



Hankinson-Ellendale Transmission Line Reroute Post-Construction Inspection Report PU-09-674

Prepared for:

NORTH DAKOTA PUBLIC SERVICE COMMISSION

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1.0 Executive Summary

The North Dakota Public Service Commission (PSC) retained Wenck Associates, Inc. (Wenck) to complete a construction inspection of the Hankinson-Ellendale Transmission Line Reroute (Project) in Sargent County, North Dakota (ND) owned and operated by Otter Tail Power Company (Otter Tail). Construction for the Project was completed in December 2010. Wenck reviewed all Project documents to identify those aspects which required compliance and visually inspected the Project area on 19 November 2012.

The Project was well-maintained and appeared to have been constructed as planned with numerous efforts to minimize impacts. However, there were several non-critical issues that may need to be resolved for the Project to be considered complete and in full compliance, including written verification of some items. Wenck expects follow-up actions taken by Otter Tail to address these particular issues can be corroborated in writing or photos and will not require a subsequent site visit. Wenck recommends the PSC take the following steps to resolve these issues.

Recommended Action Steps

→Request Now

- As-built engineering design drawings

→Review Internally, Clarify, Then Request if Needed

- Verification that no new discoveries of cultural, archeological, or historic sites were found during construction.
- Verification that no threatened or endangered species or bald and golden eagles were encountered during construction.

2.0 Background & Scope

2.1 INTRODUCTION

The Hankinson-Ellendale Transmission Line Reroute (Project) was completed in 2010 in Sargent County, North Dakota (ND) about 3 miles southwest of Forman (**Figure 1**). The Project is operated by Otter Tail Power Company (Otter Tail). The Project is a 0.53 mile reroute around Fiala Lake of an existing transmission line. The Project is under the jurisdiction of the North Dakota Public Service Commission (PSC), which issued its Findings of Fact, Conclusions of Law, and Order in Case No. PU-09-674 on 24 February 2010, granting a Certificate of Site Compatibility for a Transmission Facility Corridor No. 112 and Route Permit No. 122 for the Project.

2.2 PURPOSE

The North Dakota Energy Conversion and Transmission Facility Act (North Dakota Century Code Chapter 49-22) authorizes the Public Service Commission to determine that the location, construction, and operation of jurisdictional energy conversion and transmission facilities will produce minimal adverse effects on the environment and the welfare of citizens of North Dakota. Post-construction inspections ensure that such projects are constructed in compliance with the siting laws (North Dakota Century Code Chapter 49-22) and rules (North Dakota Administrative Code Article 69-06) and the applicable Commission Findings of Fact, Conclusions of Law, and Order (Order). The North Dakota PSC retained Wenck Associates, Inc. (Wenck) to complete a construction inspection of the Project.

2.3 METHODS AND SCOPE OF INSPECTION

2.3.1 Project Specifications Identified

Wenck identified a list of “Project Specifications”, which the company was obligated or responsible to follow and that can be verified either in written documentation or by an on-site inspection. These items were taken from 1) siting laws and rules, 2) Project activities or specifications proposed in the Application, 3) Project plans described in the Findings of Fact, 4) Orders, and 5) recommendations by other agencies. These Project specifications are listed in Table 2.1 within 7 categories: Siting & Location; Project Design & Engineering; Pre-Construction; Cultural Resources; Natural Resources; Construction, Reclamation & Soils; and Operation.

2.3.2 Document Review

Wenck staff reviewed publicly-available Project documents in the PSC Online Case Search (ND PSC 2013) to find written verification of compliance for the Project specifications listed in Table 2.1. If written verification was filed, the findings are described in Section 3 and the source and name of the documentation is listed in Table 2.1, Column 3 (Written Verification). Shaded boxes in the table represent Project specifications that are potentially non-compliant because they have no written verification.

2.3.3 On-Site Inspection

Luke Toso, Wenck botanist and natural resource scientist, visited the Project site on 19 November 2012. Todd Langston, Otter Tail Construction Manager for the Project, accompanied Wenck staff during the site visit and assisted with navigation, pointed out problem areas, and answered questions.

The site was inspected visually by walking the Project area. Digital photographs (Canon Power Shot SD1300 IS, 12 megapixel) were taken showing typical Project infrastructure and documenting problem areas (**Appendix A**). Geographic coordinates were recorded at observation points or potential problem areas using a handheld Global Positioning System (GPS) (Garmin GPSMAP 60CSx; <10m accuracy; NAD83 datum) (**Figure 1; Appendix B**).

