

MWFE 230kV Transmission Line



Henry Ford Montana-Dakota Utilities Co. Electric Transmission Engineering Manager

Project Development



- enXco made an application to the Midwest Independent System Operator (MISO) for a generator interconnection in 2004
- This application generates the need for a System Impact Study (SIS)
- The SIS determines what upgrades to the system will be required to accommodate this additional generation

Project Development



- In the case of the Merricourt Wind Farm project the SIS determined the following upgrades were required on the Montana-Dakota transmission system:
 1. A new 230kV line from the wind farm to Montana - Dakota's Ellendale 230kV Substation
 2. Replacement of the 230/115kV transformer at the Ellendale Substation and modifications to the Ellendale Substation to accommodate the new 230kV line
 3. A new 230kV wind farm interconnection substation at the west end of the new 230kV line.

Project Development



- Montana-Dakota was requested by MISO in April of 2009 to perform a Facility Study to calculate the costs of interconnection and upgrades to Montana-Dakota's system as a result of the SIS
- Facility Study was completed in August 2009
- Generator Interconnection Agreement (GIA) was executed in April 2010 – Exhibit 2

Project Development



- The GIA requires Montana-Dakota to complete the construction of the Interconnection Substation by September 1, 2011 and the 230kV transmission line to Ellendale Substation by December 1, 2011 (Exhibit 2- Appendix B)
- Montana-Dakota filed a Notice of Force Majeure events with MISO and enXco on April 26th, 2011 stating MDU will not be able to meet the GIA milestones.

Project Description



- Roughly 30 miles of 230kV transmission on wood H-Frame structures will be required
 - Approximately 17.4 of the 30 miles will be constructed on existing transmission right-of-way where an existing 41.6kV line will be rebuilt with a double circuit line using double circuit H-frame construction
 - The remaining 12.6 miles will be constructed using the single circuit H-frame construction.
- Interconnect Substation Construction – west end of line
- Ellendale Junction Substation Upgrades
- Estimated total cost at \$21 million
- Montana-Dakota hired HDR Engineering in April 2010 to select a route for the line, permit it, acquire easements, design the line, and coordinate construction of the project