



west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone (304) 926-0475 • FAX: (304) 926-0479

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: R13-3101
Plant ID No.: 021-00023
Applicant: Noble Energy, Inc.
Facility Name: Normatown1 (NORM1) Production Facility
Location: Gilmer County
NAICS Code: 211111
Application Type: Construction
Received Date: July 5, 2013
Engineer Assigned: Jill Harris
Fee Amount: \$2,000.00
Date Received: July 16, 2013
Complete Date: July 23, 2013
Due Date: October 21, 2013
Applicant Ad Date: July 11, 2013
Newspaper: *The Glenville Democrat & Pathfinder*
UTM's: Easting: 504.773 km Northing: 4,299.769 km Zone:
17
Description: Noble Energy, Inc. (Noble) is proposing to construct an oil and natural gas production facility at the Normantown1 (NORM1) well pad. The well pad consists of six (6) natural gas wells, six (6) gas production units (GPUs) and heaters, six (6) condensate storage tanks, two (2) produced water tanks, two (2) truck loadouts, one (1) low pressure separator, one (1) flash gas compressor engine, one (1) vapor combustor, and one (1) natural gas-fired pilot to ensure constant flame for the combustion.

DESCRIPTION OF PROCESS

The Normantown1 facility is an oil and natural gas production facility. Condensate, gas and water come from six (6) natural gas wells to six (6) gas production units (4S-GPU 1-6), where the first separation occurs. The gas from GPUs will exit the facility via a gas

sales pipeline. Liquids (condensate and produced water from the GPUs are sent to a low pressure separator (5S-LP) where the flash will be compressed to a higher pressure by one (1) natural gas compressor, and then exit the facility via the gas sales pipeline. The flash gas compressor is powered by one (1) four-stroke, rich-burn, 95 horsepower Caterpillar G3304 NA compressor engine (3S-ENG), which is equipped with a NSCR catalyst (2C-NSCR) to control exhaust emissions that include NOx, VOCs and Formaldehyde. Produced water from the separators flows into two (2) 400 bbl produced water storage tanks (2S-TK7-8). Condensate from the low pressure separator flows to six (6) 400 bbl condensate storage tanks (1S-TK1-6). Condensate and produced water are transported off-site via tanker truck (6S-TL1 And 7S-TL2). Working, breathing and flash emissions from the condensate and produced water storage tanks will be routed to a vapor combustor (8S-COMB) with at least 98% control efficiency of VOCs and HAPs. The vapor combustor will have a natural gas-fired pilot (9S-Pilot).

The production estimate of 100 barrels per day condensate, and 200 barrels per day produced water annual average is based on a similar production type well site in Marshall County that includes three (3) Marcellus well pads.

SITE INSPECTION

Doug Hammell, from DAQ's Enforcement Section, inspected the site on August 29, 2013. The drilling rig was in operation at the time of inspection. The site is ~330 ft to the closest house and ~0.37 miles from Normantown Elementary School. The school could not be seen from the rig operation. From the school site, only the hillside could be seen.



ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions from the NORM1 well pad consist of six (6) natural gas wells, six (6) gas production units and heaters, six (6) condensate storage tanks, three (3) produced water tanks, two (2) truck loadouts, one (1) low pressure separator, one (1) flash gas compressor engine, one (1) vapor combustor and (1) natural gas-fired pilot to ensure constant flame for the combustion. The following table indicates the methodology used in the emissions determination:

Emission Unit ID#	Process Equipment	Calculation Methodology
4S-GPU1, 4S-GPU2, 4S-GPU3, 4S-GPU4, 4S-GPU5, 4S-GPU6, 5S-LP	Natural Gas Fired Boiler/Line Heater	AP-42, Table 1.4.1, -2, -3, Emission Factors for NO _x , CO, Criteria Pollutants, Greenhouse Gases, Speciated Organic Compounds from Natural Gas Combustion
3S-ENG	Natural Gas Compressor/Generator Engine	Manufacturer's Data & AP-42, Table 3.2.3, Emission Factors for 4-Stroke Rich-Burn Engines
6S-TL1 7S-TL2	Produced Water & Condensate Loadout	AP-42, Section 5, Emission Factors for petroleum Liquid Loading Losses
8S-Comb	6-Condensate Tanks (1S-TK1-6), 2-Produced Water Tanks (2S-TK7-8), Flare System (non-assisted)	Tanks 4.0.9.d (working & breathing losses), Aspen HYSYS (flashing losses) See Summary for more details.
Fugitive Emissions	Loading/Unloading Operations, Equipment Leaks	Emission Factors from TCEQ/Chemical Section/NSR Division Memo 2/13/96

