & Tables 3, 4, & 6.
	Catalyst Inlet Temperature	Continuously monitor the catalyst inlet temperature in accordance with §63.6625(b).	5.B.15	NESHAP Subpart ZZZZ, 40 CFR 63.6640 & Table 6.
	Catalyst Pressure Drop	Monthly monitoring of the pressure drop across the catalyst.	5.B.16	NESHAP Subpart ZZZZ, 40 CFR 63.6640 & Table 6.
	CO, Catalyst Pressure Drop	Perform a performance test and re-establish the value for the pressure differential operating parameter upon change to catalyst.	5.B.17	NESHAP Subpart ZZZZ, 40 CFR 63.6640(b)
AA-013	SO_2& NO_X	Monitor and analyze fuel in accordance with requirements of 40 CFR 60, Subpart GG.	5.B.18	NSPS Subpart GG, 40 CFR 60.332(a)(2)& 60.334(h)(3)
AA-014	Maintenance	For non-certified engines, maintain plan and records of maintenance.	5.B.19	NSPS Subpart JJJJ, 40 CFR 60.4243(b)(2)
	Operating Hours	Monitor and record hours of operation noting periods of maintenance checks and readiness testing, other periods of non-emergency use, and periods of emergency use.	5.B.20	NSPS Subpart JJJJ, 40 CFR 60.4243(d)

5.B.1 For Emission Points AA-003 through AA-008, the permittee is required to perform stack

testing in accordance with EPA Reference Method 7 or 7E to demonstrate compliance with the permitted emission limitations for NO_X. The permittee shall continue demonstrating compliance with the emission limitations by testing on a biennial basis in accordance with the schedule established in previous permit(s). For the purpose of compliance demonstration the permittee shall operate the sources at their maximum capacity.

A pretest conference at least thirty (30) days prior to the scheduled test date(s) is required to ensure that all test methods and procedures are acceptable to the Office of Pollution Control. Also, the Office of Pollution Control must be notified prior to the scheduled test date(s). At least ten (10) days notice should be given so that an observer may be scheduled to witness the test(s).

5.B.2 For Emission Point AA-003, the permittee shall keep records of the hours of operation. These records must be kept in log form and made available for review upon request during any inspection visit by Office of Pollution Control personnel.

5.B.3 For Emission Points AA-004, AA-006, AA-007, and AA-008, the permittee is required to perform stack testing in accordance with EPA Reference Method 10 to demonstrate compliance with the permitted emission limitations for CO. The permittee shall continue demonstrating compliance with the emission limitations by testing on a biennial basisin accordance with the schedule established in previous permit(s). For the purpose of compliance demonstration the permittee shall operate the sources at their maximum capacity.

A pretest conference at least thirty (30) days prior to the scheduled test date(s) is required to ensure that all test methods and procedures are acceptable to the Office of Pollution Control. Also, the Office of Pollution Control must be notified prior to the scheduled test date(s). At least ten (10) days notice should be given so that an observer may be scheduled to witness the test(s).

5.B.4 For Emission Points AA-003 through AA-014, the permittee shall monitor and maintain monthly records of the type and quantity of fuel combusted. These records must be kept in log form and made available for review upon request during any inspection visit by the Office of Pollution Control.

5.B.5 For Emission Point AA-009, the permittee shall monitor and record the hours of operation for non-emergency use (not including hours for routine testing and maintenance). These records must be kept in log form and made available for review upon request during any inspection visit by the Office of Pollution Control.

5.B.6 For Emission Point AA-012, the permittee shall monitor and record the hours of operation using a non-resettable hour meterfor hours spent in emergency operation, including what classified the operation as emergency, and how many hours are spent for non-emergency operation including hours for routine testing and maintenance. These records must be kept

in log form and made available for review upon request during any inspection visit by the Office of Pollution Control. (Ref.: 63.6625(d)/(f)& 63.6640(f)(1))

5.B.7 For Emission Points AA-010 and AA-011, the permittee shall conduct semi-annual monitoring with an approved portable analyzer to ensure compliance with the NO_X limit.

5.B.8 For Emission Points AA-010 and AA-011, the permittee shall perform weekly visual inspections of the air pollution control equipment for leaks, ruptures, cracks, etc. Maintenance shall be performed as necessary to maintain proper operation of the pollution control equipment. Records of weekly inspections and any maintenance work shall be kept in log form and must be made available for review upon request during any inspection visit by the Office of Pollution Control personnel.

The permittee shall maintain on hand at all times sufficient equipment as is necessary to repair and/or overhaul the pollution control equipment. In the event of a failure of the pollution control equipment, the permittee shall cease operations until such time as repairs are made and the proper efficiency of the pollution control equipment is restored.

5.B.9 For Emission Point AA-010, the permittee shall install, calibrate, maintain and operate a system to continuously monitor and record the catalyst inlet temperature in order to ensure compliance with the CO, VOC, and Formaldehyde emission limits. (Ref: APC-S-6, Section III.A.3)

5.B.10 For Emission Point AA-010, the permittee shall conduct annual performance tests to demonstrate compliance with the CO limit. The tests shall be done using a portable analyzer for CO and O_2 in accordance with ASTM D6522-00, or as an option the permittee may use EPA Reference Methods 3A and 10 or another approved equivalent. (Ref: APC-S-6, Section III.A.3)

5.B.11 For Emission Point AA-010, within 180 days of replacement of the catalyst, the permittee must conduct a performance test to ensure compliance with the emission limitation for CO. (Ref.: APC-S-6, Section III.A.3)

5.B.12 For Emission Point AA-010, the permittee shall comply with the Compliance Assurance Monitoring (CAM) requirements as specified in 40 CFR Part 64. The CAM Plans are provided in Appendix B.

5.B.13 For Emission Point AA-011, the permittee shall utilize the monitoring required by 40 CFR Part 63, Subpart ZZZZ as presumptively acceptable monitoring for compliance assurance monitoring (CAM) purposes for CO and formaldehyde in accordance with the CAM Plan provided in Appendix B.

