West Virginia Department of Environmental Protection
Division of Air Quality

Fact Sheet

For Final Renewal Permitting Action Under 45CSR30 and Title V of the Clean Air Act

Permit Number: **R30-10900019-2012**
Application Received: December 20, 2010
Plant Identification Number: 109-00019
Permittee: **Dominion Transmission, Inc.**
Facility Name: **Loup Creek Station**
Mailing Address: 445 West Main Street, Clarksburg, WV 26301

Physical Location:	Kopperston, Wyoming County, West Virginia
UTM Coordinates:	449.31 km Easting • 4176.86 km Northing • Zone 17
Directions:	From I-77 at Harper Road, turn onto State Route 3 north for 10.4 miles. Turn onto Route 99 west for 14.3 miles. Turn left on Route 85 and travel 4 miles to Kopperston Grade School. Turn left on private road to Loup Creek Station.

Facility Description

Loup Creek Compressor Station is a natural gas transmission facility covered by Standard Industrial Classification (SIC) Code 4922. The station has the potential to operate seven (7) days per week, twenty-four (24) hours per day. The station consists of four (4) natural gas fired reciprocating compressor engines, one reciprocating emergency generator, one (1) dehydrator reboiler, one (1) dehydration unit with flare, and storage tanks of various sizes.

Emissions Summary

Plantwide Emissions Summary [Tons per Year]

Criteria Pollutants	Potential Emissions	2009 Actual Emissions
Carbon Monoxide (CO)	92.4	74.90
Nitrogen Oxides (NO_X)	406.8	373.67
Particulate Matter (PM_{10})	1.39	0.99
Total Particulate Matter (TSP)	1.39	0.99
Sulfur Dioxide (SO_2)	0.08	0.06
Volatile Organic Compounds (VOC)	102.4	88.05

PM_{10} is a component of TSP.

Hazardous Air Pollutants	Potential Emissions	2009Actual Emissions
Formaldehyde	7.5	3.5
Benzene	0.6	0.2
Toluene	0.8	4.4*
Ethylbenzene	1.0	0.0
n-Hexane	0.1	0.2
Xylene	1.8	4.1
Acetaldehyde	0.1	0.1
Acrolein	0.1	0.1

Some of the above HAPs may be counted as PM or VOCs.

* The new flare utilized by the dehydration unit was not installed until after the July 12, 2010 Rule 13 permit number R13-2839 was issued. Therefore, the new potential emissions take into account enhanced control where the 2009 actual emissions do not.

Title V Program Applicability Basis

This facility has the potential to emit 406 tons of NOx and 102 tons of VOC. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, Dominion Transmission, Inc. is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

This facility has been found to be subject to the following applicable rules:

Federal and State:	45CSR2	Opacity Requirements for boilers
	45CSR6	Open burning prohibited.
	45CSR10	Sulfur requirements for fuel burned
	45CSR11	Standby plans for emergency episodes.
	45CSR13	New Source Construction
	45CSR17	Control fugitive particulate matter
	WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
	45CSR30	Operating permit requirement.
	40 C.F.R. Part 61	Asbestos inspection and removal
	40 C.F.R. Part 82, Subpart F	Ozone depleting substances
	40 C.F.R. 60, Subpart JJJJ	NSPS for SI -RICE
	40 C.F.R. 63, Subpart ZZZZ	Area Source RICE Standards
	40 C.F.R. 63, Subpart HH	Area Source Natural Gas Production
State Only:	45CSR4	No objectionable odors.

Each State and Federally-enforceable condition of the draft Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the draft Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the draft Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit *(if any)*
R13-2839A	02-28-2011	
R13-2324B	11-20-2001	

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table B" which may be downloaded from DAQ's website.

Determinations and Justifications

The following describes changes to the most recent Title V permit for this facility.

Changes to Section 2.0 boilerplate language for General Conditions:

Condition 2.1.4 was added as new boilerplate language to clarify the intent of "rolling yearly total"

Changes to Section 3.0 boilerplate language for facility wide requirements:

- Condition 3.1.1and 3.1.2 were updated with new open burning language in accordance with 45CSR6
- Condition 3.1.3 was updated with new asbestos language and an updated 45CSR34 citation because it now incorporates 40 C.F.R. 61, whereas 45CSR15 was repealed.
- Condition 3.3.1.d was added with respect to submitting stack test reports
- Condition 3.7.2 was added to address the non-applicability of CAM within this 2nd renewal permit

Additional changes within section 3.0:

Permit conditions 3.1.13, 3.1.14, and 3.1.15 were all removed from this section of the permit as they pertained to the 300 Hp Auxiliary Generator (Aux), which was removed from service and replaced by a new Cat., 367 Hp unit. As a result of these omissions, the testing requirements of 3.3.2 and 3.3.3 were updated to remove all references to permit condition 3.1.15. Additionally, the record keeping provision of 3.4.4 was removed as it pertained to conditions 3.1.13 and 3.1.14. Lastly, all citations related to minor source NSR permit number R13-2324B were changed to R13-2324. This is a result of section 1.2 accounting for the permit modification identifier.