Tank Emission Summary: The facility has not constructed a site in West Virginia. The facility proposes to analyze condensate at the process unit, at the low pressure separator, and in the tanks after startup. For this application, the facility used a representative sample from a Marcellus well. Aspen Technology computer model HYSYS was used to simulate the condensate composition at the process unit separator (250 psig), and at the low pressure separator, to the atmospheric tanks. The model used 532 barrels per day (bpd), and estimated 268 pounds per hour (lb/hr) VOC. For this permit, Noble is assuming 100 bpd annual average for condensate, and 200 bpd annual average for produced water. For the calculations, Noble calculated the pounds per hour, per barrel (lb/hr/bbl) VOCs, and then used that factor to calculate emissions at the Normantown1 production rates. Working and breathing emissions were estimated using EPA TANKS 4.0.9d. HYSYS flash emissions analysis was used for flashing emissions. For produced water, Noble assumed 1% condensate, and estimated the VOC emission based on the flashing, working and breathing of 1% of the produced water.

Noble Energy – Normantown1 (NORM1) Production Facility (R13-3101)

Emission Point ID#	Source	NOx		CO		VOC		Total HAPs		PM10/2.5		SO2		CO2e	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
8E-Comb	6-Condensate Tanks (1S-TK1-6)	-	-	-	-	1.43	6.24	0.01	0.03	-	-	-	-	0.11	0.50
8E-COMB	2-Produced Water Tanks (2S-TK7-8)	-	-	-	-	0.04	0.15	-	0.001	-	-	-	-	-	0.01
8E-COMB	Vapor Combustor (8S-COMB)	0.10	0.44	0.54	2.38	-	-							173.17	758.49
3E-ENG	Compressor Engine (3S-ENG)	0.21	0.92	0.42	1.83	0.04	0.18	0.02	0.08	0.01	0.03	0.00	0.00	111.47	488.26
4E-GPU1 - 6 (Emissions per unit)	6 - Heater Stacks (4S-GPU1- 6 (per unit)	0.08	0.36	0.07	0.30	0.00	0.02	0.00	0.01	0.01	0.03	0.00	0.00	98.40	430.99
5E-LP	Heater Stack (5S-LH)	0.08	0.36	0.07	0.30	0.00	0.02	0.00	0.01	0.01	0.03	0.00	0.00	98.40	430.99
6E-TL1	Truck Loading (6S-TL-1)	-	-	-	-	6.81	3.40			-	-	-	-	-	-
7E-TL2	Truck Loading (7S-TL2)	-	-	-	-	0.14	0.068			-	-	-	-	-	-
9E-Pilot	Pilot (9S-Pilot)	0.00	0.01	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	1.50	6.57
None	Fugitive Emissions (Equipment Leaks)	-	-	-	-	0.81	3.54			-	-	-	-	-	72.84
Total Emissions		0.87	3.89	1.45	6.31	9.27	13.72	0.03	0.18	0.08	0.24	0.00	0.00	975.05	4343.6

REGULATORY APPLICABILITY

The following rules and regulations apply to the facility.

45CSR2 To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers

This rule establishes emission limitations for smoke and particulate matter which are discharged from fuel burning units. Per §45-2-11, any fuel burning unit(s) having a heat input under ten (10) million Btu/hr will be exempt from sections 4, 5, 6, 8 and 9.

The facility is proposing to install six (6) heaters and one (1) low pressure separator onsite. Each heater has a design heat input of 1.0 MMBtu/hr. The heaters will be subject to the opacity requirements set forth in section §45-2-3 of this rule.

The facility will demonstrate compliance with this rule by conducting monthly visible emission checks in accordance with 40 CFR 60, Appendix A, Method 9 at the request of the Director.

45CSR4 To Prevent and Control the Discharge of Air Pollutants Into the Open Air Which Causes or Contributes to an Objectionable Odor or Odors

This rule is designed to prevent and control the discharge of pollutants into the open air which causes or contributes to an objectionable odor or odors.

No person shall be considered in violation of this rule unless notified that he is discharging an air pollutant or air pollutants which causes or contributes to an objectionable odor.

45CSR6 Control of Air Pollution from Combustion of Refuse

This rule establishes emission standards for particulate matter and requirements for particulate matter and requirements for activities involving incineration of refuse which are not subject to, or are exempted from regulation under a federal counterpart for specific combustion sources. This rule also prohibits open burning and sets forth the registration, permitting, reporting, testing, emergency, natural disaster and exemption provisions for activities involving the combustion of refuse and land clearing debris.