5.B.14 For Emission Point AA-011, the permittee shall conduct semi-annual performance tests to demonstrate compliance with the CO reduction requirement. The tests shall be done using a

portable analyzer for CO and O_2 in accordance with ASTM D6522-00, or as an alternative option the permittee may use EPA Reference Methods 3A and 10. After the permittee has demonstrated compliance for two consecutive tests, the testing frequency may be reduced to annually. If the results of any annual performance tests indicate non-compliance with the CO emission limitation, or the permittee deviates from any operating limitations, the permittee must resume semi-annual testing. (Ref.: 40 CFR 63.6615, 63.6620, 63.6640 & Tables 3, 4, & 6)

5.B.15 For Emission Point AA-011, the permittee shall collect the catalyst inlet temperature data according to 40 CFR 63.6625(b). The permittee shall reduce the data to 4-hour rolling averages and shall maintain the average within the operating limitations for the catalyst inlet temperature. (Ref.: 40 CFR 63.6640 & Table 6)

5.B.16 For Emission Point AA-011, the permittee shall measure the pressure drop across the catalyst once per month to demonstrate that the pressure drop is within the operating limitations established during the performance test. (Ref.: 40 CFR 63.6640 & Table 6)

5.B.17 For Emission Point AA-011, upon a change to the catalyst, the permittee must reestablish the value for the pressure differential operating parameter that was measured during the initial performance test. When the pressure differential value is reestablished, the permittee must also conduct a performance test to demonstrate that the emission limitation. (Ref.: 40 CFR 63.6640(b))

5.B.18 For Emission Point AA-013, the permittee shall monitor and analyze the fuel in accordance with the requirements of 40 CFR 60, Subpart GG (60.332(a)(2) & 60.334(h)(3)) and detailed in Permit Conditions 3.B. These records must be maintained and made available for review upon request during any inspection visit by the Office of Pollution Control.

5.B.19 For Emission Point AA-014, the permittee shall demonstrate compliance for non-certified engines greater than 500 HP by keeping a maintenance plan and records of conducted maintenance and shall, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, the permittee must conduct an initial performance test and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance. (40 CFR 60.4243(b)(2))

5.B.20 For Emission Point AA-014, the permittee shall monitor and record hours of operation noting periods of maintenance checks and readiness testing, other periods of non-emergency use, and periods of emergency useincluding what classified the operation as emergency use.(Ref.: 40 CFR 60.4243(d))

For Emission Point AA-014, stationary SI emergency ICE greater than or equal to 500 HP manufactured on or after July 1, 2010, that do not meet the standards applicable to non-emergency engines, the permittee must keep records of the hours of operation of the engine

recorded using a non-resettable hour meter. (Ref.: 40 CFR 60.4245(a) and (b))

C. Specific Reporting Requirements

5.C.1 The permittee shall submit the written reports of all required stack testing results and all portable analyzer results within thirty (30) days of the date the test is performed.

5.C.2 For Emission Points AA-003through AA-014, the permittee shall submit a summary report of monthly fuel usage including the type and quantity of the fuels used in accordance with paragraph 5.A.4. (Ref: APC-S-6, Section III.A.3)

5.C.3 For Emission Points AA-003, AA-009, AA-012, and AA-014, the permittee shall submit a summary report of hours of operation in accordance with paragraph 5.A.4 to ensure compliance with permit and regulatory limits. (Ref: APC-S-6, Section III.A.3)

5.C.4 For Emission Points AA-010 and AA-011, the permittee shall submit semi-annual reports summarizing each excursion from the CAM Plan and the associated corrective actions. If there were no excursions, a negative declaration should be reported. This data will be reported in accordance with Condition 5.A.4.

5.C.5 For Emission Point AA-011, the permittee shall submit a semi-annual compliance report in accordance with the requirements in 40 CFR 63.6650(b) and Condition 5.A.4. The compliance report shall identify whether or not there were any deviations from the emission limitations or operating limitations, any periods for which the continuous monitoring system was out-of-control, or any start-up, shutdown or malfunction events, during the reporting period. (Ref.: 40 CFR 63.6650 & Table 7)

The permittee shall provide notification by fax or telephone within two (2) working days of any actions taken to address startup, shutdown or malfunction that is inconsistent with your startup, shutdown or malfunction plan. A written notification shall be submitted within seven (7) working days following the end of the event in accordance with the information in 40 CFR 63.10(d)(5)(ii). (Ref.: 40 CFR 63.6650 & Table 7)

5.C.6 For Emission Point AA-014, the permittee shall maintain all notifications submitted to comply with Subpart JJJJ and all documentation supporting any notification.(Ref.: 40 CFR 60.4245(a) and (b))

SECTION 6. ALTERNATIVE OPERATING SCENARIOS

None permitted.

SECTION 7. TITLE VI REQUIREMENTS

The following are applicable or potentially applicable requirements originating from Title VI of the Clean Air Act – Stratospheric Ozone Protection. The full text of the referenced regulations may be found on-line at **http://ecfr.gpoaccess.gov** under Title 40, or DEQ shall provide a copy upon request from the permittee.

7.1 If the permittee produces, transforms, destroys, imports or exports a controlled substance or imports or exports a controlled product, the permittee shall comply with the applicable requirements of 40 CFR Part 82, Subpart A – Production and Consumption Controls.

7.2 If the permittee performs service on a motor vehicle for consideration when this service involves the refrigerant in the motor vehicle air conditioner (MVAC), the permittee shall comply with the applicable requirements of 40 CFR Part 82, Subpart B – Servicing of Motor Vehicle Air Conditioners.

7.3 The permittee shall comply with the applicable requirements of 40 CFR Part 82, Subpart E – The Labeling of Products Using Ozone-Depleting Substances, for the following containers and products:

(a) All containers in which a class I or class II substance is stored or transported;

(b) All products containing a class I substance; and

(c) All products directly manufactured with a process that uses a class I substance, unless otherwise exempted by this subpart or, unless EPA determines for a particular product that there are no substitute products or manufacturing processes for such product that do not rely on the use of a class I substance, that reduce overall risk to human health and the environment, and that are currently or potentially available. If the EPA makes such a determination for a particular product, then the requirements of this subpart are effective for such product no later than January 1, 2015.

