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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-2823D
Plant ID No.:	041-00013
Applicant:	Dominion Transmission, Inc.
Facility Name:	Lightburn Facility
Location:	Lewis County
NAICS Code:	211112
Application Type:	Modification
Received Date:	June 27, 2014
Engineer Assigned:	Joe Kessler
Fee Amount:	$4,500
Date Received:	July 15, 2014
Complete Date:	August 7, 2014
Due Date:	November 5, 2014
Applicant Ad Date:	July 9, 2014
Newspaper:	*Weston Democrat*
UTM's:	Easting: 547.43 km Northing: 4,331.28 km Zone: 17
Latitude/Longitude:	39.13194/-80.44917
Description:	Replacement of two (2) flares controlling both existing glycol dehydrator units (DEHY01 and DEHY02) with new enclosed flares. The glycol dehydrator units (GDUs) are not subject to this permitting action.

Dominion Transmission, Inc.'s (Dominion) Lightburn Facility is currently operating under two different New Source Review (NSR) permits (as well as having a portion of the facility that remains grandfathered): R14-0009E and R13-2823C. Permit R14-0009 was issued on May 3, 1993 (to, at the time, CNG Transmission Corporation) for the construction of two (2) natural gas compressor engines, one (1) auxiliary generator, one (1) glycol reboiler, and one (1) water boiler at the existing Lightburn Compressor Station. At that time, the station already was a major source with significant compression capability and a GDU. Since that time, Permit R14-0009 has been modified and administratively updated several times with minor changes to the permit:

- On May 16, 2001, Permit R14-0009A (modification) was issued to Dominion for an authorized increase in allowable CO emissions from the compressor engines;

- On July 8, 2002, Permit R14-0009B (modification) was issued to Dominion for the replacement of the emergency generator;

- On March 7, 2007, Permit R14-0009C (Class I Administrative Update) was issued to Dominion for the revision of the language concerning the filling of the underground mercaptan tank under A.7;

- On May 8, 2008, Permit R14-0009D (Class I Administrative Update) was issued to Dominion for the removal of the speciated hazardous air pollutant (HAP) emissions from A.3 of the permit; and

- On January 7, 2009, Permit R14-0009E (Class II Administrative Update) was issued to Dominion for the replacement of 10 mmBtu/hr boiler (005-02) with a smaller 5 mmBtu/hr boiler.

On April 13, 2010, Dominion was issued R13-2823 for the construction of the Lightburn Extraction Plant located adjacent to the existing compressor station. The facility was determined to be "one-source" with the compressor station and the potential-to-emit (PTE) of the facilities aggregated for purposes of program applicability. Since that time, permit R13-2823 has been modified and administratively updated several times with minor changes to the permit:

- On May 2, 2011, Permit R13-2823A (modification) was issued to Dominion for the installation of a new auxiliary 150 kW emergency generator;

- On October 26, 2012, Permit R13-2823B (Class II Administrative Update) was issued to Dominion for throughput limit changes in the extraction plant, natural gas liquids (NGL) loading racks, and NGL storage tanks; and

- On March 17, 2014, Permit R13-2823C (Class II Administrative Update) was issued to Dominion to change the model name and horsepower ratings of the existing emergency fire pump engines.

DESCRIPTION OF PROCESS/MODIFICATIONS

Dominion has submitted a permit application to replace the two (2) existing GDU (DEHY01 and DEHY02) flares with two (2) new Questor Q250 enclosed flares (each rated at a 539.5 acfm and with a 0.05 mmBtu/hr natural gas-fired pilot light). DEHY01 is a grandfathered unit and the DEHY02's reboiler was permitted under R14-0009 in 1993 (see above). However, Permit R14-0009 does not contain any limitations pertaining to DEHY02 with the exception of limitations on the combustion exhaust of the reboiler (it appears the remainder of the GDU is also grandfathered). For that reason, as this permitting action only addresses the flares themselves (as emission units), and the associated 45CSR6 and 40 CFR 63, Subpart HHH applicability, it was deemed appropriate to permit these units under R13-2823D.

The new flares will, same as the old flares, be used to control the regenerator overheads from the still vents of the GDUs at a minimum hydrocarbon combustion rate of 95%. As there are no process changes proposed for the GDUs, there will be no PTE changes in emissions from the GDUs or the pass-through emissions at the flare. It is important to note that the GDUs are not subject to this permitting action and remain grandfathered.

SITE INSPECTION

Due to the nature of the modification, the writer did not conduct a site inspection. According to information in the DAQ database, the last on-site inspection occurred on June 27, 2013 by Mr. James Jarrett of the Compliance/Enforcement Section. The facility was given a status code of "10 - Out of Compliance" as a result of the inspection (violations included the use of different fire pump engines than were listed in the permit which was corrected in Permit R13-2823C).

AIR EMISSIONS AND CALCULATION METHODOLOGIES

As stated above, there are no expected changes in facility PTE as a result of the replacement of the GDU flares. Emissions generated by the new flares are limited to those emissions (ignoring the nominal contribution by the small natural gas-fired pilot light) generated by combustion of the waste matter at the flares (in the same manner as the old flares).

REGULATORY APPLICABILITY

The GDU flares are subject to 45CSR6, 45CSR13 and 40 CFR 63, Subpart HHH. Each applicable rule and Dominion's compliance therewith will be discussed in detail below with respect to the GDU flares.