The facility has proposed a vapor combustor for controlling the working/breathing/flashing emissions from the condensate/produced water storage tanks. The vapor combustor must meet the requirements for the emission standards set forth in section 4.1 of this rule, were the allowable particulate matter emission rate to be discharged is determined below.

Emissions (lb/hr) = F x Incinerator Capacity (tons/hr)
Where, the factor, F, is as indicated in Table I below:

Table I: Factor, F, for Determining Maximum Allowable Particulate Emissions.

Incinerator Capacity Factor F

A. Less than 15,000 lbs/hr 5.43

B. 15,000 lbs/hr or greater 2.72

VOC emissions to the incinerator are 770,243.5 lbs/yr or 87.93 lbs/hr.

Emissions (lb/hr) = 5.43 x 385.12 tons/yr = 2091.2 lb/hr

The hourly particulate matter emission rate from the combustor are negligible. The facility will demonstrate compliance by maintaining and operating the combustor properly.

The vapor combustor must meet the visible emissions requirements of this rule, which limits the combustor to 20% opacity during operation per section 4.3 of this rule. Since particulate matter is expected to be emitted at a negligible rate, the vapor combustor should meet the requirements of this section. The permittee will be required to operate the vapor combustor according to manufacturer specifications in order to maintain a smokeless operation. The permittee will also be required to conduct a Method 22 opacity check upon startup of the vapor combustor and Method 9 opacity checks upon request of the Director.

45CSR13 Permits for Construction, Modification, Relocation, and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, Permission to Commence Construction, and Procedures for Evaluation

The purpose of this rule is to set forth the procedures for stationary source reporting, and the criteria for obtaining a permit to construct and operate a new stationary source which is not a major stationary source, to modify a non-major stationary source, to make modifications which are not major modifications to an existing major stationary source, to relocate non-major stationary sources within the state of West Virginia, and to set forth procedures to allow facilities to commence construction in advance of permit issuance. Such construction, modification, relocation and operation without a required permit is a violation of this rule. This rule also establishes the requirements for obtaining an administrative update to an existing permit, a temporary permit or a general permit registration, and for filing notifications and maintaining records of changes not otherwise subject to the permit requirements of this rule. This rule does not apply to nonroad engines, nonroad vehicles, motor vehicles, or other emission sources regulated under Subchapter II of the federal Clean Air Act; provided, however that the Secretary may regulate such sources pursuant to another rule promulgated

for that purpose.

The facility has the potential to emit greater than 6 pph and 10 tpy of any regulated air pollutant. The facility is subject NSR permitting requirements. The applicant has filed a permit application with the agency and published a public notice in the local paper per the requirements of §45-13-8.3. The agency will publish a Class I Legal Advertisement per the notice level requirements of §45-13-8.4.

45CSR16 Standards of Performance for New Stationary Sources

This rule establishes and adopts standards of performance for new stationary sources promulgated by the United States Environmental Protection Agency pursuant to section 111(b) of the federal Clean Air Act, as amended (CAA). This rule codifies general procedures and criteria to implement the standards of performance for new stationary sources set forth in 40 CFR Part 60. The Secretary hereby adopts these standards by reference. The Secretary also adopts associated reference methods, performance specifications and other test methods which are appended to these standards.

The proposed facility is subject to NSPS requirement set forth in 40 CFR 60 Subpart OOOO and Subpart JJJJ.

45CSR22 Air Quality Management Fee Program

This rule establishes a program to collect fees for certificates to operate and for permits to construct, modify or relocate sources of air pollution. Funds collected from these fees will be used to supplement the Director's budget for the purpose of maintaining an effective air quality management program.

The facility will be required to maintain their Certificate to Operate (CTO) annually.

40 CFR 60 Subpart JJJJ Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

The proposed compressor is a new construction, manufactured on May 20, 2008 (serial number N4F03141) and has a design horsepower rating of 95hp.

§ 60.4230 Am I subject to this subpart?

(a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (6) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

(1) Manufacturers of stationary SI ICE with a maximum engine power less than or equal to 19 kilowatt (KW) (25 horsepower (HP)) that are manufactured

on or after July 1, 2008.

The proposed engine is greater than 25 hp and manufactured before July 1, 2008. Therefore, it is not subject to this section.

(2) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline fueled or that are rich burn engines fueled by liquefied petroleum gas (LPG), where the date of manufacture is:

(i) On or after July 1, 2008; or

(ii) On or after January 1, 2009, for emergency engines.