The opacity monitoring requirement of 3.2.1 was removed. This monitoring was originally devised to demonstrate compliance with the 20% opacity limit of 45CSR6 however, due to the opacity requirement now being streamlined with the zero opacity limit incorporated by permit condition 5.1.6, a new overall monitoring requirement was added as permit condition 5.3.2.

Also within this section the testing frequency specified within conditions 3.2.2 and 3.2.3 was revised. This testing corresponds to compliance with sulfur dioxide and hydrogen sulfide standards as incorporated by permit requirements 3.1.9 and 3.1.10 respectively. The writer reduced the sampling frequency due to a significant compliance margin observed within the historic sampling records. Therefore, the sampling frequency was decreased from annually to once per permit term (every five years).

Changes within section 5.0:

Streamlining language was added to condition 5.1.2 to recognize the more stringent "no visible emissions requirement" for federally enforceable flares under 5.1.6.b. This same logic was used to also streamline the 20% opacity and 40% startup opacity standards under the 45CSR6 incinerator requirements of 5.1.8 and 5.1.9 of the proposed permit.

It should be noted that the different compliance methods were evaluated as related to each of these standards when deciding to streamline the two opacity requirements. The 45CSR6 opacity standard for incinerators is based on Method 9 measurements, which quantifies opacity in order to assess compliance with the 6 minute block average opacity limit of 20%. This regulation also allows up to 40% opacity not to exceed 8 minutes during startup. When this is compared to the "no visible emissions requirement" for federally enforceable flares the writer noted that the associated compliance method consisted of a two hour observation period using Method 22, which allows visible emissions for no more than 5 minutes in any two hour period.

During this review, some hypothetical cases were evaluated to justify streamlining. The first of which tried to address whether or not a source could be in compliance with the "no visible emissions requirement" and not be in compliance with the seemingly less stringent 20% opacity standard of 45CSR6. In order to compare the different averaging times and opacity observation methods (Method 22 vs Method 9) the following scenario was evaluated:

Assume that the flare was just on the verge of failing the 2 hour compliance demonstration, in which during the first five minutes of the test the flare was smoking, but at the five minute mark the visible emissions dissipated and the flare starting burning with zero opacity. As a result of this clear up, the source passed the "no visible emissions requirement" for the remaining 1 hour and 55 minutes of the 2 hour test. Now, hypothetically, in order for the flare to have violated the 20% opacity requirement of 45CSR6, which is the most stringent scenario if we assume this emission episode was not created during a startup condition, then the 6 minute block average opacity readings as calculated by method 9 would have consisted of 24, 15 second opacity reading. The easiest possible noncompliance case to envision would be for the first 16 (4 minutes) readings to be recorded at 30% opacity. Then, during the fifth minute, opacity drops off to zero by the first 15 second interval within the 6^{th} minute as such, (25, 20, 15, 10). This leaves the sixth minute of reading which would have to be (0, 0, 0, 0). By adding up all these 15 second reading over the 6 minute block, the method 9 reading would result in an average opacity of 22.9%, which could indeed exceed the 45CSR6 incinerator standard. However, after putting this hypothetical scenario back into a practical context it was recognized by the writer that since the flare control device is burning a waste gas stream with natural gas assist, we would rarely see opacity from this type of device under normal operating conditions. Therefore, if the flare was to exhibit an opacity reading of at least 30% for a 4 minute period, then there would likely have to be a catastrophic failure of the system, such as a combustion air fan failure or basically something that resulted in a starved air combustion condition. Taking this general control device knowledge into account as well as practical experience of assessing flares used on dehydration still columns, it is the writers' conclusion that the hypothetical case evaluated above is highly unlikely due to the fact that if there was a catastrophic failure resulting in excess opacity, then it wouldn't be conceivable that the flare could pass the rest of the two hour observation period with zero visible emissions. Therefore, the "no visible emissions" requirement would be viewed in the practical sense as the more stringent opacity standard and is sufficient for streamlining compliance with the 45CSR6 opacity standard of 20%. However, in order to assure any catastrophic failures are assessed in a timely manner and to address whether or not 45CSR6 is also being violated if the "no visible emission requirement" is exceeded, additional language was added to the monitoring and test provisions of this proposed renewal to assess the opacity using method 9 to quantify opacity any time it is observed from the flare. In addition to the 2 hour Method 22 verification of no visible emissions this should also assess compliance with the 20% opacity requirement on the short term six minute block average basis.