7.4 If the permittee performs any of the following activities, the permittee shall comply with the applicable requirements of 40 CFR Part 82, Subpart F – Recycling and Emissions Reduction:

(a) Servicing, maintaining, or repairing appliances;

(b) Disposing of appliances, including small appliances and motor vehicle air conditioners; or

(c) Refrigerant reclaimers, technician certifying programs, appliance owners and operators, manufacturers of appliances, manufacturers of recycling and recovery equipment, approved recycling and recovery equipment testing organizations, persons

selling class I or class II refrigerants or offering class I or class II refrigerants for sale, and persons purchasing class I or class II refrigerants.

7.5 The permittee shall be allowed to switch from any ozone-depleting substance to any acceptable alternative that is listed in the Significant New Alternatives Policy (SNAP) program promulgated pursuant to 40 CFR Part 82, Subpart G – Significant New Alternatives Policy Program. The permittee shall also comply with any use conditions for the acceptable alternative substance.

7.6 If the permittee performs any of the following activities, the permittee shall comply with the applicable requirements of 40 CFR Part 82, Subpart H – Halon Emissions Reduction:

(a) Any person testing, servicing, maintaining, repairing, or disposing of equipment that contains halons or using such equipment during technician training;

(b) Any person disposing of halons;

(c) Manufacturers of halon blends; or

(d) Organizations that employ technicians who service halon-containing equipment.

APPENDIX A

List of Abbreviations Used In this Permit

APC-S-1	Air Emission Regulations for the Prevention, Abatement, and Control of Air Contaminants
APC-S-2	Permit Regulations for the Construction and/or Operation of Air Emissions Equipment
APC-S-3	Regulations for the Prevention of Air Pollution Emergency Episodes
APC-S-4	Ambient Air Quality Standards
APC-S-5	Regulations for the Prevention of Significant Deterioration of Air Quality
APC-S-6	Air Emissions Operating Permit Regulations for the Purposes of Title V of the Federal Clean Air Act
APC-S-7	Acid Rain Program Permit Regulations for Purposes of Title IV of the Federal Clean Air Act
BACT	Best Available Control Technology
CEM	Continuous Emission Monitor
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
CO	Carbon Monoxide
COM	Continuous Opacity Monitor
COMS	Continuous Opacity Monitoring System
DEQ	Mississippi Department of Environmental Quality
EPA	United States Environmental Protection Agency
gr/dscf	Grains Per Dry Standard Cubic Foot
HP	Horsepower
HAP	Hazardous Air Pollutant
lbs/hr	Pounds per Hour
M or K	Thousand
MACT	Maximum Achievable Control Technology
MM	Million
MMBTUH	Million British Thermal Units per Hour
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emissions Standards For Hazardous Air Pollutants, 40 CFR 61 or National Emission Standards For Hazardous Air Pollutants for Source Categories, 40 CFR 63
NMVOC	Non-Methane Volatile Organic Compounds
NO_x	Nitrogen Oxides
NSPS	New Source Performance Standards, 40 CFR 60
O&M	Operation and Maintenance
PM	Particulate Matter
PM_{10}	Particulate Matter less than 10 Fm in diameter
ppm	Parts per Million
PSD	Prevention of Significant Deterioration, 40 CFR 52
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
TPY	Tons per Year
TRS	Total Reduced Sulfur
VEE	Visible Emissions Evaluation
VHAP	Volatile Hazardous Air Pollutant
VOC	Volatile Organic Compound

APPENDIX B

COMPLIANCE ASSURANCE MONITORING (CAM) PLANS

FOR AA-010 AND AA-011

CAM PLAN FOR AA-010

Introduction

The Compliance Assurance Monitoring (CAM) regulations, whose guidelines are established in 40 CFR §64, were promulgated on November 21, 1997. CAM is required for units using control devices "to provide reasonable assurance of compliance with applicable requirements under the Clean Air Act for large emissions units that rely on pollution control devices to achieve compliance."[1] The CAM rule requires owners and operators to maintain their control devices at levels that assure compliance, to design CAM plans around current requirements and operating practices, and to select representative parameters upon which compliance can be assured. The CAM plan establishes indicator ranges or procedures for setting the indicator ranges, uses performance testing and other information to verify the parameters and ranges, and seeks to correct control device performance problems as expeditiously as possible.

This document presents the results of a CAM applicability study performed for Southern Natural Gas Company's (SNG) Enterprise Compressor Station located in Enterprise, Mississippi, in Clarke County. Each source at Enterprise Compressor station is assessed for applicability to CAM. This report presents a brief summary of the CAM rule, a discussion of applicability rationale with respect to emission sources at the Enterprise Compressor Station, and a CAM plan submittal for the affected source.

1.1 CAM Summary

Under the CAM regulations at 40 CFR §64, facilities are required to prepare and submit monitoring plans for certain emissions units with the initial or renewal Title V Operating Permit application. The CAM Plans are intended to provide an on-going and reasonable assurance of compliance with emission limits. Under the general applicability criteria, this regulation only applies to emission units that use a control device to achieve compliance with an emission limit and whose pre-controlled emission levels exceed the major source thresholds under the Title V Operating Program. For a subject unit whose post-controlled emissions also exceed the major source threshold, a CAM plan is required to be submitted with the initial Title V Operating Permit application. For a subject unit whose post-control emissions are less than the major source threshold, a CAM plan does not have to be submitted until the first renewal application.

