**Design Isolation Valves to Minimize Gas Blowdown Volumes**

**PRO Fact Sheet No. 606**

**Applicable sector(s):**
- Compressors/Engines
- Dehydrators
- Pipelines
- Pneumatics/Controls
- Tanks
- Valves
- Wells
- Other

**Partners reporting this PRO:** Iroquois Gas Transmission, PG&E National Energy Group (now Gas Transmission Northwest), Tennessee Gas Pipeline Company

**Other related PROs:** Move Fire Gates In to Reduce Venting at Compressor Stations, Inject Blowdown Gas into Low Pressure Mains, Redesign Blowdown Systems and Alter ESD Practices

**Technology/Practice Overview**

**Description**
When individual compressors or other equipment in a compressor station are taken out of service, valves are closed and the natural gas between the valves is vented to the atmosphere. Through an improved compressor facility design, one partner has reported reducing the volume of gas emitted when sections of isolated equipment are blown down.

To implement this strategy, the partner has designed new compressor stations with isolation valves positioned in closer proximity to compressors. Due to this design alteration, when the valves are closed, significant lengths of gas-filled piping will not be vented to the atmosphere, thereby reducing methane emissions.

**Operating Requirements**
There are no changes in operating requirements.

**Applicability**
This practice can be implemented in new station designs or existing station renovations.

**Methane Emissions Reductions**
Methane emissions reductions are estimated from the length, size, and operating pressure of piping excluded from the isolation loop by the new location of isolation valves.

**Methane Savings:** 130 Mcf per year

**Costs**
- Capital Costs (including installation)
  - <$1,000
  - $1,000 – $10,000
  - >$10,000
- Operating and Maintenance Costs (annual)
  - <$100
  - $100–$1,000
  - >$1,000

**Payback (Years)**
- 0–1
- 1–3
- 3–10
- >10

**Benefits**
Reducing methane emissions was a primary justification for the project.
Economic Analysis

Basis for Costs and Savings
Methane emissions reductions of 130 Mcf per year are associated with the relocation of two compressor station isolation valves to exclude 200 feet of 24-inch pipeline at 600 psig from being blown down five times per year.

Discussion
While there are no operating and maintenance costs, alterations of, or addition to, the isolation valves at a compression station involve engineering and construction costs, which if aimed at minimizing gas blowdown, would be offset by gas savings.