To summarize these findings, from a practical standpoint it is assumed safe to say that if a flare is in compliance with the "no visible emission requirement" then it will also be in compliance with the 20% requirement from 45CSR6. However, if the compliance scenario is reversed and the flare is found to not be in compliance with the "no visible emission requirement," then it is necessary to then conduct a method 9 assessment in order to determine whether compliance with 45CSR6 is also being compromised.

Permit condition 5.1.12 was added to incorporate the applicability date of 40 C.F.R 63, Subpart HH area source requirements.

Condition 5.1.13 was added to incorporate the general standards from 40 C.F.R. 63, Subpart HH as well as the specific glycol optimization standards of the Regulation. Additionally, within this requirement the exemption criteria is also incorporated in accordance with the threshold of "less than 1 ton/yr actual average benzene emissions". By incorporating the benzene exemption of 1 ton/yr into this permit condition the writer was able to eliminate section 6.0 of the existing Title V permit by adding the overlapping 45CSR13 permit citations to this permit term.

Condition 5.1.14 was added to address timing of implementing the glycol optimization requirement of 5.1.13 should the exemption criteria be exceeded.

New monitoring language was incorporated within, 5.2.1, in order to provide a means of collecting operating data sufficient to demonstrate compliance with the emissions limits, minor HAP source status, as well as the 1 ton/yr benzene exemption threshold for subpart HH.

Testing condition 5.3.1 was modified to adjust the frequency of testing the wet natural gas content entering the dehydration unit. This new condition removed the requirement to test the unit within 180 days of permit issuance due to the source exhibiting a healthy compliance margin based on samples taken on 1-15-2011. Although the gas composition has been known to change over time, the emission unit is now controlled by a flare, which will minimize the resulting emission increased due to fluctuations of the incoming gas composition. Additionally, the

requirement to sample the wet gas within the last two years of the permit term was changed to, "within the 3th year of the permit term". This change is designed to allow one full calendar year of data to be collected within the 3th year of the Title V term. The writer determined this to be necessary in order to correlate with the emission demonstration methods specified under 40 C.F.R. 63, Subpart HH, where calendar year actual annual average operations are allowed to be used, when evaluating actual emission rather than the unit potential for establishing applicability to various levels of control under the Federal Standard.

Test condition 5.3.2 was modified to include a second paragraph to assess compliance with the 20% opacity requirement of 45CSR6 should the "no visible emission" requirement be exceeded. Please note that it is the "no visible emission requirement" as discussed in the preceding text that streamlines compliance with 45CSR6 opacity requirements.

Testing condition 5.3.5 was added to incorporate the area source, subpart HH, provisions for testing. It was also recognized by the writer within streamlining language following this condition that the requirement is satisfied by complying with the more specific requirements of 5.2.1 and 5.3.1 within the proposed permit. As a result, a new record keeping provision was added as 5.4.1. This requirement is to encompass keeping records of all supporting HAP determination data related to the GLYCalc emission estimation software run(s), which is designed to document and support the inputs to the estimating model.

The recordkeeping of VE checks in the existing permit condition 5.4.1 were deleted and the new requirement discussed above added for HAP accounting purposes. The previous opacity record keeping language was determined to be unnecessary in light of streamlining the 45CSR6 opacity requirements with those of the federally enforceable flare provisions "no visible emissions" of 5.1.6.b and this condition already having a recordkeeping component specified within 5.4.6.

Within condition 5.4.3 clarifying text was added to elaborate on the need to keep records of the flare design evaluation even if the specific Method 2 and 18 testing is not initiated by the Director.

Within 5.4.4 a typo was fixed that came from the Rule 13 permit. The reference to 5.1.6 was changed to 5.1.5 since 5.3.4 is associated with HAP thresholds and not flare testing as specified within 5.1.6.

Streamlining language was added to condition 5.4.7, in order to recognize the record keeping associated with wet natural gas throughput that is already encompassed within 5.4.5 via encompassing records from 5.2.3 monitoring.

The reporting provisions of 5.5.2 were updated with more specific language, within the proposed permit, in order to establish a means of demonstrating compliance via a self-monitoring report. This is determined necessary to maintain compliance with minor source applicability thresholds, the 45CSR13 permitted emission limits, and the 1 ton per year benzene exemption threshold from the 40 C.F.R. 63, Subpart HH Area Source provisions. In accordance with the Company's request, this report shall be submitted concurrently with overlapping emissions inventory requirements. This reporting is also tied to the timing specified within 5.3.1, which requires wet gas testing within the 4th year of the permit term. This timeline was chosen in order to allow a complete calendar year of operating data to be collected within the year the sample was taken. By grouping the operating data into a calendar year the annual average values can be tabulated as required for inputs to the GLYCalc emission estimating software. Then, at the end of the year, time is allowed to compile all data and emission estimates, before the March 31st submittal deadline. Since, a Title V renewal application has to be submitted within the last 6 months of the permit term, the timing related to the March 31st deadline should produce a report to WV DAQ within sufficient time for review prior to receiving the Title V application. It is also specified the report be included within the Title V renewal application as well.