Exemptions to CAM requirements are as follows:[2]

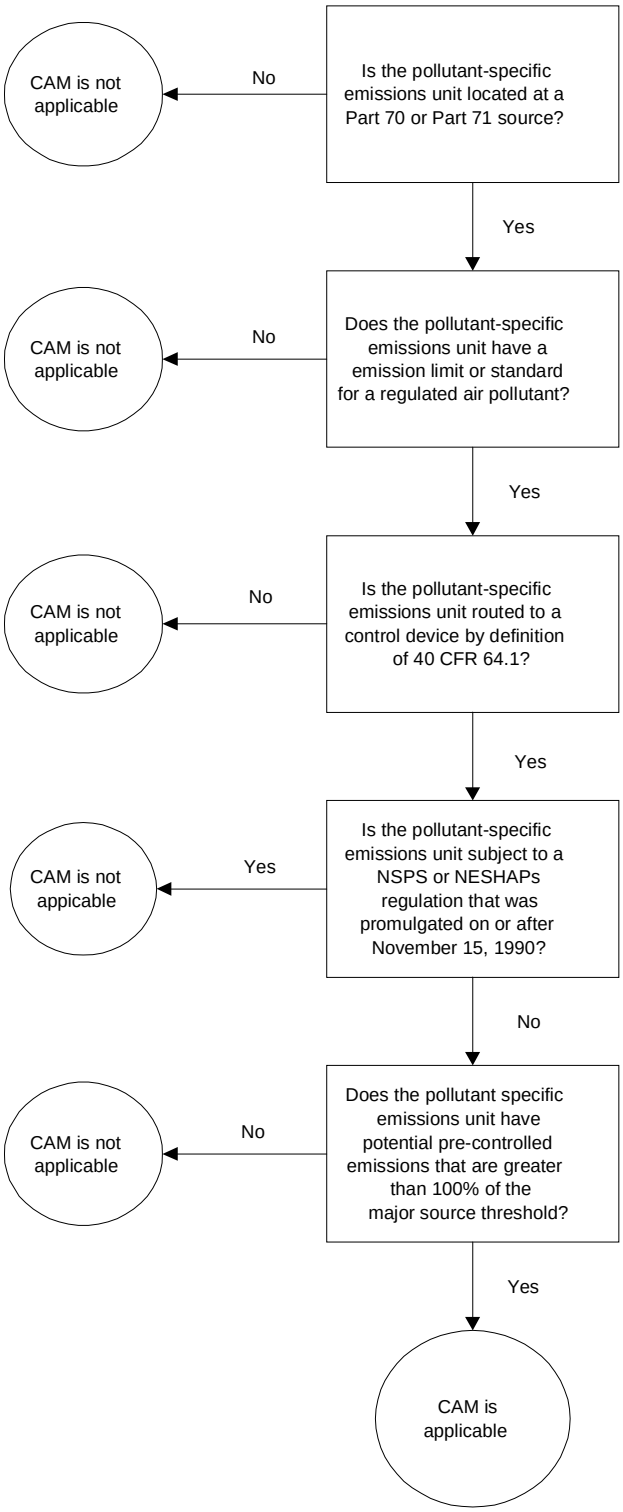
- Any Pollutant-Specific Emissions Unit (PSEU) that is subject to a New Source Performance Standard (NSPS) or a National Emission Standard for Hazardous Air Pollutants (NESHAP) that was promulgated after November 15, 1990. These standards are designed with monitoring that provides a reasonable assurance of compliance.
- Any PSEU that is subject to the stratospheric ozone protection requirements, acid rain program requirements, or other emissions limitations or standards that apply solely under an emission trading program or an emission cap.

[1] CAM Technical Guidance Document, August 1998.
[2] 40 CFR §64.2(b).

- Any PSEU whose emission limitations or standards specify a continuous compliance determination method unless this applicable emission reduction factor includes an assumed control device emission reduction factor that could be affected by the actual operation and maintenance of the control device.
- Certain municipally-owned utility units that
- Are exempt from all monitoring requirements,
- Produce electricity during periods of peak electrical demand or emergency situations since these periods or situations are infrequent, and
- Have actual emissions from the utility unit based on the average annual emissions over the last three years of operation that are less than 50 percent of the amount in tpy required for a source to be classified as a major source.

A flow chart that can be used to determine applicability to CAM is provided in Figure B-1.

FIGURE B-1. CAM APPLICABILITY FLOWCHART



1.2 CAM Applicability

This section describes the applicability of CAM requirements for Emission Point AA-010 at SNG's Enterprise Compressor Station. The facility currently operates under Title V Operating Permit No. 0440-00048 issued on October 15, 2003. Table 1 identifies applicable emission limits or standards for Emission Point AA-010 which is a 4,730 hp, 4-stroke, lean-burn, reciprocating internal combustion engines (RICE) that employs the use of an oxidation catalyst as an active control device to abate emissions of carbon monoxide (CO), Volatile Organic Compounds (VOC), and Hazardous Air Pollutants (HAP) including formaldehyde (HCHO).

TABLE 1. APPLICABLE EMISSION LIMITS OR STANDARDS

Emission Point ID	Facility Reference Number	Pollutant	Emission Limit or Standard
AA-010	001C-14	CO	3.65 lb/hr; 16.00 TPY
		VOC	4.43 lb/hr; 19.41 TPY
		HCHO	1.14 lb/hr; 4.98 TPY
		NOx	7.3 lb/hr; 31.97 TPY

On June 15, 2004 the final NESHAP rule for RICE was published in the Federal Register. This final rule does not apply to Emission PointAA-010 since it is considered an existing 4-stroke lean-burn engine[3].

To assess the applicability of CAM requirements, Engine AA-010 is assessed on a pollutant-by-pollutant basis to quantify the pre-control and post-control emissions controlled by the oxidation catalyst on each engine. The emissions presented in Table 2 are based upon manufacturer's specifications/guarantees and engineering judgment as presented in the permit applications for the engine.Note that because the oxidation catalyst is not designed to control NO_X emissions, the engine is not considered a PSEU for NO_X and CAM is presumptively determined not to apply.