The proposed engine is greater than 25 hp (95 hp), but was manufactured prior to July 1, 2008. Therefore, it is not subject to this section.

(3) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are not gasoline fueled and are not rich burn engines fueled by LPG, where the manufacturer participates in the voluntary manufacturer certification program described in this subpart and where the date of manufacture is:

(i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP);

The proposed engine is less than 500 hp. Therefore, it is not subject to this section.

(ii) On or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP;

The proposed engine is a rich burn engine, with the design rating less than 500 hp.

(iii) On or after July 1, 2008, for engines with a maximum engine power less than 500 HP; or

The proposed engine is less than 500 hp (95 hp), but manufactured before July 1, 2008.

(iv) On or after January 1, 2009, for emergency engines.

The proposed engine is not an emergency engine. Therefore, it is not subject to this section.

(4) Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured:

(i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP);

The proposed engine is less than 500 hp. Therefore, it is not subject to this section.

(ii) on or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP;

The proposed engine is less than 500 hp. Therefore, it is not subject to this section.

(iii) on or after July 1, 2008, for engines with a maximum engine power less than 500 HP; or

The proposed engine is less than 500 hp, but manufactured before July 1, 2008. Therefore, it is not subject to this section.

(iv) on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 KW (25 HP).

The proposed engine is not an emergency engine. Therefore, it is not subject to this section.

(5) Owners and operators of stationary SI ICE that are modified or reconstructed after June 12, 2006, and any person that modifies or reconstructs any stationary SI ICE after June 12, 2006.

The proposed engine is a new construction.

(6) The provisions of § 60.4236 of this subpart are applicable to all owners and operators of stationary SI ICE that commence construction after June 12, 2006.

The engine will comply with this section, since it is a new construction.

§ 60.4236 What is the deadline for importing or installing stationary SI ICE produced in previous model years?

(a) After July 1, 2010, owners and operators may not install stationary SI ICE with a maximum engine power of less than 500 HP that do not meet the applicable requirements in § 60.4233.

The proposed engine with an engine power less than 500 hp (95 hp). The engine will meet applicable requirements in § 60.4233.

§ 60.4233 What emission standards must I meet if I am an owner or operator of a stationary SI internal combustion engine?

(a) Owners and operators of stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP) manufactured on or after July 1, 2008, must comply with the emission standards in § 60.4231(a) for their stationary SI ICE.

The proposed engine is greater than 25 hp and manufactured prior to July 1, 2008. Therefore, it is not subject to this section.

(b) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) manufactured on or after the applicable date in § 60.4230(a)(4) that use gasoline must comply with the emission standards in § 60.4231(b) for their stationary SI ICE.

The proposed engine doesn't use gasoline. Therefore, it is not subject to this section.

(c) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) manufactured on or after the applicable date in § 60.4230(a)(4) that are rich burn engines that use LPG must comply with the emission standards in § 60.4231(c) for their stationary SI ICE.

The proposed engine doesn't use LPG. Therefore, it is not subject to this section.

(d) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) and less than 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) must comply with the emission standards for field testing in 40 CFR 1048.101(c) for their non-emergency stationary SI ICE and with the emission standards in Table 1 to this subpart for their emergency stationary SI ICE. Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) and less than 75 KW (100 HP) manufactured prior to January 1, 2011, that were certified to the standards in Table 1 to this subpart applicable to engines with a maximum engine power greater than or equal to 100 HP and less than 500 HP, may optionally choose to meet those standards.

The proposed engine is greater than 25 hp and less than 100 hp and a non-emergency engine. The proposed engine must comply with the emission standards for field testing in 40 CFR 1048.101(c) for their non-emergency stationary SI ICE. The engine will be required to perform an initial performance test as required by this subpart. Also, they will be subject to the recordkeeping and reporting of this subpart.

(e) Owners and operators of 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 to this subpart for their stationary SI ICE. For owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 100 HP (except gasoline and rich burn engines that use LPG) manufactured prior to January 1, 2011 that were certified to the certification emission standards in 40 CFR part 1048 applicable to engines that are not severe duty engines, if such stationary SI ICE was certified to a carbon monoxide (CO) standard above the standard in Table 1 to this subpart, then the owners and operators may meet the CO certification (not field testing) standard for which the engine was certified.

The proposed engine is less than 100 hp. Therefore, it is not subject to this section.

(f) Owners and operators of any modified or reconstructed stationary SI ICE subject to this subpart must meet the requirements as specified in paragraphs (f)(1) through (5) of this section.

