



west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: R13-3369A
Plant ID No.: 083-00018
Applicant: Greylock Midstream, LLC
Facility Name: Mabie Compression Station
Location: Near Cassity, Randolph County
SIC/NAICS Codes: 1311/211111
Application Type: Modification
Received Date: April 9, 2018
Engineer Assigned: Joe Kessler
Fee Amount: \$2,500*
*[*This fee represents the General Application Fee of \$1,000 + the MACT Fee of \$2,500 - \$1,000 NSPS Fee incorrectly paid under R13-3369.]*

Date Received: May 9, 2018
Complete Date: May 9, 2018
Due Date: August 7, 2018
Applicant's Ad Date: April 19, 2018
Newspaper: *The Inter-Mountain*
UTM's: 583.75 km Easting • 4,298.24 km Northing • Zone 17
Latitude/Longitude: 38.82904°/-80.03519°
Description: Correction of an error to remove, in reference to engine E04, the applicability of 40 CFR 60, Subpart JJJJ and confirm the applicability of 40 CFR 63, Subpart ZZZZ.

On August 24, 2017, Permit Number R13-3369 was issued to Energy Corporation of America (ECA) for a modification of the Mabie Compression Station located just north of Cassity, Randolph County, WV along Cassity Long Run Road (County Route 35/7). The permit was issued for a modernization project at the existing station and included the installation of a used (*Manufactured: July 13, 2000*) natural gas-fired Caterpillar Model 3516 4-Stroke Lean Burn (4SLB) compressor engine. This engine was installed to replace three (3) old existing grandfathered engines. Additionally, four (4) storage tanks were also removed from the site. On April 20, 2018, R13-3369 was transferred to Greylock Midstream, LLC (Greylock).

DESCRIPTION OF PROCESS/MODIFICATIONS

Existing Facility

The existing Mabie Compression Station, located just north of Cassity, Randolph County, WV, began operation in the early 1970's and the entire facility was considered grandfathered until 2017 when R13-3369 was issued. There is no record of any other New Source Review (NSR) permitting actions involving the Mabie Compression Station. According to R13-3369, the existing facility consists of one (1) 1,340 hp Caterpillar Model 3516 engine (E04), one (1) 30.2 hp Onan 12.5JC-3R3 emergency generator (G1), and various storage tanks (A01 through A05, and TK01).

Proposed Modifications

Greylock is now submitting an application to modify R13-3369 by removing the applicability of 40 CFR 60, Subpart JJJJ to E04 and adding the applicability of 40 CFR 63, Subpart ZZZZ. The engine, manufactured in 2000, was incorrectly applied for as a new engine under R13-3369 and this resulted in the incorrect regulatory applicability (see below under Regulatory Applicability). No physical changes are proposed as part of this permitting action.

SITE INSPECTION

Due to the nature of the modification, the writer deemed a site inspection as not necessary. The Mabie Compression Station was last “Full-On-Site” inspected by DAQ Compliance/Enforcement (C/E) Inspector Mr. Dan Bauerle on December 6, 2016. Based on that inspection, the facility was determined to be “Status 30 - In Compliance.”

AIR EMISSIONS AND CALCULATION METHODOLOGIES

There will be no change in the facility-wide emissions as a result of the modifications evaluated herein. Based on information from the most recently issued Title V Permit (R30-08300018-2016) and R13-3369, the facility-wide annual emissions summary is given in the following table:

Table 1: Mabie Compression Station Facility-Wide Annual Emissions (tons/year)

Pollutant	Existing Un-permitted⁽¹⁾	R13-3369⁽²⁾	Facility-Wide
CO	195.20	2.76	197.96
NO _x	115.97	6.47	122.44
PM _{2.5} /PM ₁₀	0.50	0.12	0.62

Pollutant	Existing Un-permitted ⁽¹⁾	R13-3369 ⁽²⁾	Facility-Wide
PM	1.02	0.12	1.14
SO ₂	0.03	0.01	0.04
VOCs	1.55	3.77	5.32
HAPs	1.08	0.41	1.49

(1) Emission data taken from R30-08300018-2016 Fact Sheet.

(2) Emission data taken from R13-3369 Fact Sheet.

REGULATORY APPLICABILITY

This section will address the potential regulatory applicability/non-applicability of substantive state and federal air quality rules relevant to the emission units/sources proposed to be modified at the Mabie Compression Station.