TABLE 2. COMPRESSOR ENGINE PSEU EMISSIONS CONTROL ANALYSIS

Pollutant	Major Source Threshold (tons per year)	Pre-Control Emissions (tons per year)	Post-Control Emissions (tons per year)
CO	100	114.2	16.00
VOC	100	22.8	19.41
HCHO	10	18.3	4.98

As shown in Table 2, the pre-control emissions of VOC are below the major source threshold, and the pre-controlled CO and HCHO emissions are above the major source thresholds. Because the post-

[3] With respect to the RICE NESHAP, Engines 001C-014 is considered an existing unit as a commitment to a program of continuous construction and permit application were in place and the engine was installed prior to the regulatory deadline of December 19, 2002.

control emissions of CO and HCHO are below the major source thresholds, the compressor engine is determined to be an affected small-PSEU for CO and HCHO subject to CAM requirements. Accordingly, SNG is required to submit its CAM plan for this engine with the initial Title V renewal application that was submitted in September 2003.

In response to the letters dated July 15, 2004 and October 1, 2004 from Mississippi Department of Environmental Quality (MDEQ), the following sections contain the updated CAM plan for Emission Point AA-010 for CO and HCHO.

COMPLIANCE ASSURANCE MONITORING PLAN
SOUTHERN NATURAL GAS COMPANY - ENTERPRISE COMPRESSOR STATION

I. BACKGROUND

1. EMISSION UNIT

Description: 4,730 hp Caterpillar G3616 Compressor Engine

Identification: Facility Reference Number 001C-014, Emission Point AA-010

Facility: SNG's Enterprise Compressor Station, Clarke County, Mississippi

2. APPLICABLE REGULATIONS, EMISSIONS LIMITS, AND MONITORING REQUIREMENTS

Regulation/ Emission Limit: Mississippi Title V Operating Permit No. 0440-00048
3.65 lb/hr of CO and 1.14 lb/hrof HCHO

Current Monitoring Requirements: Oxidation catalyst inlet temperature continuous monitoring of the oxidation catalyst inlet temperature (in degrees Fahrenheit) and monthly monitoring of pressure drop across the catalyst (in inches of H_20).

3. CONTROL TECHNOLOGY

An oxidation catalyst has been utilized since the engine commenced operation. Due to ongoing maintenance issues and operating costs associated with the existing catalyst, a new Mueller oxidation catalyst system was installed to replace the existing catalyst. This installation was performed during the week of October 24, 2005. The catalyst system included the complete replacement of the duct work and exhaust stack (with identical stack parameters) that exits the Unit 14 (AA-0010) compressor building. The new catalyst will be setup with thermocouples and pressure transmitters to continuously measure inlet temperature and monthly monitor the differential pressure across the catalyst.

II. MONITORING APPROACH

The key elements of the monitoring approach, including the indicators to be monitored, indicator ranges, and performance criteria are presented in the following table.

TABLE 3. COMPRESSOR ENGINE AA-010
CAM SUMMARY – OXIDATION CATALYST INLET TEMPERATURE

Indicator	
Parameter	Oxidation Catalyst Inlet Temperature (º F).
Measurement Approach	The inlet temperature to the oxidation catalyst is continuously monitored using a thermocouple.
Indicator Range	
Parameter Range	Oxidation Catalyst Inlet Temperature Range of 450º F – 1,350º F at all loads.
Performance Criteria	
Data Representativeness	The inlet catalyst temperature monitoring device is a K-type thermocouple or an equivalent type capable of measuring catalyst inlet temperature. The thermocouple is Pyromation Model K49U-009-00-15-H1A048-3I-Q1 or an equivalent model capable of measuring catalyst inlet temperature. The inlet catalyst temperature monitoring device is installed upstream of the catalyst. SNG is confident that this placement, provides catalyst inlet temperature readings that are representative of actual exhaust temperature entering the catalyst element.
Verification of Operational Status	The inlet temperature monitors have already been installed. Please see Data Representative Section above for more information.
QA/QC Practices and Criteria	Annual inspections of the thermocouples will be performed and the thermocouples will be replaced if necessary. Because inlet temperature is being measured continuously while the engine is operating, any thermocouple failure during engine operation will be an automatic indicator triggering the engine alarm and/or engine shutdown settings noted below. Inspection and replacement (if necessary) rather than calibration was determined to be a more practical and cost effective approach. Based on discussions with the thermocouple manufacturer, the cost of replacing thermocouples compared to the cost of calibration checks, which may require a need for replacement, is such that equipment replacement is much more feasible than calibration checks[4].

[4]It is important to note that thermocouples cannot be calibrated. A calibration check can be performed, however, if this check shows that the equipment is out of calibration, the thermocouple must be replaced.

	SNG will establish alarm and shutdown limits that prevent the engine from operating below 450^{O}F and above 1350^{O}F as follows: • Lower limit alarm set-point: 500 ^{O}F • Lower limit shutdown set-point: 475 ^{O}F • Upper limit alarm set-point: 1300 ^{O}F • Upper limit shut-down set-point: 1325 ^{O}F
Monitoring Frequency and Data Collection Procedures	SNG proposes the following for the oxidation catalyst inlet temperature per the RICE MACT (40 CFR 63.6640a and Table 6): • Continuous monitoring of the catalyst inlet temperature using a thermocouple. • Calculate 4-hour rolling average of the inlet temperature, and maintain it within the catalyst inlet temperature range of 450^{O}F – 1350^{O}F at all loads.
Recordkeeping	As required by the Mississippi DEQ Construction Permit No. 0440-00048, weekly visual inspections of the oxidation catalyst will be conducted to inspect for leaks, ruptures, cracks, etc. Maintenance is also required to maintain proper operation of the control equipment. Records will be kept of the weekly visual inspections and of any required maintenance.

