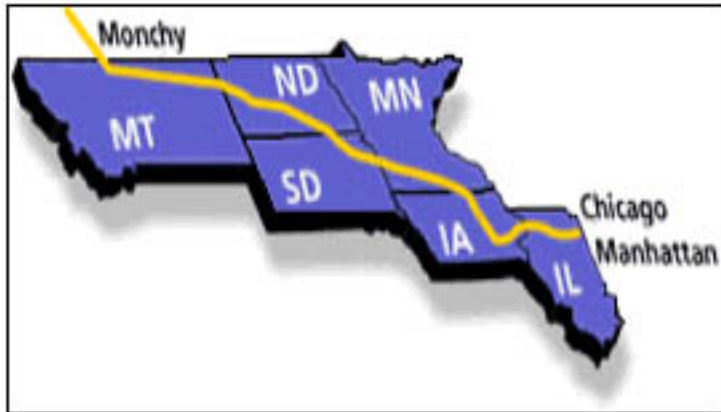




Project Profile

Project: Northern Border Pipeline *Real Time* Replacement Project

Project Summary: The Northern Border Pipeline Company (NBP) is a general partnership owned by subsidiaries of Northern Border Partners, L. P. and TransCanada Pipelines Limited. Northern Plains Natural Gas Company, an Enron subsidiary, serves as the operator of the Northern Border pipeline system. NBP pipeline serves as a major transportation link joining the vast natural gas reserves in the Western Canadian Sedimentary Basin and the United States Williston Basin with markets throughout the U.S.



This system consists of over 1,300 miles of mainline with the majority of the diameter being 42-inch, 36-inch, and a partial 30-inch loop line. The system carries extends from the Canadian

border to the Chicago market area in the United States. There is no spare compression horsepower at any of the 15 compression stations. Therefore, it was very critical for the NBP operators to have a reliable real time model that could help manage the transportation of Canadian gas to the Chicago market in a timely manner. The real time system also needed to accurately predict the capacity impacts of either scheduled or non-scheduled outages in very a short time frame.

During an expansion project toward the market area, a team of planning and system engineers recommended replacing the existing LIC real time model with the Gregg Engineering's real time system, WinTran OnLine. One of the objectives of this project was to implement and integrate the real time model to a US Weather Forecasting data bank. This would assist the NBP operators to effectively manage the compression requirements, linepack, fuel usage and rupture/leak detection.

Customer: Northern Border Pipeline Company

Location: Montana to Illinois, USA

Start Date: March 1999

Date Completed: April 1999

Simulations Product(s) Installed: A Turn-Key project with WinTran OnLine (Includes Real Time Model, Offline Predictive Model, Rupture Detection, Automatic Look Ahead, Self Tuning, Steady-State WinFlow Model, Detailed Station Module, OnLine Data Interface to SCADA, all standard features of WinTran OnLine) on Windows 95 and Windows NT 4.0.

Special Interface: Interface to US Weather Data Bank via Internet for temperature profiling

SCADA System: In-house system based on VMS, Real Time Management RTM with Genesis MMI

Contact Name: Mr. Chris Burns

Telephone : (402) 492-7410

Email: Christopher.Burns@Nborder.com