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

The proposed modification of the Mabie Compression Station does not have the potential to increase the emissions of a regulated pollutant in excess of the thresholds that would, pursuant to §45-13-2.17, define the changes as a "modification" under 45CSR13 (see Table 1 above). However, under Section 2.24 of 45CSR13, included in the definition of a "stationary source" is any facility that "is subject to any substantive requirement of an emission control rule promulgated by the Secretary." Based on long-standing DAQ policy and the "dual-definition" of a source, this test is also applied to proposed changes to determine if they meet the definition of modification. In the case of engine E04, it does trigger a substantive requirement of 45CSR34 (which incorporates by reference federal Maximum Achievable Control Standard - Subpart ZZZZ) and, therefore, is defined as a modification. Pursuant to §45-13-5.1, "[n]o person shall cause, suffer, allow or permit the construction . . . and operation of any stationary source to be commenced without . . . obtaining a permit to construct." Therefore, Greylock is required to obtain a permit under 45CSR13 for the modification of the Mabie Compression Station.

As required under §45-13-8.3 ("Notice Level A"), Greylock placed a Class I legal advertisement in a "newspaper of *general circulation* in the area where the source is . . . located." The ad ran on April 19, 2018 in *The Inter-Mountain* and the verification that this legal advertisement ran was submitted on April 30, 2018.

45CSR14: Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration - (Not Applicable)

The Mabie Compression Station is located in Randolph County, WV. Randolph County is classified as "in attainment" with all National Ambient Air Quality Standards (NAAQS). Therefore, as the facility is not a "listed source" under §45-14-2.43, the individual major source applicability

threshold for all pollutants is 250 TPY. As given in Table 1, the facility-wide PTE of the modified Mabie Compression Station remains less than 250 TPY for all criteria pollutants. Therefore, the facility is not defined as a "major stationary source" under 45CSR14 and the rule does not apply.

45CSR30: Requirements for Operating Permits

45CSR30 provides for the establishment of a comprehensive air quality permitting system consistent with the requirements of Title V of the Clean Air Act. Prior to the issuance of R13-3369, Mabie Compression Station met the definition of a "major source under §112 of the Clean Air Act" as outlined under §45-30-2.26 and clarified (fugitive policy) under 45CSR30b. Therefore, the facility was previously subject to 45CSR30. The facility was last issued a Title V permit (R30-08300018-2016) on November 29, 2016. However, after the changes were made pursuant to R13-3369A, the facility was no longer defined as a Title V major source and on December 27, 2017, the Title V permit was placed as inactive. As the facility is subject to a New Source Performance Standard (NSPS) - 40 CFR 60, Subpart OOOOa (fugitive emissions from components only) and a Maximum Achievable Control Technology (MACT) rule - 40 CFR 63, Subpart ZZZZ - the facility would, in most cases, be subject to Title V as a "deferred source." However, pursuant to §60.5370a(c) and §63.6585(d), as a non-major source, Greylock is not required to obtain a new Title V permit for the existing facility. Therefore, the facility is not subject to 45CSR30.

40 CFR 60 Subpart JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines - (Not Applicable)

The natural gas-fired 1,340 hp, 4SLB Caterpillar Model 3516 (E04) compressor engine (according to information in Permit Application R13-3369A, manufactured on July 15, 2000) is defined under 40 CFR 60, Subpart JJJJ as a stationary spark-ignition internal combustion engine (SI ICE). However, pursuant to the applicability requirements in §60.4230, as the engine was manufactured in 2000, the engine is not subject to Subpart JJJJ.

40 CFR 60, Subpart OOOOa: Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015 - (Not Applicable)

40 CFR 60 Subpart OOOOa establishes emission standards and compliance schedules for the control of the pollutant greenhouse gases (GHG) and VOCs. The greenhouse gas standard in this subpart is in the form of a limitation on emissions of methane from affected facilities in the crude oil and natural gas source category that commence construction, modification or reconstruction after September 18, 2015. This subpart also establishes emission standards and compliance schedules for the control of volatile organic compounds (VOC) and sulfur dioxide (SO₂) emissions from affected facilities that commence construction, modification or reconstruction after September 18, 2015 (40 CFR 60, Subpart OOOO is applicable to those sources constructed prior to this date but after August 23, 2011).