TABLE 4. COMPRESSOR ENGINE AA-010
CAM SUMMARY – OXIDATION CATALYST PRESSURE DROP

Indicator	
Parameter	Pressure Drop across Oxidation Catalyst (inches of H_20).
Measurement Approach	Pressure Drop across Oxidation Catalyst is monitored and recorded once per calendar month at 100% +/- 10% load.
Indicator Range	
Parameter Range	Less than or equal to 12 inches of H_20
Performance Criteria	
Data Representativeness	The pre- and post-catalyst pressure devices will be installed upstream and downstream of the catalyst. The differential pressure transmitter will be mounted below the catalyst with a collection bottle to capture liquid condensation from the transmitter's associated tubing lines.SNG is confident that the measurement device being used, in conjunction with this placement, provides catalyst differential pressure readings that are representative of actual differential pressure across the catalyst element.
Verification of Operational Status	Being that this measurement is not intended to be recorded on a continuous basis, no ongoing action is required. Prior to each measurement reading, however, facility personnel will verify that the measurement devices and associated automation equipment is functioning properly and that no erroneous readings are taken.
QA/QC Practices and Criteria	In order to ensure accurate measurement, SNG will verify the calibration of the differential pressure transmitters twice per calendar year. SNG is confident that the inherent accuracy of the pressure transmitters in conjunction with biannual calibration will ensure a measurement accuracy needed for guaranteeing operation below the proposed differential pressure limit.
Monitoring Frequency and Data Collection Procedures	SNG proposes the following monitoring requirements for pressure drop across the catalyst per the RICE MACT (40 CFR 63.6640a and Table 6): • Monthly monitoring of pressure drop across the catalyst at 100% +/- 10% load. • Maintain monthly pressure drop across the catalyst within 12 inches of water.
Recordkeeping	As required by the Mississippi DEQ Construction Permit No. 0440-00048, weekly visual inspections of the oxidation catalyst will be conducted to inspect for leaks, ruptures, cracks, etc. Maintenance is also required to maintain proper operation of the control equipment. Records will be kept of the weekly visual inspections and of any required maintenance.

III. JUSTIFICATION

1. Background

The Emission Point AA-010 is a 4,730 horsepower (hp), 4-stroke, lean burn, reciprocating internal combustion engine that fires only pipeline-quality natural gas. This engine is considered an "existing source" and is not subject to any NESHAP [5] or NSPS standards promulgated after November 15, 1990. The unit operates throughout the year at or near full capacity. This unit is not a "large" CAM source as post-controlled CO and HCHO emissions do not exceed the Title V major source threshold of 100 tpy and 10 tpy, respectively. Thus, continuous monitoring is not required for CO or HCHO.

2. Rationale for Performance Indicators Selection

Inlet Temperature to Oxidation Catalyst

An oxidation catalyst facilitates the breakdown of excess O_2 molecules in the exhaust stream. The resulting oxygen atoms are subsequently available to bond with the CO molecules in the exhaust stream to form CO_2, thereby reducing the CO levels in the exhaust. Breakdown of O_2 molecules results also in reduction of HCHO. The catalyst supplier has stated that:

"The oxidation of formaldehyde in this application tracks the curve for CO closely."

The two most important variables to consider when examining catalyst performance are the catalyst inlet temperature and O_2 concentration. Due to the design characteristic of the Caterpillar G3616 engine, significant excess air is required for proper operation and the engine will always operate well above of the 4% O_2 required by the catalyst for the oxidation process. Therefore, the oxidation catalyst inlet temperature is the only key parameter that needs to be monitored to ensure the proper operation and reduction efficiency of the oxidation catalyst.

Since the HCHO emission reduction is closely related to CO emissions, the catalyst inlet temperature serves as a reliable means of monitoring compliance with CO and HCHO emission limits.By meeting the proposed indicator range levels for the oxidation catalyst inlet temperature, reasonable assurances can be provided that the control device is working properly and the emission unit will not exceed the relevant limits.

Pressure Drop across Oxidation Catalyst

Pressure drop across the oxidation catalyst element is one indicator of the health of the oxidation catalyst element. Excessive pressure drop across the catalyst is the result of accumulation of particulates from lube oil ash, oil carryover, and /or other products of combustion. The accumulation of these deposits can limit the oxidation catalysts ability to effectively destroy CO, HCHO, and VOC. With this in mind, SNG will monitor, on a monthly basis, the differential pressure across the oxidation catalyst as one indicator of catalyst health.

[5] With respect to the RICE NESHAP, engine AA-010 is considered an existing unit as a commitment to a program of continuous construction and permit application were in place prior to the regulatory deadline of December 19, 2002.

3. Rationale for Indicator Range Selection

Oxidation Catalyst Inlet Temperature

SNG is proposing an oxidation catalyst inlet temperature range of $450^{O}F$ – $1350^{O}F$, to be monitored and recorded continuously as per the Title V operating permit. The lower end of this range, $450^{O}F$, was set to ensure destruction efficiency of CO, HCHO, and VOC as stipulated in the Title V operating permit. During the design of the exhaust system, the supplier of the oxidation catalyst sized the element based on the engine manufacturer's guaranteed emission outputs and expected exhaust flows at varying load conditions. This design, as specified in the manufacturer's literature and as demonstrated in the attached performance curves (Attachment A) supplied by the manufacturer, show sufficient destruction of CO, HCHO, and VOCs, at all operating conditions, down to a catalyst inlet temperature of $450^{O}F$. The upper end of this range, $1350^{O}F$, is set only to ensure the safety of the oxidation catalyst element. At temperatures above $1350^{O}F$, the catalyst begins to loose efficiency due to thermal damage to the element.

Pressure Drop across Oxidation Catalyst

SNG is proposing a maximum pressure drop across the oxidation catalyst of 12 in H_2O, to be monitored on a monthly basis at engine loads of 100% +/- 10%. If during the course of a calendar month, the engine does not operate within this window, no differential pressure measurement will be taken. A maximum differential pressure of 12 in H_2O is a manufacturer supplied performance criteria that should not be exceeded. As stipulated by the catalyst supplier, operating the catalyst at differential pressures below 12 in H_2O ensures that the catalyst element is not congested with particles of lube oil ash, oil carryover, or other products of combustion.

Please note thatsince the Emission Point AA-010 is not a "large" CAM source (as post-controlled CO and HCHO emissions are less than the Title V major source thresholds), continuous monitoring is not required for CO or HCHO for CAM purposes. However, since SNG will *continuously* monitor and record the oxidation catalyst inlet temperature range of $450^{O}F$ – $1350^{O}F$ (along with monthly pressure drop monitoring), SNG is confident that the CO and Formaldehyde limits will easily be met and therefore, periodic testing of CO is not being proposed.