Within condition 5.5.3 a typo was corrected, which resulted from the incorporation of the 45CSR13 permit condition. This condition originally referenced 5.3.4 as the testing provision that would require a protocol to be submitted as well as other test date and reporting criteria. It was assumed by the writer that condition 5.3.3 would have been the appropriate cross reference, since 5.3.4 would not have required a protocol.

New Requirements incorporated within section 6.0 and Section 7.0 of the proposed renewal permit

In accordance with R13-2839A, a new section was added to the permit to incorporate NSPS, Subpart JJJJ requirements for a new emergency generator installed at the facility in 2010. This project includes the replacement of the existing auxiliary generator (AUX) with a new Caterpillar G3406, 367 hp, emergency generator (EG-01). Section 6.0 includes all the minor source NSR construction/modification permit requirements and section 7.0 encompasses all the NSPS requirements related to the emergency engine. Updating the renewal permit to incorporate the requirements for the new emergency generator also incorporates the same changes as originally proposed within Title V permit application R30-10900019-2006(SM02) received on November 8, 2010. Therefore, (SM02) as referenced above was rolled into this renewal permitting action.

New Requirements incorporated within section 8.0 and Section 9.0 of the proposed renewal permit

40 CFR 63, Subpart ZZZZ RICE MACT Applicability
Three of the engines are existing spark-ignition (SI) two-stroke lean burn (2SLB) Cooper GMV-8TF Reciprocating Engines/Integral Compressors that combust pipeline quality natural gas and are rated at 880 Hp. The fourth compressor engine is a Caterpillar G3516 (4SLB) RICE rated at 1085 Hp. These engines meet the definition of reciprocating internal combustion engines (RICE) according to 40 CFR § 63.6685(a):

Since, this facility is not a major source of HAPS, the 40 C.F.R. 63, subpart ZZZZ area source requirements apply. The horsepower range for the three 2SLB engines fit into the greater than 500 hp category as established by the regulation.

The three (2SLB) engines are subject to the maintenance requirements (every 4,320 hours change oil/filter, inspect spark plugs, and inspect hoses/belts).

The (4SLB) engine is also in the greater than 500 hp category and is subject to CO limitations, which will require testing to establish compliance as well as to develop continuous compliance operating limits.

Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:

40 CFR 64-Compliance Assurance Monitoring. This is the second permit renewal for this facility. At the time of the first renewal, CAM was determined not to be applicable to the sources at this facility. Since the first renewal the facility has been modified to permit a new triethylene glycol dehydration unit along with its' associated flare control device under minor NSR permit R13-2839. These requirements were incorporated by a significant modification to the Title V permit under R30-10900019-2006(SM01) on September 27, 2010.

After careful review, the writer determined, that although the dehydration unit reboiler "still vent" would qualify as a PSEU for HAPs as well as VOCs the Title V permit now included control device monitoring, recordkeeping, and reporting which meets the definition of CAM. The MRR for the flare is equivalent to that established under the federal flare provisions of 40CFR§63.11(b). Therefore, the writer has determined that the facility modifications which took place after the original permit issuance should be exempt from CAM due to the compliance monitoring and testing requirements incorporated within the facility's existing Title V permit. The control device is currently required to continuously monitor pilot light availability and periodically test opacity, which is held to zero visible emissions except for periods not to exceed 5 minutes in any two hour period. Additionally, the flare had to conduct a design evaluation to assure compliance with the minimum BTU and maximum tip velocity requirements. This exemption is cited under 40CFR64.2(b)(1)(vi) due to the source already having a continuous compliance determination method in place within their Title V permit that satisfies the Part 64 definition of this term.

Greenhouse Gas Permitting - This is a renewal Title V permit and there have been no modifications that

would have triggered a PSD permit. Therefore, there are no applicable GHG requirements.

Request for Variances or Alternatives

None

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Beginning Date: November 9, 2011
Ending Date: December 9, 2011

All written comments should be addressed to the following individual and office:

Jesse Hanshaw, P.E.
Title V Permit Writer
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304

Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Point of Contact

Jesse Hanshaw, P.E.
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: 304/926-0499 ext. 1216 • Fax: 304/926-0478

Response to Comments

The company submitted the following comment by email on November 30, 2011.

From: Richard B Gangle [mailto:richard.b.gangle@dom.com]
Sent: Wednesday, November 30, 2011 8:25 AM
To: Hanshaw, Jesse W
Subject: Dominion's Loup Creek R30-10900019-2011

I had one comment on the draft Title V for Loup Creek.

Condition 5.3.2, the last sentence of the 2nd paragraph states that, "Any time opacity is observed and a Method 9 assessment is required, the permittee shall trigger the notification requirements

as defined within 5.5.1 of this permit." Condition 5.3.2 in the 1st sentence of the 2nd paragraph requires a Method 9 any time VE is observed. Condition 5.5.1 is for reporting of violations/deviations of visible emissions from observations made using Method 9 or 22.

