

STATEMENT OF BASIS

To: Reviewers
Through: Lori Bocchino, Operating Permit Program Manager
From: Maggie Endres, Operating Permit Program
Subject: Draft Operating Permit 3-3-008, Kern River Gas Transmission Company
Painter Compressor Station
Date: February 28, 2011

Attached is a draft renewal Wyoming Air Quality Standards and Regulations (WAQSR) Chapter 6, Section 3 operating permit for Painter Compressor Station. This compressor station increases the pipeline system pressure. Emissions sources include two 4031 horsepower Solar turbine engines, a Peerless building heater, Trane furnace, two Trane space heaters, a domestic water heater and fugitive emissions.

Permitting History:

Permit CT-933 (7/8/1991): was issued for the construction of two Solar Centaur natural gas fired turbine engines at this new facility. This permit set hourly and annual NO_x and CO emission limits on the proposed heaters at the facility. The emission limits for the proposed heaters were based on the sum of the proposed heater firing rates and limited emissions from the heaters as a whole; limits were not placed on individual heaters. During the construction process, the number and firing rate of the proposed heaters was changed. Since the number and overall firing rate of the heaters installed differed slightly from what was proposed, and since NO_x and CO emissions from each heater is less than 2 TPY, the NO_x and CO limits set for the heaters in permit CT-933 were removed during the issuance of the initial operating permit. As a result of removing the permit limits, the heaters and the furnace are subject to the NO_x limits in WAQSR Ch 3, Sec 3.

Permit OP-266 (10/29/1996): approved operation of the facility. This permit sets limits on NO_x and CO emissions from the two turbine engines. The turbines are subject to 40 CFR 60 Subpart GG.

Waiver AP-5008 (7/25/06, revised 8/16/06): allowed temporary operation of a generator for up to eight days during a power outage.

Waiver wv-9482 (8/13/09): allowed restaging of the compressors on the two turbine engines. The restaging was done by changing aerodynamic components of the compressor that define performance and optimum flow range. In this case the result was a reduction in gas flow. The restage was requested because of a reduction in gas production upstream of the facility. There are no applicable requirements included with this waiver.

Applicable Requirements

In addition to the permit requirements listed above, the sources at the facility are subject to the visible emission limits set forth in WAQSR Chapter 3, Section 2. The small heaters are limited to NO_x emissions of 0.20 lb/MMBtu heat input under WAQSR Chapter 3, Section 3. The turbine engines at this facility were constructed in 1992 and are subject to 40 CFR 60 Subpart GG.

Periodic Monitoring

Periodic monitoring of visible emissions will consist of monitoring the type of fuel burned to ensure natural gas is the sole fuel source for all units. The turbine engines will be monitored according to Chapter 5, Section 2 and 40 CFR 60 Subpart GG. Annual verification of NO_x emissions from the turbines will be done in accordance with 40 CFR 60 Subpart KKKK §60.4400. (Performance standards promulgated after November 15, 1990 contain sufficient monitoring to satisfy title V periodic monitoring requirements. The turbines are not subject to Subpart KKKK, but the permittee has chosen to utilize the NO_x monitoring requirements of this subpart as periodic monitoring). The application for the initial construction of the turbines included engine emission factors for NO_x. The Solar guaranteed emission factor for NO_x in parts per million by volume (ppmv) dry at 15% is 84, which corresponds to the pound per hour permitted limit. 84 ppmv will be used for the §60.4400 monitoring. CO emissions will be tested at least once every five years.

The small heaters are fuel burning equipment as defined in WAQSR Chapter 1. These units emit oxides of nitrogen (NO_x) in relatively small quantities (the largest unit is less than 2 tons per year of NO_x). In the absence of more stringent permit limits, the NO_x emission limit for fuel burning equipment defaults to 0.20 pounds per million BTUs (lb/MMBtu) for sources constructed after April 9, 1973. Generally, small fuel burning sources like these units are uncontrolled and operate at a steady state; emission variations are not likely. AP-42 emission factors were developed by the EPA to help estimate the quantity of a pollutant from a given source type. In developing an AP-42 emission factor, emission data is averaged from sources of similar size and type, and the emission factor is then assigned a reliability rating based on quality and quantity of the data used. The rating scale runs from A to E with an A rating providing the highest quality. The AP-42 emission factor for small units (less than 100 MMBtu/hr) is 0.1 lb/MMBtu with a B rating. Considering the amount of data evaluated to develop the AP-42 emission factor and considering that the WAQSR Ch 3, Sec 3 emission limit is twice the AP-42 value, the Division feels it is extremely unlikely these sources will operate out of compliance and considers further testing of these sources to be uneconomical.