The proposed engine is a new construction. Therefore, it is not subject to this section.

(1) Owners and operators of stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP), that are modified or reconstructed after June 12, 2006, must comply with emission standards in § 60.4231(a) for their stationary SI ICE. Engines with a date of manufacture prior to July 1, 2008 must comply with the emission standards specified in § 60.4231(a) applicable to engines manufactured on July 1, 2008.

The proposed engine is less than 25 hp and is a new construction. Therefore, it is not subject to this section.

(2) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline engines and are modified or reconstructed after June 12, 2006, must comply with the emission standards in § 60.4231(b) for their stationary SI ICE. Engines with a date of manufacture prior to July 1, 2008 (or January 1, 2009 for emergency engines) must comply with the emission standards specified in § 60.4231(b) applicable to engines manufactured on July 1, 2008 (or January 1, 2009 for emergency engines).

The proposed engine doesn't use gasoline. Therefore, it is not subject to this section.

(3) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are rich burn engines that use LPG, that are modified or reconstructed after June 12, 2006, must comply with the same emission standards as those specified in § 60.4231(c). Engines with a date of manufacture prior to July 1, 2008 (or January 1, 2009 for emergency engines) must comply with the emission standards specified in § 60.4231(c) applicable to engines manufactured on July 1, 2008 (or January 1, 2009 for emergency engines).

The proposed engine doesn't use LPG. Therefore, it is not subject to this section.

(4) Owners and operators of stationary SI natural gas and lean burn LPG engines with a maximum engine power greater than 19 KW (25 HP), that are modified or reconstructed after June 12, 2006, must comply with the same emission standards as those specified in paragraph (d) or (e) of this section, except that such owners and operators of non-emergency engines and emergency engines greater than or equal to 130 HP must meet a nitrogen oxides (NOX) emission standard of 3.0 grams per HP-hour (g/HP-hr), a CO emission standard of 4.0 g/HP-hr (5.0 g/HP-hr for non-emergency engines less than 100 HP), and a volatile organic compounds (VOC) emission standard of 1.0 g/HP-hr, or a NOX emission standard of 250 ppmvd at 15 percent oxygen (O₂), a CO emission standard 540 ppmvd at 15 percent O₂ (675 ppmvd at 15 percent O₂ for non-emergency engines less than 100 HP), and a VOC emission standard of 86 ppmvd at 15 percent O₂ , where the date of manufacture of the engine is:

The proposed engine is a new construction. Therefore, it is not subject to this section.

(5) Owners and operators of stationary SI landfill/digester gas ICE engines with a maximum engine power greater than 19 KW (25 HP), that are modified or reconstructed after June 12, 2006, must comply with the same emission standards as those specified in paragraph (e) of this section for stationary landfill/digester gas engines. Engines with maximum engine power less than 500 HP and a date of manufacture prior to July 1, 2008 must comply with the emission standards specified in paragraph (e) of this section for stationary landfill/digester gas ICE with a maximum engine power less than 500 HP manufactured on July 1, 2008. Engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines greater than or equal to 500 HP and less than 1,350 HP) and a date of manufacture prior to July 1, 2007 must comply with the emission standards specified in paragraph (e) of this section for stationary landfill/digester gas ICE with a maximum engine power greater than or equal to 500 HP (except lean burn engines greater than or equal to 500 HP and less than 1,350 HP) manufactured on July 1, 2007. Lean burn engines greater than or equal to 500 HP and less than 1,350 HP with a date of manufacture prior to January 1, 2008 must comply with the emission standards specified in paragraph (e) of this section for stationary landfill/digester gas ICE that are lean burn engines greater than or equal to 500 HP and less than 1,350 HP and manufactured on January 1, 2008.

The proposed engine is not a SI landfill/digester gas ICE engine. Therefore, it is not subject to this section.

(g) Owners and operators of stationary SI wellhead gas ICE engines may petition the Administrator for approval on a case-by-case basis to meet emission standards no less stringent than the emission standards that apply to stationary emergency SI engines greater than 25 HP and less than 130 HP due to the presence of high sulfur levels in the fuel, as specified in Table 1 to this subpart. The request must, at a minimum, demonstrate that the fuel has high sulfur levels that prevent the use of aftertreatment controls and also that the owner has reasonably made all attempts possible to obtain an engine that will meet the standards without the use of aftertreatment controls. The petition must request the most stringent standards reasonably applicable to the engine using the fuel.

