



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.

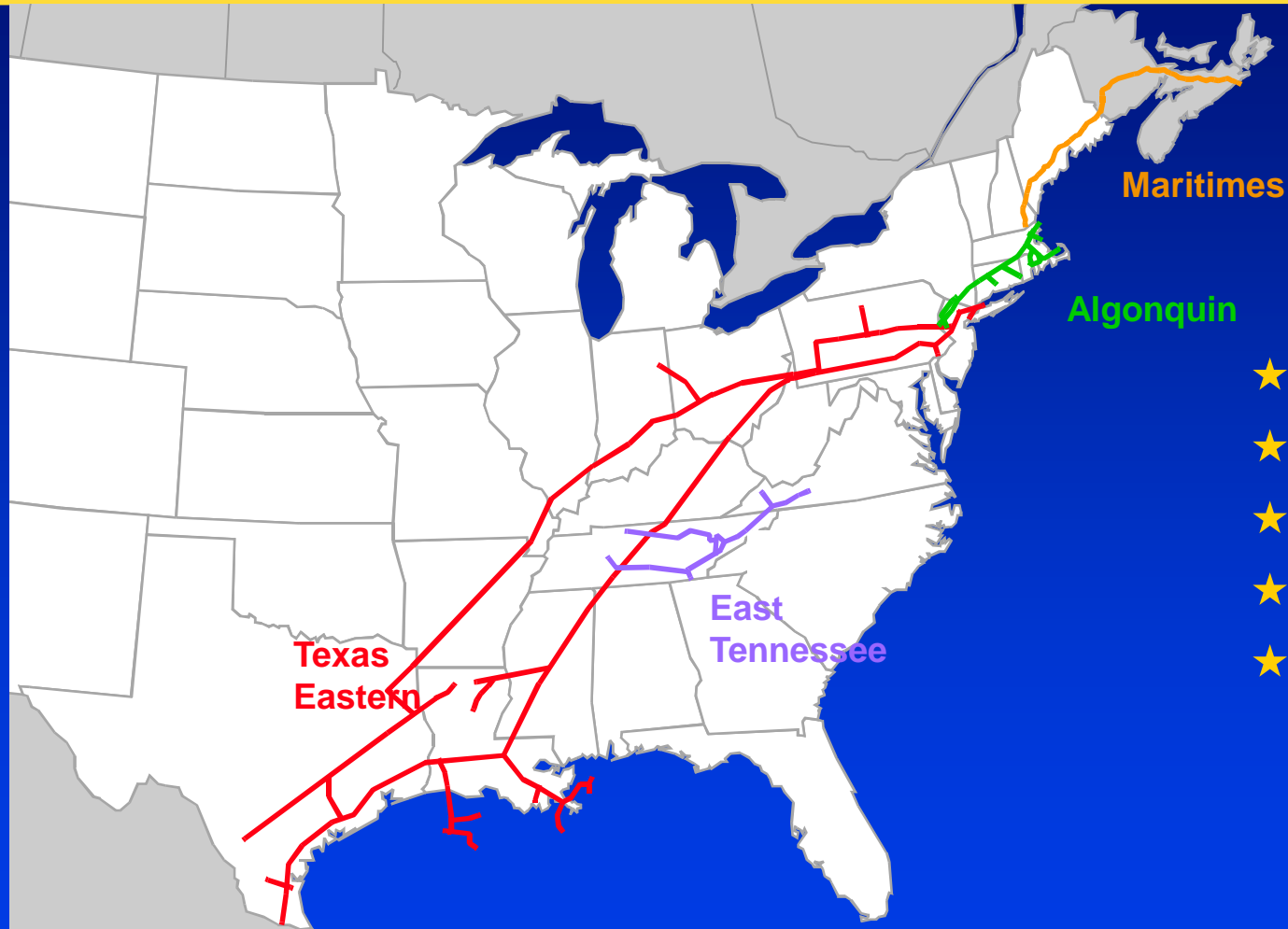


Duke Energy Gas Transmission



- ★ 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



- ★ TETCO
- ★ ETNG
- ★ AGT
- ★ M&N
- ★ Gulfstream

DEGT & EPA Natural Gas STAR Program



- ★ 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 1/2 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