IV. IMPLEMENTATION/TEST PLAN

1. Implementation Plan

Inlet Temperature to Oxidation Catalyst

No implementation plan is necessary. The infrastructure to monitor the inlet temperature to the oxidation catalyst is already in place. SNG has established a data collection and recording scheme which facilitates the measurement and recording of this parameter and provides hourly averages. A printout of the recorded parameter is generated on a daily basis. A routine maintenance schedule is also in place.

Since Permit No. 0440-00048 requires continuous monitoring and recording of this parameter and the parameter is actually logged on an hourly basis, SNG proposes to define variation as a 4-hour rolling average being outside the established temperature range to be consistent with the RICE MACT requirements.

The RICE MACT (40 CFR 63.6640(a) and Table 6) requires that the 4-hour rolling average be used to

demonstrate compliance with the catalyst inlet temperature range at all loads, and if the 4-hour rolling average is outside the range, then it is identified as an excursion. EPA based this averaging time on the total time required to perform a reference method emission compliance test (3 1-hour test runs plus transition time of 1 hour in-between). As such, SNG proposes aligning the CAM plan "variation or excursion" with that of the RICE MACT by changing the 3-hour rolling average to 4-hour rolling average.

Catalyst inlet temperature alarms and shutdowns will be set as follows for the proposed temperature range (450^0F – 1350^0F):

- Lower limit alarm set-point: 500 ^{O}F
- Lower limit shutdown set-point: 475 ^{O}F
- Upper limit alarm set-point: 1300 ^{O}F
- Upper limit shut-down set-point: 1325 ^{O}F

SNG is confident these measures will prevent the operation of the unit outside of the specified range. By implementing a unit alarm prior to exceeding the temperature range, time is provided to make changes to the operating scenario. If, however, these changes are not successful in reducing/increasing the catalyst inlet temperature, the unit will be shutdown prior to exceeding the range.

Pressure Drop across Oxidation Catalyst

In order to implement the pressure drop measurement, SNG has installed differential pressure measurement equipment outlined in the sections above for the new Mueller oxidation catalyst system. Once installed, the equipment will receive an initial calibration to ensure proper operation within 180 days of approval of the Title V renewal permit as specified under 40 CFR 64.4(e).

Once per calendar month, a differential pressure reading, across the oxidation catalyst, will be taken. A reading will only be taken when the unit is operating at a load of 100% +/- 10%. If the engine does not operate for at least 4-hours at 100% load +/- 10%, during a calendar month, then no differential pressure measurement will be recorded for that month.

Records of the monthly differential pressure readings will be acquired and retained at the facility for a period of at least 5 years. These records will include, at a minimum, the date of the differential pressure reading, the operational load of the engine during the reading, and the differential pressure measurement. Records of the calibration activities for the differential pressure measurement devices will also be maintained at the facility for a period of no less than 5 years.

If a monthly differential pressure reading is determined to be above the specified maximum of 12 in H_2O, the source of the elevated reading will be investigated in a timely fashion. If the source of the elevated reading cannot be determined, or if it is determined that the oxidation catalyst is congested with lube oil ash, oil carryover, or other products of combustion, the engine will be shutdown and the oxidation catalyst will be cleaned or replaced accordingly.

2. Test Plan

Inlet Temperature to Oxidation Catalyst

SNG will continue to monitor the inlet temperature to the oxidation catalyst continuously as required by the current operating permit. A routine maintenance schedule will be followed.

Pressure Drop across Oxidation Catalyst

The infrastructure to monitor the pressure drop across the catalyst has been installed with the new Mueller catalyst system and monitoring will commence within 180 days after approval of the Title V renewal permit in accordance with 40 CFR 64.4(e). It was previously stated that the pressure drop monitor will be installed by the end of March 2005, and the monthly monitoring will begin from April 2005. It was originally planned to install pressure drop transmitters to roughly coincide with the original schedule for the catalyst replacement scheduled around late first or second quarter 2005. Due to various operational issues associated with the SNG system, the date of the catalyst replacement was delayed until October 24. A routine maintenance schedule is also in place.

CAM PLAN FOR AA-011

CAM Applicability For Emission Point AA-011

This section describes the applicability of CAM requirements for Emission Point AA-011 at SNG's Enterprise Compressor Station. The facility currently operates under Title V Operating Permit No. 0440-00048 issued on October 15, 2003. Table 1 identifies applicable emission limits or standards for Emission Point AA-011 which is a 4,730 hp, 4-stroke, lean-burn, Reciprocating Internal Combustion Engine (RICE) that employs the use of an oxidation catalyst as an active control device to abate emissions of carbon monoxide (CO), Volatile Organic Compounds (VOC), and Hazardous Air Pollutants (HAP) including formaldehyde (HCHO).

Table 1. Applicable Emission Limits or Standards

Emission Point ID	Facility Reference Number	Pollutant	Emission Limit or Standard	Permit Condition
AA-011	001C-15	CO	3.65 lb/hr; 16.00 TPY	3.B.8
		VOC	4.43 lb/hr; 19.41 TPY	3.B.8
		HCHO	1.14 lb/hr; 4.98 TPY	3.B.8
		NOx	7.3 lb/hr; 31.97 TPY	3.B.8

To assess the applicability of CAM requirements, Engine AA-011 is assessed on a pollutant-by-pollutant basis to quantify the pre-control and post-control emissions controlled by the oxidation catalyst on each engine. The emissions presented in Table 2 are based upon manufacturer's specifications/guarantees and engineering judgment as presented in the permit applications for the engine. Note that because the oxidation catalyst is not designed to control NO_X emissions, the engine is not considered a PSEU for NO_X and CAM is presumptively determined not to apply.

Table 2. Compressor Engine PSEU Emissions Control Analysis

Pollutant	Major Source Threshold (tons per year)	Pre-Control Emissions (tons per year)	Post-Control Emissions (tons per year)
CO	100	114.2	16.00
VOC	100	22.8	19.41
HCHO	10	18.3	4.98

As shown in Table 2, the pre-control emissions of VOC are below the major source threshold, and the pre-controlled CO and HCHO emissions are above the major source thresholds. Because the post-control emissions of CO and HCHO are below the major source thresholds, the compressor engine is determined to be an affected small-PSEU for CO and HCHO subject to CAM requirements.