(h) Owners and operators of stationary SI ICE that are required to meet standards that reference 40 CFR 1048.101 must, if testing their engines in use, meet the standards in that section applicable to field testing, except as indicated in paragraph (e) of this section.

The facility will demonstrate compliance with this regulations by meeting the requirements of §60.4243, testing requirements of §60.4233(h), notification, reporting and recordkeeping requirements of §60.4245(a),(d).

40 CFR 60 Subpart OOOO Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution

This subpart applies to the applicable provisions of this subpart if you are the owner or operator of one or more of the onshore affected facilities listed in paragraphs (a) through (g) of this section for which you commence construction, modification or reconstruction after August 23, 2011.

- (a) Each gas well affected facility, which is a single natural gas well.
There are six (6) natural gas wells located at the site and were drilled after August 23, 2011. The facility will comply with the requirements pertaining to natural gas wells per §60.5375.
- (b) Each centrifugal compressor affected facility, which is a single centrifugal compressor using wet seals that is located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. A centrifugal compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.
There are no centrifugal compressors proposed for the NORM1 site. The facility will not have to comply with the requirements pertaining to centrifugal compressor engines. The facility is proposing one (1) reciprocating compressor engine.
- (c) Each reciprocating compressor affected facility, which is a single reciprocating compressor located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. A reciprocating compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.
The facility is proposing to install one (1) reciprocating compressor engine at the site. Since the reciprocating compressor is located at a well site, it is not subject to the requirements of this subpart.
- (d)
- (1) For the oil production segment (between the wellhead and the point of custody transfer to an oil pipeline), each pneumatic controller affected facility, which is a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 scfh.
The facility will have pneumatic controllers, but will not have continuous bleed controllers. The facility will not be subject to the requirements for this subpart.
- (2) For the natural gas production segment (between the wellhead and the point of custody transfer to the natural gas transmission and storage segment and not including natural gas processing plants),

each pneumatic controller affected facility, which is a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 scfh.

The facility will have pneumatic controllers, but will not have continuous bleed controllers. The facility will not be subject to the requirements for this section.

- (3) For natural gas processing plants, each pneumatic controller affected facility, which is a single continuous bleed natural gas-driven pneumatic controller.

The facility will have pneumatic controllers, but will not have continuous bleed controllers. This is not a natural gas processing plant. The facility will not be subject to the requirements for this section.

- (e) Each storage vessel affected facility, which is a single storage vessel, located in the oil and natural gas production segment, natural gas processing segment or natural gas transmission and storage segment.

40CFR60 Subpart OOOO defines a storage vessel as a unit that is constructed primarily of nonearthen materials (such as wood, concrete, steel, fiberglass, or plastic) which provides structural support and is designed to contain an accumulation of liquids or other materials. The following are not considered storage vessels:

- Vessels that are skid-mounted or permanently attached to something that is mobile (such as trucks, railcars, barges or ships), and are intended to be located at a site for less than 180 consecutive days. If the source does not keep or are not able to produce records, as required by §60.5420(c)(5)(iv), showing that the vessel has been located at a site for less than 180 consecutive days, the vessel described herein is considered to be a storage vessel since the original vessel was first located at the site.
- Process vessels such as surge control vessels, bottoms receivers or knockout vessels.
- Pressure vessels designed to operate in excess of 204.9 kilpascals and without emissions to the atmosphere.

This rule requires that the permittee determine the VOC emission rate for each storage vessel affected facility utilizing a generally accepted model or calculation methodology within 30 days of startup, and minimize emissions to the extent practicable during the 30 day period using good engineering practices. For each storage vessel affected facility that emits more than 6 tpy of VOC, the permittee must reduce VOC emissions by 95% or greater within 60 days of startup. The compliance date for applicable storage vessels is October 15, 2013.

Each tank at the facility has the potential to emit less than 6 tpy of VOCs and use a vapor combustor to control emissions. Therefore, the facility is not subject to the requirements of this section. In addition, the VOC

emissions from the tanks will be controlled by a vapor combustor with 98% efficiency.

- (f) The group of all equipment, except compressors, within a process unit is an affected facility.
 - (1) Addition or replacement of equipment for the purpose of process improvement that is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.
 - (2) Equipment associated with a compressor station, dehydration unit, sweetening unit, underground storage vessel, field gas gathering system, or liquefied natural gas unit is covered by §§ 60.5400, 60.5401, 60.5402, 60.5421, and 60.5422 of this subpart if it is located at an onshore natural gas processing plant. Equipment not located at the onshore natural gas processing plant site is exempt from the provisions of §§ 60.5400, 60.5401, 60.5402, 60.5421, and 60.5422 of this subpart.
 - (3) The equipment within a process unit of an affected facility located at onshore natural gas processing plants and described in paragraph (f) of this section are exempt from this subpart if they are subject to and controlled according to subparts VVa, GGG or GGGa of this part.