VE found outside a Method 22 or 9 (during an any time event of 5.3.2 1st sentence 2nd paragraph) should not be automatically considered a violation/deviation. This observation would likely be from someone not trained /capable of performing a Method 9/22 and as such is not qualified to make that determination. I have no issue with reporting of the Method 9 results from an "any time" event, but as it currently reads the "any time" observation is considered a deviation/violation even before the Method 9 is performed.

I would suggest removing the last sentence of the 2nd paragraph in 5.3.2. Let me know what you think or if you wish to discuss.

Thanks;

Richard Gangle
Gas Environmental Services
Dominion Resources Services, Inc.
Phone: 304-627-3225
Cell: 304-677-0976
Fax: 304-627-3222

Permit condition 5.3.2 as referenced within Dominion's comments above, was originally proposed within the Draft permit as follows:

> In order to demonstrate compliance with the flare opacity requirements of 5.1.6.b the permittee shall conduct a Method 22 opacity test for at least two hours. This test shall demonstrate no visible emissions are observed for more than a total of 5 minutes during any 2 consecutive hour period using 40CFR60 Appendix A Method 22. The permittee shall conduct this test within one (1) year of permit issuance or initial startup whichever is later. The visible emission checks shall determine the presence or absence of visible emissions. At a minimum, the observer must be trained and knowledgeable regarding the effects of background contrast, ambient lighting, observer position relative to lighting, wind, and the presence of uncombined water (condensing water vapor) on the visibility of emissions. This training may be obtained from written materials found in the References 1 and 2 from 40 CFR part 60, appendix A, Method 22 or from the lecture portion of 40 CFR part 60, appendix A, Method 9 certification course.
>
> Additionally, if emissions are observed at any time the flare is in operation, the permittee shall quantify the opacity using a certified Method 9 observer as soon as practicable. Compliance with the "no visible emission requirement" of the federally enforceable flare provisions (5.1.6.b) will be considered to be in violation if emissions are observed for more than 5 minutes within a 2 hour timeframe. Additionally, compliance with the 20% opacity requirement of 45CSR6 shall be assessed by Method 9 for each six minute period, opacity is observed or assumed to be operating in noncompliance until the problem is fixed.
> At any time opacity is observed and a Method 9 assessment is required, the permittee shall trigger the notification requirements as defined within 5.5.1 of this permit.
> [**45CSR13, R13-2839, 6.3.1, and 45CSR§30-5.1.c][F1]**

In response to the Company's concerns the language of permit condition 5.3.2. was changed to the following:

> In order to demonstrate compliance with the flare opacity requirements of 5.1.6.b the permittee shall conduct a Method 22 opacity test for at least two hours. This test shall demonstrate no visible emissions are observed for more than a total aggregate of five (5) minutes during any 2 consecutive hour period using 40CFR60, Appendix A, Method 22. The permittee shall conduct this test within one (1) year of permit issuance or initial startup whichever is later. The visible emission checks shall determine the presence or absence of visible emissions. At a minimum, the observer must be trained and knowledgeable regarding the effects of background contrast, ambient lighting, observer position relative to lighting, wind, and the presence of uncombined water (condensing water vapor) on the visibility of emissions. This training may be obtained from written materials found in the References 1 and 2 from 40 CFR part 60, appendix A, Method 22 or from the lecture portion of 40 CFR part 60, appendix A, Method 9 certification course.
>
> Additionally, at any time the flare is in operation and opacity is observed from the flare, the cause of excess opacity shall be assessed and a Method 22 visual emissions reading shall be conducted within 48 hours of the initial observation. The Method 22 readings shall be conducted for an amount of time adequate to assess whether visible emissions are present for a period of time greater than an aggregate of five (5) minutes over any two (2) consecutive hour period. If visible emissions are present for an aggregate of 5 minutes or greater as stated above, the source will be in violation of permit condition 5.1.6.b. At this time, the permittee shall then be required to assess compliance with the 20% opacity requirement of 45CSR6 using a certified Method 9 observer as soon as practicable.
>
> Regardless of whether the flare meets the 20% opacity limit of 45CSR6, compliance with the "no visible emission requirement" of permit condition (5.1.6.b) will be considered, in violation, if emissions are observed for an aggregate of more than 5 minutes within any two (2) consecutive hour timeframe. Therefore, the permittee shall be required to submit the notification requirements as defined within 5.5.1 of this permit. If timing allows the results of the Method 9 observation(s) related to the compliance assessment for 45CSR6 shall also be submitted as part of the notification.
> [**45CSR13, R13-2839, 6.3.1, and 45CSR§30-5.1.c][F1]**

Mike Gordon from EPA, Region III submitted the following comments via email on November 15, 2011. These comments have been responded to in red text under each of the individual entries as follows:

Section 3 - Facility Wide Requirements:
3.1.12 and 3.3.2-3 appear to be source specific requirements. They should be moved to the correct section

These changes were made. The cited permit conditions were moved to section 9.0 of the renewal permit.