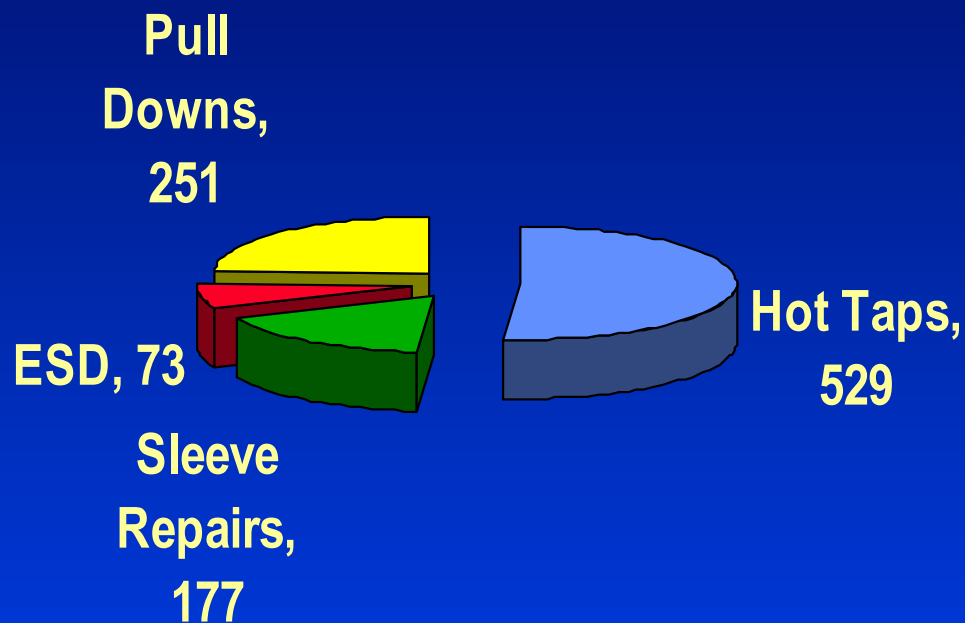
- ★ Use of Hot Taps for New Connections – eliminates the need to blow down a valve section for branch tees



- ★ Emergency Shutdown Practices – Annual ESD tests conducted without venting the gas to atmosphere



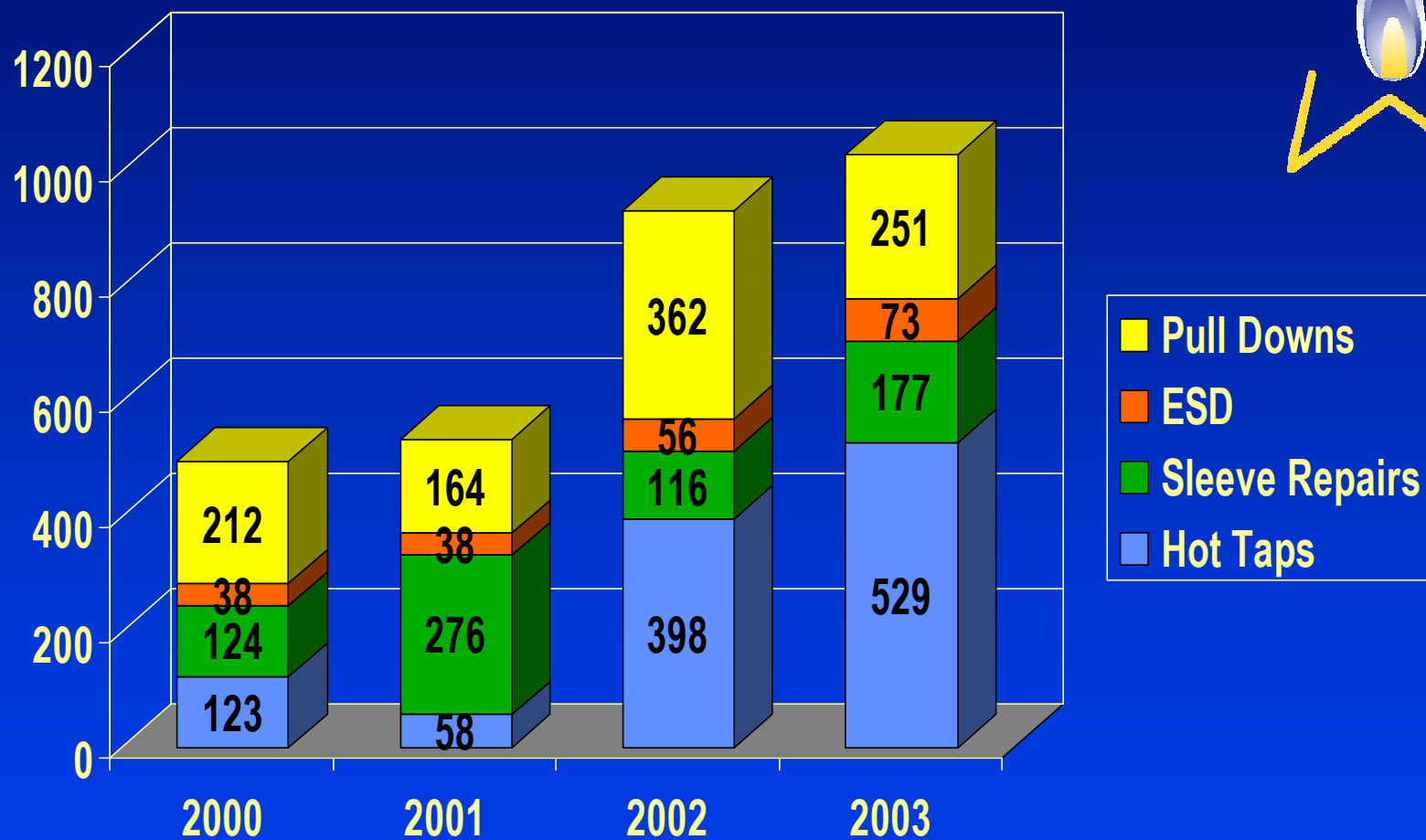
2003 Captured Emissions Reduction



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?