The proposed facility is not a natural gas processing plant that was modified after August 23, 2011. A natural gas processing plant is defined as any processing site engaged in the extraction of natural gas liquids from field gas, fractionation of mixed natural gas liquids to natural gas products, or both. Therefore, Leak Detection and Repair (LDAR) requirements for onshore natural gas processing plants would not apply to the proposed site.

- (g) Sweetening units located at onshore natural gas processing plants that process natural gas produced from either onshore or offshore wells.
 - (1) Each sweetening unit that processes natural gas is an affected facility; and
 - (2) Each sweetening unit that processes natural gas followed by a sulfur recovery unit is an affected facility.
 - (3) Facilities that have a design capacity less than 2 long tons per day (LT/D) of hydrogen sulfide (H₂S) in the acid gas (expressed as sulfur) are required to comply with recordkeeping and reporting requirements specified in § 60.5423(c) but are not required to comply with §§ 60.5405 through 60.5407 and §§ 60.5410(g) and 60.5415(g) of this subpart.
 - (4) Sweetening facilities producing acid gas that is completely reinjected into oil-or-gas-bearing geologic strata or that is otherwise

not released to the atmosphere are not subject to §§ 60.5405 through 60.5407, 60.5410(g), 60.5415(g), and 60.5423 of this subpart.

The facility doesn't propose to install any sweetening facilities at the site. Sweetening unit is defined as a process device that removes hydrogen sulfide and/or carbon dioxide from the sour natural gas stream. Therefore, this section of the rule doesn't apply to the facility.

The following rules and regulations do not apply.

45CSR10 To Prevent and Control Air Pollution from the Emission of Sulfur Oxides

The purpose of this rule is to prevent and control air pollution from the emission of sulfur oxides. Per §45-10-10, any fuel burning units having a design heat input under ten (10) million Btu/hr will be exempt from section 3 and 6 - 8. Section 5 of this rule is for the combustion of refinery or process gas streams. The stream combusted is a waste gas stream comprised mainly of VOCs. The fuel burning units at the site are not subject to the requirements under this rule.

45CSR14 Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration

The facility-wide potential-to-emit is below the levels that would define the proposed source as a major source per the definition in this rule.

Potential Source Aggregation

Classifying multiple facilities as one "stationary source" under 45CSR13, 45CSR14, and 45CSR19 is based on the definition of "Building, structure, facility, or installation" as given in §45-14-2.13 and §45-19-2.12. The definition states:

"Building, Structure, Facility, or Installation" means all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control). Pollutant-emitting activities are a part of the same industrial grouping if they belong to the same "Major Group" (i.e., which have the same two (2)-digit code) as described in the Standard Industrial Classification Manual, 1987 (United States Government Printing Office stock number GPO 1987 0-185-718:QL 3).

The proposed facility is located upstream of a natural gas compressor station under the control of CONE Gathering. The facilities share the same first two digits of the SIC code 13.

"Contiguous or Adjacent" determinations are made on a case by case basis. These determinations are proximity-based, and it is important to focus on this and whether or not it meets the common sense notion of one stationary source. The terms

"contiguous" or "adjacent" are not defined by USEPA. Contiguous has a dictionary definition of being in actual contact; touching along a boundary or at a point. Adjacent has a dictionary definition of not distant; nearby; having a common endpoint or border.

The Noble Energy site is located approximately 1.25 miles from the CONE Gathering/Normantown Compressor Station. Facilities separated by this distance do not meet the common sense notion of a single plant. Therefore, the facility is not considered contiguous or adjacent.

The site will not be aggregated with another site to determine applicability of major source status as defined by this rule.

45CSR19 Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution Which Cause or Contribute to Nonattainment

It is the intent of the Secretary that all applications filed by any person to construct major new or modified stationary air pollution sources, intending to locate in areas with air quality worse than the levels set to protect the public health and welfare, or that might impact those areas, must adequately meet the preconstruction review procedures and conditions of the Clean Air Act as amended and this rule.

These conditions are designed to ensure that the major new or modified source's emissions will be controlled to the greatest degree practicable; that more than equivalent offsetting emission reductions will be obtained from existing sources; that there will be progress toward achievement of the National Ambient Air Quality Standards; and that all applicable air pollution regulations adopted by the Secretary will be met.