Section 4:
4.2.1 There needs to be a set monitoring frequency for the VE testing (initial method 22 testing with method 9 follow up only if VEs are detected is OK with me)

Since the reboiler is less than 10 MMBtu/hr, 45CSR2 exempts the unit from periodic opacity monitoring as follows:

§45-2-11. Exemptions.

> 11.1. Any fuel burning unit(s) having a heat input under ten (10) million B.T.U.'s per hour will be exempt from sections 4, 5, 6, 8 and 9. However, failure to attain acceptable air quality in parts of some urban areas may require the mandatory control of these sources at a later date.

Therefore, DAQ doesn't typically require periodic VE testing of these small fuel burning units unless there is a history of compliance problems.

Section 5:
5.1.1 How are they demonstrating compliance with the 1.4 lb/hr PM limit?

Basically, since this is a waste gas flare assisted by natural gas the source exhibits a large compliance margin, based on AP-42 factors for elevated flares, therefore, the source is assumed to be in compliance with the weight rate PM limit by meeting the "zero visible emission requirements". The factsheet has been revised to reflect this fact.

5.1.5 I had wrote an email before asking about this requirement. I don't know how the HHH reference got thrown in there but if it would be difficult for you to fix I'd recommend adding a not in the fact sheet stating that HHH is not applicable and that this condition was just using boilerplate language or adding a similar not to the TV permit.

The nonapplicable HHH language was removed from the referenced Rule 13 requirement within the Title V, since it did not apply to this facitliy.
Therefore, condition 5.1.1 was revised as follows:

~~For purposes of determining potential HAP emissions at transmission and storage facilities to comply with the requirements in Section 3.1.13 the methods specified in 40 CFR 63, Subpart HHH shall be used.~~ For purposes of determining potential HAP emissions at production-related facilities, the methods specified in 40 CFR 63, Subpart HH (i.e. excluding compressor engines from HAP PTE) shall be used.
[**45CSR13, R13-2839, 6.1.3]**

5.1.6.d
Change wording to "A flare shall be used only with the net heating value ....." and "or with the net heating value of the gas being combusted" to be consistent with subpart HH wording.

5.1.6.e
remove, "as appropriate, but is not required to be determined using these Methods (unless designated by the Director)" to be consistent with HH wording.

With respect to the comments pertaining to 5.1.6 above, which are related to the flare design and operating requirements, these permit conditions do closely mirror the Federal flare requirements of 63.11 and/or 60.18, but were not intended to match exactly because the source is not subject to any Federal control requirement. These requirements are a result of DAQ's efforts to establish a synthetic minor source for sources which have experienced technical difficulties using method 18 and method 2 to assess flare compliance. This is primarily due to the small diameter, less than 4 inches, vent lines as well as the saturated moisture content of these streams. Therefore, the federal flare provisions were tailored to allow a design analysis to be conducted in order to verify the flare is being operated in a manner which would be indicative of at least 95% control efficiency based on the Federal BTU and tip velocity guidelines for flares. As a result, of the source not being subject to a Federal subpart, which would require the specific flare provisions to be adopted exactly as stated within the General Provisions, the control requirements of the 45CSR13 permit are the governing mechanism and therefore, cannot be deviated from within this Title V renewal permit.

5.1.14
If benzene emissions are over 1 TPY, also potentially subject to 63.765 and 63.773

Due to the sources synthetic minor status for HAPs, I don't believe 63.765 would apply unless they were located within 2 miles of an urban cluster as stated in 63.764(d)(1)(i). Therefore, the glycol optimization requirement of 63.764(d)(2)(i) through (iii) is all that applies if the 1 tpy benzene exemption is exceeded. Additionally since they source is not using controls required by subpart HH they would not be subject to the inspection requirements of 63.773

Emergency Generator:
Add MACT Subpart ZZZZ requirements (we talked about this on the phone)

Since the emergency generator in question was installed in 2011, the affected source is considered new and the facility has been defined as a synthetic minor source of HAPs, the subpart ZZZZ NESHAP indicates that compliance shall be demonstrated by complying with the JJJJ (SI NSPS). Therefore, according to EPAs guidance table "STEP 1b" the <500Hp emergency generator should only comply with NSPS JJJJ as applicable. Therefore, the 4J requirements which are included within the renewal permit seem to satisfy Subpart ZZZZ and no further MACT/GACT requirements are necessary.

Subpart HH Comments/Questions:
Recommend adding citations for 63 subpart HH where necessary

The part 63, subpart HH citation will be added where applicable.

