

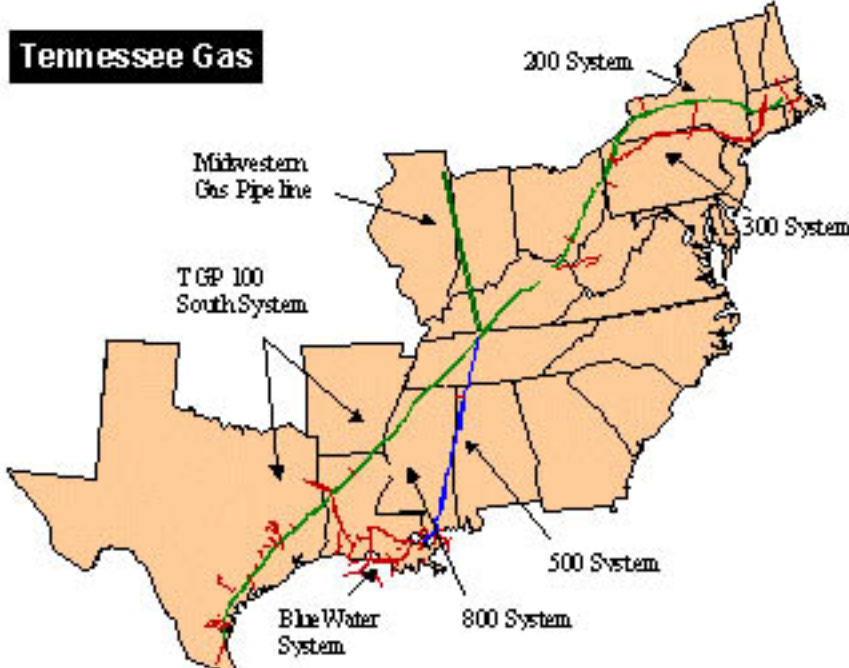


Project Profile

Project: Tennessee Gas Pipeline *Real Time* Project

Project Summary: Tennessee Gas Pipeline, an El Paso Energy Company, provides long and short-haul interstate gas transportation service. It consists of over 15,000 miles of pipeline powered by 67 compressor stations to transport natural gas from Texas, Louisiana and the Gulf of Mexico to 20 eastern and mid-western states. The pipeline's 568 compressor units can deliver up to 1.3 million horsepower, capable of transporting an average throughput of 5 Bcf/d.

Tennessee Gas



One of Tennessee Gas' main objectives in acquiring a simulation package, including real time, was to enhance their daily business and operating decisions. Gregg's Simulation products were chosen to meet the client's needs and requirements to enhance the accuracy of pipeline hydraulic calculations, and the safety of the pipeline system.

During the PSIG conference held in Denver, Colorado on October 28-30, 1998, a paper titled "Developing a Real-

Time Simulation System: Practical Considerations from Practical Experience", was presented by Mr. Mike Goodman, Mr. Julian Woodhouse and Mr. Jack Lu. This paper describes some of the benefits achieved by the Gregg simulation technology. During the PSIG conference in Savannah, Georgia on October 18-20, 2000, another paper titled "Integrating An Expert System and Pipeline Simulator to Enhance Gas Pipeline Operation and Safety" is being presented by Mr. Anders Johnson, Mr. Ram K. Wallooppillai, both from El Paso Energy, Mr. Brent D. Marquart of Gensym Corporation, and Mr. Michael L. Istre from Gregg Engineering. This paper describes the benefits and successful integration of an expert system and a pipeline simulator in El Paso's Tennessee Gas Pipeline System. A copy of these papers can be obtained from the PSIG web site at www.psig.org

Customer: Tennessee Gas Pipeline
Location: Texas/Louisiana to New England, USA
Start Date: July 1996 -Real Time
Date Completed: September 1997

Simulations Product(s) Installed: WinFlow and WinTran OnLine (Includes Real Time Model, Offline Predictive Model, Rupture Detection, Automatic Look Ahead, Self Tuning, Detailed Station Module, OnLine Data Interface to SCADA)

SCADA System: In-house system based on VMS

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