The facility is not defined as a major source per section 2.35 and is not proposing to locate in a nonattainment area. Gilmer County is considered an attainment area. Attainment is a designation of an area that meets the National Ambient Air Quality Standards. National Ambient Air Quality Standards are set by EPA to protect human health and welfare.

45CSR30 Requirements for Operating Permits

This rule provides for the establishment of a comprehensive air quality permitting system consistent with the requirements of Title V of the Clean Air Act. All fees collected pursuant to this rule shall be expended solely to cover all reasonable direct and indirect costs required to administer the Title V operating permit program and accounted for in accordance with this rule.

The facility is not defined as a major stationary source per section 2.26 of this rule.

The source is subject to 40CFR60 Subparts OOOO and JJJJ, however they

are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided they are not required to obtain a permit for a reason other than their status as an area source. Therefore, Noble Energy is not subject to 45CSR30.

40 CFR 60 Subpart Kb Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984

The affected facility to which this subpart applies is each storage vessel with a capacity greater than or equal to 75 cubic meters (19,813 gallons) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984.

The facility is proposing to install six (6) 400 bbl (16,800 gallons) condensate storage tanks and two (2) 400 bbl (16,800 gallons) produced water tanks. The condensate is considered a VOC and the produced water tanks is assumed to have 1% condensate. Since the capacity is below the volume specified in the regulation, this regulation doesn't apply.

40 CFR 60 Subpart KKK Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants for Which Construction, Reconstruction, or Modification Commenced After January 20, 1984, and on or Before August 23, 2011

The provisions of this subpart apply to affected facilities in onshore natural gas processing plants. A natural gas processing plant means any processing site engaged in the extraction of natural gas liquids from field gas, fractionation of mixed natural gas liquids to natural gas products, or both. The facility is not a natural gas processing plant as defined by this rule. Therefore, the requirements of this rule do not apply.

40 CFR 63 Subpart HH National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities

The facility is considered an area source that processes, upgrades, and stores hydrocarbon liquids, per section §63.760(a)(2). Affected sources for area sources are defined in section §63.760(b)(2), which includes each triethylene glycol (TEG) dehydration unit located at the facility that meets the criteria specified in section §63.760(a). Section §63.760(d) states that owners and operators of a facility that does not contain an affected source as specified in §63.760(b) are not subject to the requirements of this subpart.

The facility is defined as an area source, but is not proposing to construct a triethylene glycol (TEG) dehydration unit at the site. Since the facility is not proposing an affected source, the facility is not subject to the requirements of this subpart.

40CFR60.18 General Control Device and Work Practice Requirements

The requirements apply only to flares that are required for compliance to an NSPS Standard. Enclosed combustion devices do not meet the definition of a flare, as defined in this subpart. The facility is installing a Cimarron Model ECD-2-48-210 enclosed vapor combustor unit. Therefore, the facility is not subject to the requirements of this subpart.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

There will be small amounts of various non-criteria regulated pollutants emitted from the combustion of natural gas. However, due to the concentrations emitted, detailed toxicological information is not included in this evaluation.

AIR QUALITY IMPACT ANALYSIS

Modeling was not required of this source due to the fact that the facility is not subject to 45CSR14 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollutants) as seen in the table listed in the Regulatory Discussion Section.

MONITORING OF OPERATIONS

- Maintain catalytic reduction devices installed on the natural gas compression engine (3S-ENG).
- Monthly and yearly throughput of the amount of natural gas consumed in the natural gas compression engine (3S-ENG).
- Maintain constant pilot flame in the vapor combustor (8S-COMB). Monitor using a thermocouple or equivalent device.
- Monthly throughput of gas (waste from storage tanks and auxiliary gas) to the vapor combustor (8S-COMB).
- Visible emission checks of the vapor combustor per Method 22 upon startup. Method 9 checks at the request of the Director. (8S-COMB).
- Method 9 checks of the Line Heaters (4S-GPU-1-6 and 5S-LP) at the request of the Director.
- Monthly and yearly throughput of the amount of natural gas consumed in the natural gas heaters.
- Monthly and yearly throughput of condensate and produced water loaded in the truck loading operations.
- Monthly and yearly condensate and produced water production.

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates Noble Energy meets all applicable requirements. Therefore, it is recommended that the Gilmer County location should be granted a 45CSR13 construction permit for their facility.

Jill Harris
Permit Writer

August 30, 2013