

COMMONWEALTH OF PENNSYLVANIA  
Department of Environmental Protection  
September 8, 2005

SUBJECT: Review of Renewal Title V Operating Permit Application  
Dominion Transmission, Inc.  
Beaver Compressor Station  
North Sewickley Township, Beaver County

TO: Air Quality Permit File OP-04-00490

THROUGH: Mark A. Wayner, P.E.  
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### Background

Dominion Transmission, Inc. (Dominion) has submitted an application to renew their Title V Operating Permit at the Beaver Compressor Station in North Sewickley Township, Beaver County. Beaver Station is a natural gas transmission compressor station with four internal combustion engines, an emergency generator, and a small boiler. The facility is subject to Title V requirements because the potential to emit nitrogen oxides (NO<sub>x</sub>) is greater than 100 tons per year (tpy), the potential to emit carbon monoxide (CO) is greater than 100 tpy, and the potential to emit volatile organic compounds (VOCs) is greater than 50 tpy.

### Sources

The primary sources at the facility are four Dresser Rand (Model TLAD-8) 3200 horsepower reciprocating engines (Sources 101-104). The other sources are a Caterpillar 3512SITA auxiliary generator rated at 778 horsepower (Source 035) and an Ajax WQFD-8500 boiler rated at 8.5 MMBtu/hr (Source 036). An additional source is included in the permit to encompass all fugitive emissions from various vents, compressor blowdowns, pumps, valves, and flanges (Source 105). Dominion did not add or remove any sources from the facility since the Department issued the previous Title V operating permit.

In the original Title V permit the auxiliary generator was categorized as a combustion unit, when according to the definitions in 25 Pa. Code §121.1, the unit is actually a process. The

Department has updated the AIMS inventory to include the proper subfacility type in the database. The new permit contains requirements for this source from Chapter 123 that are appropriate for processes rather than combustion units.

The site has multiple small sources, which the Department determined were trivial during the previous Title V operating permit review. These sources include a Rheem 21VP40-1 water heater rated at 0.04 MMBtu/hr and six small storage tanks. The tanks range in size from 2000 to 8000 gallons and contain fluids such as lube oil, waste oil, waste water, and pipeline fluids. Since the VOCs in the above storage tanks have vapor pressures below 1.5 psia under actual storage conditions, the tanks are not subject to 25 Pa. Code §129.57.

There are no control devices at the facility, although the engines are equipped with OEM lean burn combustion.

### **Regulatory Analysis**

Since the original Title V Permit was issued Dominion has not made changes at the facility that impact the permit. No applicable requirements were promulgated during the term of the permit. The facility is not affected by 40 CFR Part 64 (CAM rule) since no control devices are used. No new source performance standards (NSPS) apply to the facility.

The facility's hazardous air pollutant emissions have approached, but not exceeded the major source threshold in past years. Formaldehyde emissions have been as high as 7.8 tons per year. However, even if the facility exceeds major source thresholds it would not be subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE) contained in Subpart ZZZZ of 40 CFR Part 60. Because the Dresser Rand engines are existing spark ignition 2 stroke lean burn (2SLB) stationary RICE, they are exempt under 40 CFR §63.6590(b)(3). The facility is not subject to the NESHAP for Natural Gas Transmission and Storage Facilities contained in Subpart HHH of 40 CFR Part 60 because the facility does not have a glycol dehydration unit.

The facility remains subject to RACT Operating Permit 63-000-066. The RACT permit was incorporated by reference into the state implementation plan (SIP) in 40 CFR Part 52, Subpart NN on October 12, 2001. Dominion has informally requested revisions to the RACT permits at several of their facilities, including Beaver Station. To finalize these revisions the Department will need to hold a RACT hearing and the EPA must incorporate the new RACT permit into the SIP. Since this process could take several years, the Department will issue the renewal permit with the conditions from the current RACT permit, but the permit also contains language that will allow conditions from a revised RACT permit to take precedence if one is incorporated into the SIP.

The particulate matter emission restriction from 25 Pa. Code §123.13 for the engines was missing from the previous Title V permit and has been added to the renewal permit. With the exception of the changes to the auxiliary generator conditions, no other conditions from Chapter 123 were added or changed. However, the Department added several conditions to demonstrate compliance with Chapter 123 restrictions and other emission and operating restrictions. The

Department updated other existing conditions for demonstrating compliance with permit restrictions at the applicant's request or to maintain consistency with recently issued operating permits.

**Emissions**

The emission limits in the renewal Title V permit are the same as in the previous Title V permit and the RACT permit. NO<sub>x</sub>, VOC, and CO are limited on a pounds per hour basis and a tons per year basis for the boiler and the engines. The emissions from the generator are limited only on a pound per hour basis, but the non-emergency operating hours of the generator are limited to 250 hours per year. The following tables show the emissions limits in pounds per hour and tons per consecutive 12-month period (tpy).

**Emission Limits**

	NO <sub>x</sub>		CO		VOC	
	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy
Each Engine	14.1	61.8	18.3	80.2	5.6	24.6
Ajax Boiler	1.5	6.6	0.13	0.6	0.04	0.2
Auxiliary Generator	3.4	NA	2.2	NA	0.03	NA

Stack testing and portable analyzer testing show the engines' emissions are consistently below permitted hourly levels. A review of the AIMS inventory for the past five years shows the facility is also in compliance with the permitted yearly levels.

**Recommendations**

I recommend issuing a renewal Title V operating permit to this facility. I recommend the following changes from the previous Title V operating permit:

- Changing the auxiliary generator from a combustion unit to a process
- Updating and adding methods of compliance for Chapter 123 and other restrictions
- Adding language to conditions from the RACT permit allowing changes if a new RACT permit is incorporated into the SIP.