# STATEMENT OF BASIS

To: Reviewers

Through: Lori Bocchino, Operating Permit Program Manager

From: Despina Nikolova, Air Quality Engineer

Subject: Draft Operating Permit 3-3-043, Colorado Interstate Gas Company, L.L.C. Wamsutter Compressor Station

Date: November 26, 2012 (*Amended February 19, 2013*)

**Introduction:**

Attached is the draft Wyoming Air Quality Standards and Regulations (WAQSR) Ch 6, Sec 3 operating permit for Colorado Interstate Gas Company, Wamsutter Compressor Station. This facility was constructed in 1971 and is used to boost pipeline pressure for transmission to the Denver area. Condensate present in the pipeline at the station inlet is pumped to a storage tank before it is transported off site. Emission points at the facility include four 3,104 hp Solar Centaur turbine compressor engines (CG-1 through CG-4), two 9,747 hp Solar Taurus 70 combustion turbine engines (CT-1, CT-2), one 242 hp Cummins GTA-12 (EG-1) and one 637 hp Caterpillar G3412 emergency generators, one 3.09 million Btu per hour (MMBtu/hr) Bryan heating boiler (SB-1), one 5.0 MMBtu/hr line heater (LH-1), and fugitives emissions. The engines, the boiler and heater are all natural gas-fired. Various storage tanks at the facility do not have any applicable requirements based on their size. The facility is an area source of Hazardous Air Pollutants.

**Permitting History:**

CT-247 (8/22/79): was issued for the upgrading of three existing turbines (CG-1, CG-2, and CG-3) and the construction of three new turbines. Only one new turbine (CG-4) was added. This permit is superseded by MD-5946A.

CT-247A (9/9/80): allowed for the construction of five turbine engines, five reciprocating engines and a dehydration/regeneration heater. No equipment was constructed and this permit has become invalid.

MD-5946 (6/29/07): authorized the addition of two Solar Taurus 70 turbines (CT-1 and CT-2), an emergency generator (EG-2), a line heater (LH-1), and one 90 bbl tank. The Solar Taurus turbines 70 were constructed and tested as required under this permit. This permit is superseded by MD-5946A.

MD-5946A (11/26/08): was issued to reflect the low $NO_X$ technology installed on turbines CG-3 and CG-4 and to recognize the emission reduction for these units. Applicable requirements include the following: $NO_X$ and CO emission limits for all six turbines and annual emissions testing; notification and retesting if any engine tests outside the permitted limits; annual operating hours limits for units SB-1, EG-1, EG-2, CG-1 and CG-2; units CG-1 and CG-2 shall be retrofit with low $NO_X$ technology, at which time the operating hours limit for these units will expire; a maximum horsepower is set for unit EG-2; maintain documentation that manufacturer's or supplier's recommended maintenance is being performed for units EG-1 and EG-2; as well as compliance with 40 CFR 60, Subpart KKKK (for units CT-1 and CT-2) and 40 CFR 60, Subpart GG (for units CG-1 through CG-4) listed below.

**Applicable Requirements:**

In addition to the permit requirements listed above, all sources at the facility are subject to the visible emission limit set forth in WAQSR Ch 3, Sec 2. The line heater (LH-1) and the Bryan heating boiler (SB-1) are subject to WAQSR Ch 3, Sec 3 $NO_X$ limits.

The Solar Centaur turbines (CG-1 through CG-4) are subject to the requirements of 40 CFR 60, Subpart GG, for *Stationary Gas Turbines*.

The permittee must also comply with any applicable requirements from Ch 5, Sec 2 New Source Performance Standards, and 40 CFR Part 60, Subpart JJJJ - *Stationary Spark Ignition Internal Combustion Engines*. (Affected engines are defined at §60.4230 of the subpart). As of November 26, 2012, the Cummins GTA-12 (EG-1) emergency generator is not subject to Subpart JJJJ according to information submitted to the Division by the permittee. The Caterpillar G3412 (EG-2) emergency generator must meet the requirements of Subpart ZZZZ by meeting the requirements of 40 CFR 60, Subpart JJJJ. However, on November 26, 2012, engine EG-2 had no applicable requirements from Subpart JJJJ because of its date of manufacture. As required by temporary engine replacement condition of the operating permit, if an engine is replaced or reconstructed, subpart applicability will need to be reevaluated and a statement regarding applicability submitted to the Division.

The Solar Taurus 70 combustion turbine engines (CT-1 and CT-2) are subject to the requirements of 40 CFR Part 60, Subpart KKKK, *New Source Performance Standards for stationary combustion turbines*.

Per 40 CFR 63, Subpart ZZZZ *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, all reciprocating internal combustion engines, including the emergency generators (EG-1 and EG-2), are subject to the requirements of 40 CFR 63 Subpart ZZZZ at an area source.

**Periodic Monitoring**

Periodic monitoring of visible emissions from all sources shall consist of monitoring the type of fuel used to ensure natural gas is the sole fuel source. Periodic emissions monitoring from the six turbine engines shall consist of annual $NO_X$ and CO emissions testing. Operating hours shall be monitored on a monthly basis for units SB-1, EG-1, EG-2, CG-1 and CG-2. Records shall be kept for the maintenance activities performed on the Cummins GTA-12 (EG-1) and Caterpillar G3412 (EG-2) emergency generators.

The line heater (LH-1) and the Bryan heating boiler (SB-1) are fuel burning equipment as defined in WAQSR Chapter 1. These uncontrolled units emit oxides of nitrogen ($NO_X$) in relatively small quantities (less than 5 TPY, combined). 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 (for LH-1) and 0.23 pounds per million BTUs (lb/MMBtu) for sources constructed before April 9, 1973 (for SB-1). Generally, small fuel burning sources like these units 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 gaseous fuel burning sources (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 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.

*Addendum (Amended February 19, 2013)*
*Condition S1 is updated to reflect the state's current ambient standards for nitrogen dioxide, sulfur dioxide, and ozone which were revised on December 19, 2012. As this change is administrative in nature, no additional public notice period is warranted.*