In response to the Mississippi Department of Environmental Quality (MDEQ) letters dated July 15, 2004 and October 1, 2004, this submittal outlines "Presumptively Acceptable Monitoring" to satisfy CAM requirements for Emission Point AA-011 for CO and HCHO.

RICE MACT (40 CFR 63, Subpart ZZZZ) Applicability

On June 15, 2004, the final NESHAP rules for RICE were published in the Federal Register. These final rules do apply to Emission Point AA-011 since it is considered a new 4-stroke lean-burn (4SLB) engine[1].

Compliance with RICE MACT and PSD Emission Limits

The RICE MACT (40 CFR 63.6600(b) & Table 2a) requires 93% reduction of Carbon Monoxide (CO) across the catalyst bed at 100% load ±10% *OR* 14 ppmvd Formaldehyde at 15% O2 at 100% load ±10%. CO can be used as a surrogate to demonstrate compliance with formaldehyde. In other words, if the CO limit option (93% reduction) is met, it is assumed that the formaldehyde limit is already complied with.

SNG proposes to comply with the CO limit option. The uncontrolled emission rate (pre-catalyst) for CO for the Emission Point AA-011 is 26.07 lb/hr (2.5 grams/hp-hr). For RICE MACT purposes, SNG proposes to meet the post-catalyst emission rate of 1.83 lb/hr (93% reduction from 2.5 grams/hp-hr). However, for the PSD purposes, the CO emission limit is specified as 3.65 lb/hr in the Title V permit. So, compliance with the RICE MACT CO limit of 1.83 lb/hr will automatically ensure compliance with the PSD CO limit of 3.65 lb/hr.

Monitoring Approach

SNG proposes the following monitoring requirements per the RICE MACT to satisfy the CAM requirements for the Emission Point AA-011 which is a 4SLB engine:

- Continuous monitoring of the catalyst inlet temperature (63.6625(b) & Table 5).
- Calculate 4-hour rolling average of the catalyst inlet temperature, and maintain it within the catalyst inlet temperature range of 450^{O}F – 1350^{O}F at all loads (63.6600(b) & Table 2b, 63.6640(a) & Table 6).
- Monthly monitoring of pressure drop across the catalyst at 100% +/- 10% load (63.6640(a) & Table 6).
- Maintain monthly pressure drop measurements across the catalyst within 2 inches of water from the pressure drop across the catalyst that was measured during the initial performance test (63.6600(b) & Table 2b).
- Semi-annual performance testing for CO reduction (after two consecutive tests demonstrate compliance, the frequency of subsequent performance tests may be reduced to annually).

Reporting and Recordkeeping

SNG proposes the following Reporting and Recordkeeping requirements per the RICE MACT for the Emission Point AA-011 to satisfy the CAM requirements:

- Startup, Shutdown, Malfunction (SSM) Requirements in accordance with 63.6(e), 63.6640(c) and 63.6655(a)(2).

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[1] With respect to the RICE NESHAP, Engines 001C-014 is considered an existing unit as a commitment to a program of continuous construction and permit application were in place and the engine was installed after the regulatory deadline of December 19, 2002.

- Reporting and Notification Requirements as follows:
  - Initial Notification of MACT Applicability (63.6645(b)-(c) & 63.9(b)(2))
  - Notification of Actual Startup Date (63.9(b)(4)(v) & 63.9(b)(5)(ii))
  - Notification of Compliance Status Report (63.6645(f) & 63.9(h)(2)(ii))
  - Semi-Annual Compliance Report, including SSM Report (63.6650(b) & Table 7 & 63.10(d)(5)(i))
  - Immediate SSM Report (for actions not consistent with SSM Plan) (Table 7 63.6(e)(3)(iv); 63.10(d)(5)(ii))

- Recordkeeping Requirements as follows:
  - MACT applicability determinations, including supporting data – Keep this record on-site for 5 years (63.10(b)(3))
  - Copies of all notifications & reports & supporting information (63.6655(a)(1))
  - Site-specific test plans for performance tests and Catalyst Inlet Temperature Continuous Monitoring System performance evaluations (63.6655(a)(1) & 63.10(c)(14))
  - Performance test results and Catalyst Inlet Temperature Continuous Monitoring System performance evaluation test results (63.6655(a)(3))
  - Records of Inlet temperature data to catalyst, Inlet temperature data reduced to 4-hour rolling averages and Monthly pressure drop data (63.6655(d) & 63.10(b)(2)(vii)& Table 6)
  - Records of occurrence & duration of each SSM for the engine and each malfunction of oxidation catalyst and Catalyst Inlet Temperature Continuous Monitoring System; Records of actions during SSM (Checklists if consistent with SSMP, Immediate reports if inconsistent actions) and SSM Plan (including all revisions and previous versions) (63.6655(a)(2) & 63.6(e)(3)(iii)-(v))
  - Records of maintenance performed on oxidation catalyst & Catalyst Inlet Temperature Continuous Monitoring equipment (63.10(b)(2)(iii))
  - Operation & maintenance records to document general duty to minimize emissions at all times, including SSM (63.6(e)(1))
  - Engine operating time (63.10(c)(13))
  - Performance evaluation records, including test plan & procedures adopted per 63.8(d). Results of performance evaluations, and calibration checks (63.6655(b) & 63.10(c)(14) & 63.10(b)(2)(vii)-(x))
  - Documentation for periods of maintenance, malfunction, in operation, and out-of-control periods (63.10(b)(2) & 63.10(c))
  - Data from Catalyst Inlet Temperature Continuous Monitoring System, including raw data, 4-hour rolling averages, & "deviations" (63.10(b)(2)(vii), 63.10(c)(7)-(8))
  - Records of all adjustments & maintenance performed on the Catalyst Inlet Temperature Continuous Monitoring System (63.10(b)(2)(xi))

All records will be kept for at least 5 years (for at least first 2 years records will be accessible on-site in hard copy or electronic form).