If on-site inspection of a Project specification was completed, the findings are described in Section 3 and referenced in Table 2.1, Column 4 (Site Verification). Shaded boxes in the table represent Project specifications that are potentially non-compliant based on site verification.

Table 2-1: Project Specifications with Written or Site Verification Information

| Source of Project Specification | Description of Project Specification | Written Verification* | Site Verification* |
|---|--|---|--------------------|
| | SITING & LOCATION | | |
| Order 1 | Designated location in Section 14 Township 130N Range 56W Sargent County, ND. Project is a 0.53 mile reroute of an existing transmission line around Fiala Lake. | N/A | Section 3.1.1 |
| ND Admin. Code Article 69-06-08; App. p. 2 | Siting Criteria analysis – exclusion, avoidance, selection, policy. Avoidance areas: historical resources, woodlands, wetlands. | Docket #4, Application | Section 3.1.2 |
| | PROJECT DESIGN & ENGINEERING | | |
| Order 16 | As-built engineering design drawings submitted to PSC. | None. | N/A |
| | PRE-CONSTRUCTION | | |
| ND Century Code Ch. 49-22-07.1; ND Admin. Code Article 69-06-03 | Letter of intent. | Docket #1, Letter of Intent | N/A |
| ND Century Code Ch. 49-22-08; ND Admin. Code Article 69-06-04 | Application for a certificate of site or corridor compatibility. | Docket #4, Application | N/A |
| ND Century Code Ch. 49-22-07 | Certificate of site compatibility or route permit. | Docket #17, Certificate no. 112, Route Permit no. 122 | N/A |
| ND Century Code Ch. 49-22-04; ND Admin. Code Article 69-06-02 | Ten-year plan (submit before July 1). | Case No. PU-12-451, 2012 10 Year Plan | N/A |
| Order 4, 6 | Conduct pre-construction conference. Provide notice of intent to start construction. | Docket #20, Pre-construction Conference Call Notes and Notice of Intent to Start Construction | N/A |
| Order 20 | Inform PSC of plans to modify facility and obtain approval. | None filed to date. | N/A |
| Order 5 | Obtain permits and approvals from other agencies and provide copies. Abide by the terms and conditions of the Nationwide Permit No. 12. | Docket #4, Application | N/A |
| | CULTURAL RESOURCES | | |
| SHPO (10-2-2009) | Obtain SHPO concurrence. Provide copy to Commission. | Docket #4, Application p 35, SHPO Concurrence letter | 3.4.1 |

| Source of Project Specification | Description of Project Specification | Written Verification* | Site Verification* |
|---|--|---|--------------------|
| Order 9 | Report discovery of cultural, archeological, historic sites. Construction stopped, SHPO consulted and clearance required, report to Commission filed. | None reported to date. | N/A |
| | NATURAL RESOURCES | | |
| USFWS (11-17-2011); NDGF (10-13-2009); NDWC (11-17-2009) | USFWS and NDGF: Mark overhead powerlines to minimize potential for whooping crane impacts. USFWS: avoid/minimize impacts to existing habitat. The ND Water Commission (NDWC) requested that waste be disposed of properly and no fill material be placed in the waterbody. | None. | Section 3.5.1 |
| Order 8; USFWS (12-9-2009) | Report presence of T+E species, bald or golden eagles during construction and operation. | None reported to date. | Section 3.5.2 |
| Order 13; USFWS (12-9-2009); NRCS (10-22-2009); NDPR (10-23-2009) | Reclamation, fertilization, and reseeding according to NRCS and FSA recommendation for CRP, native prairie and other lands unless specified by landowner or approved by PSC. USFWS, NRCS, NDPR request: reseed with native species. | None. | Section 3.5.3 |
| Order 15 | Compliance with "Tree and Shrub Mitigation Specifications". Cuts through woodlands limited to 125ft. | None. | Section 3.5.4 |
| | CONSTRUCTION, RECLAMATION & SOILS | | |
| Order 6, 11 | Construction suspended during adverse weather conditions. Provide weekly construction reports. | Docket #21, 22, 24, 25, Construction Progress Reports. Docket #22, suspended due to muddy conditions. | N/A |
| NDDH (10-14-2009), NRCS (10-22-2009) | NRCS, NDDH: Soil erosion minimized by use of BMPs during and after construction to protect groundwater and soils/topsoils. NDDH concerns: minimize fugitive dust, degradation of waterways, storm water management, and noise. | None. | Section 3.6.2 |
| Order 10, 12, 19 | Pre-existing roads restored to satisfactory condition. Temporary roads removed and restored. Reclamation must be continuous and coordinated with construction. Repair/replace all damaged fences and gates. | None. | Section 3.6.3 |
| | OPERATION | | |
| Order 7, Order 14 | Construct and operate in accordance with Application and safety requirements. Reclamation and maintenance throughout life of facility. | None. | N/A |

| Source of Project Specification | Description of Project Specification | Written Verification* | Site Verification* |
|---------------------------------|--|-----------------------|--------------------|
| Order 17, 18 | Mitigation of TV and radio interference that results from the Project. Work with landowners to determine and implement appropriate damage mitigation measures. | None. | N/A |

