Natural Gas STAR

Partner Experiences

Northern Natural Gas Company

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Outline

★ Who is Northern Natural Gas Company (Northern)?
★ Gas STAR Program Overview
★ Northern’s STAR II Program
★ Northern’s STAR I Program
★ MidAmerican’s Environmental RESPECT Policy
★ Questions
Who is Northern Natural Gas Company?

★ Northern is a wholly owned subsidiary of MidAmerican Energy Holding Company.

★ Northern believes responsible environmental management is good business; it benefits our customers and improves the quality of the environment in which we live.

★ Our policy establishes the environmental RESPECT principles that guide our corporate commitment to the environment.
Northern Natural Gas System Map

- 13,000 miles of pipeline
- 110 Compressor Stations
- 1100 employees
- 5000 TBSs
The Natural Gas STAR Program

The Natural Gas STAR Program is a flexible, voluntary partnership between EPA and the oil and natural gas industry designed to cost-effectively reduce methane emissions from natural gas operations.
STAR I & STAR II Programs

★ STAR I – The volume of methane from a leak (Facility Leakage Audit) that was repaired. Un-repaired leaks go into our “unaccounted for” volumes.

★ STAR II – The volume of methane that was conserved during normal pipeline venting operations.
STAR II Emission Categories

- Pumpdown: 40%
- Pressure Reduction: 20%
- Transmission Lines: 18%
- DI&M: 4%
- VRU: 6%
- ESD: 6%
- Hot Tap/Sleeve: 6%

Northern Natural Gas
STAR I Emission Categories

- Blow-down: 26%
- Rod Packing: 22%
- Valves: 27%
- Panels: 6%
- Valve Stems: 7%
- Fuel Runs: 5%
- Connectors: 3%
- Unloaders: 2%
- Flow Meters: 1%
- Vents: 1%
- Fuel Runs: 5%
- Connectors: 3%
- Unloaders: 2%
- Flow Meters: 1%
- Vents: 1%
Facility Leakage Audit (FLA)
Northern’s STAR Accomplishments

- 5.6 Bcf in total reductions
- Annual Emissions Reductions:
  - Previous: 144.2 MMCF
  - 1996: 87.6 MMCF
  - 1997: 884.2 MMCF
  - 1998: 731.9 MMCF
  - 1999: 548.1 MMCF
  - 2000: 331.4 MMCF
  - 2001: 107.3 MMCF
  - 2002: 59.6 MMCF
  - 2003: 408.7 MMCF
  - 2004: 832.8 MMCF
  - 2005: ??? MMCF

Total: 5637.4 MMCF
Leak Breakdown

- >25 MCF/yr 41%
- >50 MCF/yr 32%
- >75 MCF/yr 27%
- >100 MCF/yr 22%
Leak Breakdown

- 5% of leaks equal 62% of volume (18 rod packing)
- 10% of leaks equal 79% of volume (40 rod packing)
MidAmerican Energy RESPECT Policy

★ Respect
★ Efficiency
★ Stewardship
★ Performance
★ Evaluation
★ Communication
★ Training
Question?
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