

Commonwealth of Pennsylvania
Department of Environmental Protection
Southwest Regional Office
December 20, 2007

Subject: Issuance of a Renewal Title V Operating Permit
Texas Eastern Transmission Corporation
Delmont Compressor Station
Salem Township, Westmoreland County

To: Title V Operating Permit 65-00839
Case File 65-839

Through: Barbara Hatch, P.E. 
Environmental Engineer Manager
Air Quality Program

From: Francis Condric 
Air Quality Engineer

Background:

Texas Eastern Transmission Corporation operates natural gas compression and transmission equipment at the Delmont Compressor Station in Salem Township, Westmoreland County. The facility's major source of emissions include various sources of natural gas consumption which includes internal combustion engines, turbines and emergency generators.

CAM Applicability:

Under 40 CFR Part 64, CAM Plans are need for all sources that have potential to exceed the major source thresholds for the criteria pollutants and use control devices to meet pollutant specific emission limits. In this instance it would be for oxides of nitrogen (NOx). A CAM plan was submitted for the following sources (Source I.D. 104, 105, 106, 107, 108 and 109). All are 1100 HP Ingersoll Rand (IC) Engines and are equipped with non-selective catalytic reduction (NSCR). NSCR was installed in the engine exhaust stream allowing the reductive reactions to occur before the exhaust stream is emitted to the atmosphere. The NSCR was installed during the Reasonable Available Control Technology application and it reduced NOx emissions to 2 gram/horsepower-hour (gm/hp-hr) from the uncontrolled rate of 23 gm/hp-hr.

The owner/operator did not submit a CAM plan for Sources 110, 111, 112, and 113. As part of RACT application the owner/operator installed screw-in pre-combustion chambers (SIPC). This was not considered to be an add-on control, thus CAM is not applicable.

The owner/operator will conduct a DEP approved performance test to demonstrate compliance with emission and operational limitations to control for formaldehyde and Nitrogen of Oxides (NOx) emissions. The owner/operator proposes monitoring the following parameters as part of the CAM Plan for Sources 106 – 109: will monitor the catalyst bed inlet temperature, catalyst bed outlet temperature, pressure differential across catalyst bed, oxygen engine exhaust concentration, and catalyst integrity.

Regulatory Review:

The facility is subject to Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. The facility meets the applicability determination – A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons or more per year of any combination of HAP at a rate of 25 tons or more per year. The facility has in the past emitted greater than 10 tons of formaldehyde emissions in a calendar year.

Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major sources of HAP emissions. This permit also contains requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations.

New Source:

The facility replaced an existing natural gas fired turbine with a Solar Turbine Inc., model Mars 100 T-15000, natural gas-fired turbine rated at 15,000 horsepower. The turbine is used to drive a compressor which in turn is used to transmit natural gas through a pipeline.

New Regulations:

Per 40 CFR Section 60.330 Stationary Gas Turbines that commence construction, modification or reconstruction after October 3, 1977 are subject to the New Source Performance Standards (NSPS) Subpart GG.

40 CFR §60.332 establishes an allowable NOx limitation of 199 ppm, however the vendor will guarantee a NOx emission rate of 25 ppm. NOx emissions will not exceed 13.29 pounds per hour.

Title 25 PA Code § 123.21, limits SO₂ emissions to 500 ppm. 40 CFR § 60.333 limits SO₂ emissions to 150 ppm, and the sulfur content of fuel to 0.8 weight percent. The owner/operator assumed the pipeline grade natural gas has a sulfur content of 0.0036 weight percent, based on AP-42. SO₂ emissions will not exceed 0.4515 pounds per hour. This unit will be subject to the monitoring and reporting requirements of 40 CFR § 60.334. Per 40 CFR Section 60.334(b)(2) the applicant has received approval for a system-wide custom fuel sulfur content monitoring schedule and a waiver from monitoring fuel bound nitrogen from the Administrator.

Per 40 CFR, Section 63.1270, Subpart HHH does not apply because facilities that do not contain an affected source, glycol dehydration units, are not subject.

Amendments:

The owner/operator neglected to submit a CAM Plan at the time of the renewal application along with the inclusion of the plan approval for the replacement turbine. The owner/operator submitted the information during the time of the technical review.

Conclusions and Recommendations:

I have completed my review of Texas Eastern (Delmont Compressor Station) Title V Renewal Application. The attached draft permit reflects terms and conditions as described in the permit renewal application and additional information. It is my recommendation to issue a Title V permit for this facility.