45CSR6: To Prevent and Control Particulate Air Pollution from Combustion of Refuse

Dominion has proposed replacement of the existing GDU flares with new enclosed flares. The new flares each meet the definition of an "incinerator" under 45CSR6 and are, therefore, subject to the requirements therein. The substantive requirements applicable to the flare are discussed below. It is important to note that under §45-6-1.1(a), the language reads "[t]his rule establishes emission standards 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." While 40 CFR 63, Subpart HHH does have applicable requirements for the flares (see below), this rule does not address potential particulate matter emissions from flares. Therefore, it is determined that 45SCR6 does apply to the new GDU flares.

45CSR6 Emission Standards for Incinerators - Section 4.1

Section 4.1 limits PM emissions from incinerators to a value determined by the following formula:

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

Based on information included in the application, the maximum vapor mass sent to each flare will be 1,454.3 lb/hr (0.73 tons/hour). Based on the above equation, the particulate matter limit of each flare is 3.96 lbs/hr. Particulate matter emissions from the flare are expected to be negligible. However, for a conservative estimate, based on an AP-42, Chapter 13.5 emission factor for a lightly smoking flare, Dominion calculated a particulate matter emission rate from each flare at 0.87 lbs/hr. This particulate matter emission rate is below the 45CSR6 limit.

45CSR6 Opacity Limits for - Section 4.3, 4.4

Pursuant to Section 4.3, and subject to the exemptions under 4.4, each flare has a 20% limit on opacity during operation. Proper design and operation of the flare should prevent any substantive opacity from the flares.

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

Pursuant to 45-13-§2.17(f)(1), "[i]nstallation or replacement of air pollution control equipment, provided that such new equipment is at least as effective in the control of air pollutant emissions as any equipment replaced and that no new air pollutant discharge results from its installation" is not defined as a modification under 45CSR13. The replacement of the GDU flares would seem to qualify for this exemption. However, under 45CSR13, the definition of "stationary source" includes the following language: "is subject to any substantive requirement of an emission control rule promulgated by the Secretary." Therefore, in accordance with DAQ policy and using the dual-source definition common in air permitting, the new GDU flares are individually defined as "stationary sources" due to the applicability to the PM standard under 45CSR6 which has been determined to be substantive. 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, Dominion is required to obtain a permit under 45CSR13 for the construction and operation of the new GDU flares. However, it is important to note that the permit will only address the new flares' applicability to 45CSR6 and will not extend to the grandfathered GDUs.

As required under §45-13-8.3 ("Notice Level A"), Dominion placed a Class I legal advertisement in a "newspaper of general circulation in the area where the source is . . . located." The ad ran on July 9, 2014 in the *Weston Democrat* and the affidavit of publication for this legal advertisement was submitted on July 24, 2014.

45CSR14: Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration - (NON APPLICABILITY)

The Lightburn Facility is defined as a "major stationary source" under 45CSR14. The aggregate PTE associated with both GDUs (as given under Table 3-1 in Attachment N of the permit application) is less, on a pollutant by pollutant basis, than the "significant" thresholds under 2.74(a) and therefore, this replacement of the GDU flares (the only "emission units" subject to permitting under this action) will not be defined as a "major modification" under 45CSR14.

40 CFR 63, Subpart HHH: National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities

Subpart HHH applies to owners and operators of natural gas transmission and storage facilities that transport or store natural gas prior to entering the pipeline to a local distribution company or to a final end user (if there is no local distribution company), and that are major sources of HAPs emissions. Dominion's Lightburn facility is a major source of HAPs and is defined as a natural gas transmission and storage facility that meets the above description. Therefore, applicable affected sources are subject to Subpart HHH. GDUs are included as affected facilities and both the GDUs at the Lightburn facility are already subject to Subpart HHH. One choice for compliance with the GDU emission standards under §63.1275(b)(1)(i) is to use a flare pursuant to the requirements of §63.1281. Therefore the flares used for controlling the GDU regenerator overheads shall be subject to the control device requirements given specifically under §63.1281(d)(1)(i).

TOXICITY ANALYSIS OF NON-CRITERIA REGULATED POLLUTANTS

There was no substantive increase in the emissions of any non-criteria regulated pollutants associated with the proposed modification evaluated herein.

AIR QUALITY IMPACT ANALYSIS

As the modification evaluated herein was not deemed to be a "major modification" under 45CSR14, no air dispersion modeling was required under 45CSR14. Additionally, based on the nature of the proposed modification, modeling was not required under 45CSR13, Section 7.

MONITORING, COMPLIANCE DEMONSTRATIONS, REPORTING, AND RECORDING OF OPERATIONS

As the requirements pertaining to the new GDU flares are limited to applying 45CSR6 and 40 CFR 63, Subpart HHH, no monitoring outside of the applicable rules was included.

PERFORMANCE TESTING OF OPERATIONS

No performance testing was required.

CHANGE TO PERMIT R13-2823C

The substantive changes to Permit Number R13-2823C were the following:

- The flares were added to the emission unit table under 1.0 of the permit; and
- Section 14.0 was added to the permit to place in the requirements pertaining to the flares and the applicability to 45CSR6 and 40 CFR 63, Subpart HHH.

RECOMMENDATION TO DIRECTOR

The information provided in permit application R13-2823D indicates that compliance with all applicable state and federal air quality regulations will be achieved. Therefore, I recommend to the Director the issuance of Permit Number R13-2823D to Dominion Transmission, Inc. for a modification of the Lightburn Facility located near Jane Lew, Lewis County, WV.

_____
Joe Kessler, PE
Engineer

_____
Date