Are there any storage vessels with the potential for flash emissions at the facility? If so, 63.766 and 63.773 apply.

Since the facility is an area source of HAPs the affected source designations of 63.760(b)(1)(ii), pertaining to storage vessels with flash potential, do not apply. The affected source for minor HAP sources is limited to only TEG dehydration units in accordance with 63.760(b)(2). Therefore, the referenced sections will not apply even if they had tanks meeting the definition of storage vessels with flash potential. However, it is interesting to note that even for major sources tanks with flash potential also have to meet a rather large throughput stipulation before they meet the definition.

Is the facility considered in vhap service? If they are , 63.769 could apply. Subpart HH says they are assumed to be in vhap service unless they demonstrate they are not. How are they demonstrating they aren't in VHAP service? (Should include recordkeeping requirements from 63.74(d)(1) and (2)

In accordance with 63.760(b)(1)(iii) this requirement would only apply to processing plants having equipment in VHAP service at major HAP sources. Even though Dominion's Loup Creek station is not considered a major source it is also not considered a natural gas processing plant. This term is a little misleading, but what it really means is a natural gas liquids extraction processing plant, where they remove the ethane, propane, and butanes from the field gas in order to allow it to meet transmission gas content standards.

Are there any covers or closed vent systems that need to meet requirements of 63.771? It would appear that there would need to be some type of closed vent system going from the dehy unit to the flare.

Since the source is a synthetic minor for HAPs and not located within 2 miles of an urban cluster the dehydration still is not subject to the federal control requirements of subpart HH and therefore, they are not subject to the closed vent requirements.

On December 8, 2011 public comments were received from the Law Office of Vincent Trivelli, PLLC. The original comment letter is included here as follows:

The Law Office of Vincent Trivelli, PLLC
178 Chancery Row
Morgantown, West Virginia 26505
Phone (304) 291-5223 • Toll Free 1-866-266-5948
Fax (304) 291-2240 • E-mail: vmtriv@westco.net

December 7, 2011

Jesse Hanshaw
WV Department of Environmental Protection
Division of Air Quality
601 57th Street
Charleston, WV 25304

RE: Dominion Transmission, Inc.
Loup Creek Compressor Station
Renewal Permit R30-10900019-2011

Dear Mr. Hanshaw:

Enclosed for your review are the comments prepared by Carpenter Environmental Associates, regarding the above-referenced matter. These comments are being submitted on behalf of the Affiliated Construction Trades Foundation, a division of the West Virginia Building and Construction Trades Council, AFL-CIO.

Should you have any question or comments regarding the enclosed, please feel free to contact me at (304) 291-5223.

Thank you.

Yours truly,

Vincent Trivelli

Enclosure

Technical and Regulatory Assessment

of

Renewal Permit R30-10900019-2011

by

West Virginia Department of Environmental Protection
Division of Air Quality

for

Loup Creek Compressor Station, Kopperston, Wyoming County, West Virginia
Dominion Transmission, Inc.

Assessment Performed

by

Carpenter Environmental Associates, Inc.
307 Museum Village Road
Monroe, NY 10950

For

Affiliated Construction Trades Foundation
Morgantown, West Virginia

December 2011

1.0 Overview

The West Virginia Department of Environmental Protection (WVDEP) has issued a *Draft Renewal Permit* (R30-10900019-2011) pursuant to the West Virginia Air Pollution Control Act to Dominion Transmission, Inc. The renewal is intended for the Title V operating permit for the Loup Creek Compressor Station in Wyoming County. The new permit replaces and supersedes existing permit R30-10900019-2006.

The Affiliated Construction Trades Foundation requested that Carpenter Environmental Associates, Inc. (CEA) review the permit with respect to technical sufficiency and regulatory applicability. This report is a summary of the requested technical and regulatory assessment. It was prepared with the assistance of EN3 Professionals, LLC.

2.0 Assessment of Key Air Pollutants

The Loup Creek Compressor Station is currently considered a major stationary source of emissions, with potential and actual emissions of criteria and hazardous air pollutants as in the table below.

Plant wide Emissions Summary [Tons per Year]		
Criteria Pollutants	**Potential Emissions**	**2009 Actual Emissions**
Carbon Monoxide (CO)	92.4	74.9
Nitrogen Oxides (NO_x)	406.8	373.67
Particulate Matter (PM_{10})	1.39	0.99
Sulfur Dioxide (SO_2)	0.08	0.06
Volatile Organic Compounds (VOC)	102.4	88.05
Hazardous Air Pollutants	**Potential Emissions**	**2009 Actual Emissions**
Formaldehyde	7.5	3.5
Benzene	0.6	0.2
Toluene	0.8	4.4
Ethylbenzene	1	0
n-Hexane	0.1	0.2
Xylene	1.8	4.1
Acetaldehyde	0.1	0.1
Acrolein	0.1	0.1

This assessment examines the principal air pollutants emitted from the facility. The grouping of air pollutants reflects the designations pursuant to the Clean Air Act and corresponding West Virginia statutes and regulations i.e. criteria, hazardous, other.

