COLLABORATIVE RELATIONSHIPS
Build Project Success
Electrical Hazards

Electricity is accepted as a source of power without much thought to the dangers encountered but, incidents ranging from electrical shorts to electrical fires have occurred in offices.

To minimize potential hazards:

- Inspect electrical cords for signs of fraying, cracking, wear, or damage before use.
- Use only 3-pronged extension cords and only for temporary use (less than 90 days).
- Do not plug multiple appliances into one outlet.
- Turn off energized equipment when not in use unless designed to remain energized (computers, copiers).

More information on electric safety - https://www.otpco.com/safety/electric-safety/
Agenda

• Background
  • Timeline
  • Lessons Learned and Collaborative Opportunities
  • Conclusions
345 kV transmission line approved by MISO in Dec 2011 as Multi Value Project (MVP)

Joint owners Otter Tail Power Company and Montana-Dakota Utilities Co.

163 miles

Endpoints:
- Big Stone South substation near Big Stone City, SD
- New Ellendale substation near Ellendale, ND

Cost ~ $220M

In-service 2019
Project Partners

HDR Engineering, Inc. - Environmental and Outreach (Jun. 2012)
Power Engineers - Engineering (Jun. 2012 & Nov. 2014)
Kadrmas, Lee & Jackson (KLJ) – Survey and Land Rights (Oct. 2012)
Towill - LiDAR Data Collection & Processing (May 2013)
Burns & McDonnell - Owners Engineer (May 2015)
Beste Consulting - Construction Management Services (Dec. 2015)
Braun Intertec - Steel Structures and Roads (Mar. 2016)
Northern Technologies, LLC - Construction Material Testing (Jun. 2016)
Power Consulting Associates, LLC (PCA) - Construction Inspectors (Jul. 2016)
Jacobsen Tree Experts - Tree Clearing (Oct. 2015)
Webster Scale - Laydown Yard and Road Access (Nov. 2015)
Dahn Construction - Construction Access (May 2016)
Tri-State Drilling - Civil/Foundations (Jun. 2016)
Agencies & Stakeholders

- **Federal**
  - US Fish and Wildlife Service (USFWS)
  - ND United States Army Corps of Engineers (ND USACE)
  - SD United States Army Corps of Engineers (SD USACE)
  - Environmental Protection Agency (EPA)
  - USDA – NRCS
  - Sisseton Wahpeton Oyate (SWO)

- **State**
  - ND Public Service Commission
  - ND Department of Health
  - ND and SD State Historical Preservation Office
  - ND and SD Department of Transportation
  - SD Public Utilities Commission
  - SD Department of Environmental and Natural Resources
  - South Dakota State University

- **Other Permits and Agreements**
  - Counties / Townships
  - Railroad Crossings
  - Pipelines
Agenda

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Routing Process

- Data and regulatory requirements → Identify study area
- Stakeholder feedback → Identify study corridors
- Data and public and agency feedback → Identify preliminary routes
- Public and agency feedback → Identify preferred route

Routing criteria:
- (Tribal and federal, state, and local agencies)

Preliminary routes:
- Public Meetings
- Preferred routes
Owner’s Routing Criteria

Information evaluated:

- Existing rights-of-way (transmission lines, pipelines, railways, or roads), survey lines, and natural division lines
- Populated areas/residences
- High density of natural features
- River crossing locations
- Public and private airports
- Length
- Public and agency feedback
  - Agricultural practices
  - Routing on balanced land ownership
  - Opportunities to minimize impacts during construction
Routing Process: Stakeholder Engagement

8,500+
Landowner letters, mailed newsletters & email blasts

6
Public open houses & hearings in North and South Dakota
Routing Process: Study Corridor
Routing Process: Segments Reviewed
Routing Process: Route Segment Alternatives
Routing Process: Preliminary Routes
Routing Process: Final Route
• Background
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USFWS Collaboration
USFWS Collaboration
USFWS Collaboration
SWO Collaboration
SWO Collaboration
South Dakota State University Collaboration
Perpetual floodplain easement to the Federal Government through the NRCS administration program.

Easement didn’t allow any transmission facility to occupy the easement area.

We acquired additional acres to fit the easement program within the same 80 acres.

We dedicated approx. 5 ½ acres to the easement program to offset the 4 ½ acres occupied by the project ROW.

From start to finish it took more than 3 years to work through.

It is only one of two known transmission facilities to get through the entire process nationwide.
Project Planning

Contractor safety, health, and environmental plan

Each worker commits to achieving a project goal of zero injuries
Project Team Collaboration
Final Stats

- OSHA rate less than 1.0
- Costs all in with permitting - $1.3M/mile
- Met schedule Construction Duration (months): 32 months
- Number of parcels crossed: 420
- Number of miles: 163
- Number of structures: 753
- Cubic Yards of Concrete: 63,061
- Pounds of Steel (Poles, Arms, etc.): 39,875,333 lbs
- Feet of Conductor: 5.2M feet (860K feet ea static and OPGW)
Key Lessons Learned

1. Coordinated Communication
2. Early Rapport
3. Emphasize and Empathize
4. Manage Schedules and Relationships
Soft Stuff is the Hard Stuff
THANK YOU