***Note: Shaded boxes represent non-compliance or potential non-compliance issues.**

3.0 Findings

3.1 SITING & LOCATION OF FACILITY

3.1.1 Designated Location

The Project was built as proposed in the designated Project area described in the Application and Order (**Figure 1**). Maps of the approved corridor and observations of on-the-ground infrastructure during the inspection appeared to coincide (**Appendix A, Photos 1-3**).

3.1.2 Siting Criteria

Siting criteria were analyzed in detail in the Application for the Project (Docket #4). Wenck confirmed during the site inspection that exclusion and avoidance areas were avoided. Historical/cultural resources were avoided (see Section 3.4). No natural woodlands or shelterbelts were impacted. Wenck also confirmed that impacts to selection and policy criteria were considered and kept at a minimum.

3.2 PROJECT DESIGN & ENGINEERING

3.2.1 As-built Drawings and GIS Files

As-built engineering design drawings were not submitted for the Project. However, no time deadline was specified in the Order. Wenck recommends the PSC request the as-builts from Otter Tail.

3.3 PRE-CONSTRUCTION

3.3.1 PSC-Required Documents

A letter of intent was received on 23 September 2009 (Docket #1). On 14 October 2009, the PSC moved that the one year waiting period between filing the letter of intent and the Application be shortened to three weeks (Docket #2, Commission Motion Acknowledging Letter of Intent). An Application for a Consolidated Application, Time Schedule /Waiver of Procedures was subsequently submitted on 12 January 2009 (Docket #4, Application). A Certificate of Site Compatibility No. 112 and Route Permit No. 122 were issued on 24 February 2010. A Ten Year Plan was submitted in 2009 under a different case number (PU-09-430, Otter Tail Power Company Ten Year Plan, submitted 1 July 2009). A current Ten Year Plan was submitted in 2012, also under a different case number (PU-12-451, Docket #1, Otter Tail Power Company Ten Year Plan, submitted 29 June 2012).

3.3.2 Pre-Construction Conference/Notice of Intent to Start Construction

Record of the pre-construction meeting and notice to start construction was on file (Docket #20, Preconstruction Conference Call Notes and Notice of Intent to Start Construction).

3.3.3 PSC Approval of Modifications

No plans to modify the facility were submitted to date. Observations during the inspection and maps of the approved corridor appeared to correspond.

3.3.4 Permits and Approvals from Other Agencies

Easements from both landowners within the Project area were on file (Docket #4, Application, Appendix B). The US Army Corps of Engineers (ACOE) Nationwide Permit was also on file (Docket #4, Application, Appendix F). No other permits appeared to have been required for the Project.

3.4 CULTURAL RESOURCES

3.4.1 SHPO Concurrence

The State Historical Society (SHPO) concurrence was provided to the PSC (Docket #4, Application, p 35, ND SHPO Concurrence letter).

3.4.2 Reporting

No new discoveries of cultural, archeological, or historic sites have been reported to the PSC to date. Presumably no new sites were encountered during construction of the Project.

3.5 NATURAL RESOURCES

3.5.1 Agency Requests (USFWS, NDGF)

The US Fish and Wildlife Service (USFWS) and ND Game and Fish Department (NDGF) requested that overhead powerlines be marked to prevent collisions from whooping cranes and other migratory birds. Wenck observed that overhead power lines were marked where requested (**Appendix A, Photo 2**).

The USFWS requested that impacts to potential whooping crane habitat on Fiala Lake be avoided or minimized and the ND Water Commission (NDWC) requested that waste be disposed of properly and no fill material be placed in the waterbody. During the site inspection, it was observed that structures adjacent to the Lake did not appear to impact the waterbody. Riprap was in place at one structure to protect it from wave action and erosion (no picture available). No fill material was observed in Fiala Lake around this area. It appeared that Otter Tail minimized construction disturbances around the Lake, and no negative impacts were observed.