As E04 was installed at Mabie in 2017, the compressor has potential applicability to the rod packing requirements under §60.5385a. However, pursuant to the definition of "modification" under §60.14(e)(6), the "relocation or change in ownership of an existing facility" is not defined as a modification under an NSPS. Therefore, in the case of E4, it would not be considered a modification and, therefore, would not be applicable to Subpart OOOOs.

40 CFR 63 Subpart ZZZZ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

On June 1, 2013 the DAQ took delegation of the area source provisions of 40 CFR 63, Subpart ZZZZ. As the Mabie Compression Station is defined as an area source of HAPs (see Table 1), the natural gas-fired 1,340 hp, 4SLB Caterpillar Model 3516 (E04) compressor engine is subject to applicable requirements of Subpart ZZZZ. Pursuant to §63.6603(a), “an existing stationary RICE located at an area source of HAP emissions . . . must comply with the requirements in Table 2d to this subpart and the operating limitations in Table 2b.” Pursuant to §63.6590(a)(1)(iii), for a “stationary RICE located at an area source of HAP emissions, a stationary RICE is existing if [the owner or operator] commenced construction or reconstruction of the stationary RICE before June 12, 2006.” Under §63.2, the definition of construction explicitly excludes the relocation of an affected source. Therefore, based on the above, E04 is defined as an existing engine (as it was manufactured in 2000) and must meet the applicable requirements under Tables 2b and 2d.

As Table 2b only includes requirements for existing compression ignition (CI) engines, the only requirements applicable to E04 is located in Table 2d. Specifically, under Requirement 9 (the only applicable classification - “*Non-emergency, non-black start 4SLB stationary RICE >500 HP that are not remote stationary RICE and that operate more than 24 hours per calendar year*”), Grey lock is required, with respect to E04, to “[i]ninstall an oxidation catalyst to reduce HAP emissions from the stationary RICE.” An oxidation catalyst is already installed on E04 and was required under R13-3369.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

This section provides an analysis for those regulated pollutants that may be emitted from the proposed compressor engines and that are not classified as “criteria pollutants.” Criteria pollutants are defined as Carbon Monoxide (CO), Lead (Pb), Oxides of Nitrogen (NO_x), Ozone, Particulate Matter (PM₁₀ and PM_{2.5}), and Sulfur Dioxide (SO₂). These pollutants have National Ambient Air Quality Standards (NAAQS) set for each that are designed to protect the public health and welfare. Other pollutants of concern, although designated as non-criteria and without national concentration standards, are regulated through various federal and programs designed to limit their emissions and public exposure. These programs include federal source-specific Hazardous Air Pollutants (HAPs) limits promulgated under 40 CFR 61 (NESHAPS) and 40 CFR 63 (MACT). Any potential applicability to these programs were discussed above under REGULATORY APPLICABILITY. There was no change to the emissions of any non-criteria regulated pollutants as a result of the modifications evaluated herein.

AIR QUALITY IMPACT ANALYSIS

The estimated maximum emissions of the modification are less than applicability thresholds that would define the proposed modification as “major” under 45CSR14 and, therefore, no air quality impacts modeling analysis was required. Additionally, based on the nature and location of the proposed source, an air quality impacts modeling analysis was not required under §45-13-7.

MONITORING, COMPLIANCE DEMONSTRATIONS, REPORTING, AND RECORDING OF OPERATIONS

No substantive changes were made to the monitoring, compliance demonstration, reporting, and record-keeping requirements (MRR) in the draft permit other than that effected by the change in rule applicability from 40 CFR 60, Subpart JJJJ to 40 CFR 63, Subpart ZZZZ.

PERFORMANCE TESTING OF OPERATIONS

There are no substantive performance testing requirements for the proposed engines under the draft permit.

CHANGES TO PERMIT R13-3369

The substantive changes made to Permit R13-3369 were limited to removing Sections 8 and 9 of the permit that provided the 40 CFR 60, Subpart JJJJ/OOOOa (rod packing) requirements and adding 40 CFR 60, Subpart ZZZZ requirements under Section 12.0 of the draft permit.

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates that compliance with all applicable state and federal air quality regulations will be achieved. Therefore, I recommend to the Director the issuance of a Permit Number R13-3369A to Greylock Midstream, LLC for the proposed modification of the Mabie Compression Station located near Cassity, Randolph County, WV.

Joe Kessler, PE
Engineer

Revised Date