2.1 Criteria Air Pollutants

2.1.1 Nitrogen Oxides (NO_x)

NO_x form a class of gases emitted by the combustion process which lead to the creation of ground-level ozone (O_3), a precursor of smog. NO_x also are "acid gases" and contribute to acid rain and deposition. At elevated levels, NO_x can also cause respiratory problems in humans. At approximately 400 tons emitted per year, NO_x are the criteria pollutants with the largest emissions from the plant.

2.1.2 Volatile Organic Compounds (VOCs)

VOCs include a number of chemicals which are easily vaporized and transported in the air, many of which have short- and/or long-term negative health effects on humans. Additionally, VOCs are a key precursor pollutant (along with NO_x) to the formation of tropospheric ozone (O_3). VOCs constitute the second largest class of criteria pollutants emitted by the plant.

2.1.3 Carbon monoxide (CO)

CO is a colorless, odorless gas emitted as a by-product of the combustion process from engines, boilers, power plants, etc. At higher than recommended levels it can interfere with the human body's ability to take up oxygen, and at extremely high levels it can lead to death. CO is the third largest criteria pollutant emitted by the plant.

2.2 Hazardous Air Pollutants (HAPs)

In addition to the criteria air pollutants discussed in Section 2.1, various HAPs are emitted from the facility. The primary HAP emitted is formaldehyde, with a potential-to-emit level of 7.5 tons per year. While the emissions of this and other HAPs are projected to be below the threshold for "major source" determination, formaldehyde, in particular, is odorous and a known human carcinogen. Thus, formaldehyde emissions from the Loup Creek plant may be noxious and could have direct impacts on the health of any nearby residents.

A comparison of the potential-to-emit and 2009 actual HAP numbers shows the actual emissions of toluene and xylene as being well above the potentials. A new dehydration unit flare was installed in 2010, and the potential-to-emit levels shown for HAPs reflect the increased efficiency of the new flare. Thus the current actual emissions are presumably substantially lower than the 2009 figures shown.

3.0 Conclusions

The Loup Creek Compressor Station is a major stationary source of criteria pollutants and a minor source of HAPs, emitting levels of these various pollutants which contribute

significantly to the deterioration of air quality in the region and immediate vicinity of the plant. The primary contributors to these emissions are the three, 2-stroke compressor engines, which are more than 60 years old. The fourth compressor engine, installed in 2001, emits approximately five times less of the two primary pollutants, NO_x and VOCs, while producing almost 25% more horsepower. Given the extremely high emissions from the plant and the antiquity of these engines, Dominion should replace the three older engines at the facility as a condition of their permit renewal. This should bring emissions below the level which constitutes a major source (thus lightening their regulatory burden and environmental impact), and take a significant step toward improving the air quality in the region.

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As a result of these public comments the following response letter was issued by the DAQ.

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

January 9, 2012

Mr. Vincent Trivelli
The Law Office of Vincent Trivelli, PLLC
178 Chancery Row
Morgantown, WV 26505

Re: Response to Public Comments
Loup Creek Compressor Station
Renewal Permit R30-10900019-2011

Dear Mr. Trivelli:

I would like to thank you for the comments submitted via the December 7, 2011 letter on behalf of the Affiliated Construction Trades Foundation, a division of the West Virginia Building and Construction Trades Council, AFL-CIO.

The DAQ agrees with the findings of the assessment conducted by Carpenter Environmental Associates, Inc. (CEA) and summarized within the comment letter. Specifically, DAQ recognizes that the nitrogen oxides (NO_x) are being emitted at rates approaching 400 tons per year, which classifies the source as a "Major" source for Title V permitting purposes, but it also classifies them as "Major" under West Virginia's Prevention of Significant Deterioration (PSD) program of 45CSR14.

The report's conclusion to require Dominion to replace their three older compressor engines with newer cleaner units as part of this Title V renewal was noted. Although, under the current circumstances, the underling authority of Title V does not require these engines be replaced. However, under the PSD permitting program Dominion's Loup Creek Station may, in the future, be required to reduce NO_x emissions if they propose to expand and increase emissions beyond the significant levels defined within 45CSR14. For NO_x the significant increase level is defined as 40 tons per year within areas demonstrating attainment with the National Ambient Air Quality Standards (NAAQS).

In conclusion, DAQ would like to thank you for highlighting the elevated emissions of nitrogen oxides and can assure you the Agency will review any future expansion request with NO_x PSD thresholds in mind. If you have any questions regarding this response, please feel free to contact me (304) 926-0499, extension 1216.

Sincerely,

Jesse Hanshaw

Jesse Hanshaw, P.E.
Title V/Air Toxics Engineer