Natural Gas STAR
Partner Experiences

Duke Energy Gas Transmission
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Who is Duke Energy?

★ Duke Energy is a leading energy company located in the Americas with an affiliated real estate operation.

★ Our purpose is to create superior value for our customers, employees, communities and investors through the production, conversion, delivery and sale of energy and energy services.

★ We have approximately 23,000 employees worldwide dedicated to doing business right.
Natural gas operations include more than 17,500 miles of interstate transmission pipeline connecting major natural gas supply basins from the Gulf Coast, mid-continent and Canada with markets in Canada and the northeastern and southeastern U.S.

U.S. Operations accounts for more than 12,200 miles of the total transmission pipeline system

Natural gas operations include approximately 250 billion cubic feet of natural gas storage capacity in North America.
DEGT US Pipeline Systems
We take our role as a corporate citizen seriously, working to protect the environment where we live and work.

DEGT became an EPA Natural Gas STAR Program Partner in 2000

From 1993-2003, DEGT has quantified CH4 emissions reduction of ~6 BCF (more than ½ of the capacity DEGT transports on a daily basis.

1.03 Bcf methane emission reduction in 2003 ($4.6MM Savings)

DEGT was awarded the 2002 Transmission Partner of the Year Award
DEGT Has Reduced Emissions Through Improved Operational Practices

- Coordinating repairs with pipeline outages
- Maximizing Line pressure reductions prior to blowing down for repairs
- Use of Composite Sleeves for Pipeline Repairs
- Installation of Hot Taps
- ESD Testing Procedures
Partner Reported Opportunities

★ Pipeline Pull Downs – Minimize gas loss when P/L section is blown down
  ▪ Operationally reduce pressure to minimum
  ▪ Isolating and pumping down line pressure w/portable field compressors

★ Sleeve Repairs – Utilizing in-service repairs rather than pipe replacements.
  ▪ Steel type B sleeves
  ▪ Composite Sleeves (Clock Spring)
Partner Reported Opportunities

- **Use of Hot Taps for New Connections** – eliminates the need to blow down a valve section for branch tees

- **Emergency Shutdown Practices** – Annual ESD tests conducted without venting the gas to atmosphere
2003 Captured Emissions Reduction

- Hot Taps, 529
- ESD, 73
- Sleeve Repairs, 177
- Pull Downs, 251

Total of 1030 MMcf Captured

* All values expressed in MMcf
4 Year Captured Emissions Comparison

* All values expressed in MMcf
Key Factors Affecting Emissions Reduction Success

- Management Commitment
- Communication
- Planning
- Flexibility – Consider all your options
- Clear and concise O&M and SOP manuals which incorporate methane reduction opportunities
- Ensure that key players are kept in the loop (i.e. Gas Control)
- Document Actual Reductions
Natural Gas Star Program Benefits

- Voluntary Program to reduce methane emissions
- DEGT’s customers save money through a reduction in shrinkage.
- The environment benefits through reduced GHG emissions & conservation of a limited natural resource.
- Participation in the Program further builds our relationships with the EPA and our neighbors, as a good corporate citizen.
End of Partner Experiences Presentation

David Felcman
Duke Energy Gas Transmission
Questions?