3.5.2 Reporting

There were no reports filed to date of the presence of threatened or endangered species and bald or golden eagles present during construction to date. Presumably none were encountered during construction of the Project.

3.5.3 Reclamation & Reseeding

Construction activities appeared to have had minimal disturbance; minor reclamation would have been necessary. It was not clear if reseeding had occurred following construction, but, nonetheless, vegetation was established surrounding structure locations.

3.5.4 Tree & Shrub Mitigation

No trees or shrubs were impacted as a result of construction. No further mitigation measures are required.

3.6 CONSTRUCTION, RECLAMATION & SOILS

3.6.1 Construction Management & Safety

Progress reports were submitted for the duration of construction (Docket #21, 22, 24, 25, Progress Reports). Construction was halted on 15 March 2010 due to wet soil conditions. Construction resumed on 29 November 2010 and was completed on 10 December 2010. Safety measures were presumably implemented during construction.

3.6.2 Erosion & Sedimentation

The ND Department of Health (NDDH) requested that the Project minimize fugitive dust, degradation of waterways, manage stormwater, and noise. Best Management Practices (BMPs) were used as part of the construction and maintenance of the Project to control erosion, sedimentation, and manage stormwater, as requested by NDDH and Natural Resources Conservation Service (NRCS). Erosion control structures were removed following completion of the Project, and were not observed during the inspection. No erosion problems were observed. Fugitive dust and noise were presumably controlled during construction activities.

3.6.3 Reclamation & Roads

Construction traffic used the public road 130th Ave. and a landowner's private road to access the Project during construction (**Figure 1**). These roads appeared to have been restored and were in good condition during the inspection. A temporary access path had been used, but no evidence of disturbance was observed due to successful reclamation.

The old structure bases were still in the lake during the site inspection (**Appendix A, Photo 3**). However, the landowner requested them for personal use and would collect them when they float to the surface.

3.6.4 Restoration and Repairs

The Project area appeared to have been successfully restored to previous conditions during the inspection; presumably, restoration occurred continuously with construction. All fences had been repaired and were functional. No gates had been damaged during construction.

3.7 OPERATION

3.7.1 Safe Operation and Maintenance

The Project was constructed to avoid damage to the existing transmission line because it had been compromised by its location in rising water. The fact that the Project was undertaken shows Otter Tail's commitment to maintenance, safe operations, and sustainable transmission for its facilities.

3.7.2 Public Relations

No reports of increased TV or Radio interference were reported to the PSC to date. The Otter Tail representative stated if any interference occurred as a result of the Project, it would be handled promptly because Otter Tail makes every effort to maintain a good rapport with the community.

4.0 Issues to Resolve and Recommendations

4.1 PROJECT SPECIFICATIONS NEEDING WRITTEN VERIFICATION

Several components of the Project were asserted in the Application or proposed construction and could be verified in writing, but have not been filed with the PSC. Table 2-1 summarizes these items, which are indicated as those shaded in the “Written Verification” column, indicating no written verification was provided where applicable and necessary. Wenck does not consider these items critical, but may be necessary to consider the Project in full compliance. Wenck recommends the PSC request from Otter Tail the following “Necessary Items” and/or “Potential Items”:

Necessary Items

- As-built engineering design drawings

Potential Items

- Verification that no new discoveries of cultural, archeological, or historic sites were found during construction.
- Verification that no threatened or endangered species or bald and golden eagles were encountered during construction.

5.0 Conclusions

Overall, the Project appeared to have been constructed as designed with minimal impacts to the surrounding natural or human environment. The Project site was well-maintained and in good condition. However, Wenck noted several issues that may need to be resolved before the Project is considered complete and in full compliance. These included written documentation of as-built engineered drawings; confirmation that no cultural resources were discovered; and confirmation that no threatened or endangered species or bald and golden eagles were encountered. These issues are not critical, but the PSC should determine which are necessary for the company to comply with and then notify the company what actions are required on their part.

6.0 References

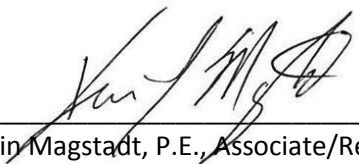
North Dakota Public Service Commission (ND PSC). 2013. Online Case Search. Available from: http://www.psc.nd.gov/database/company_case_list.php. Accessed November, December 2012; January 2013.

Langston, Todd. 2012. Construction Manager, Otter Tail Power Company. Personal Communication: discussion during site visit.

7.0 Signatures

The services performed by Wenck scientists for this project have been conducted in a manner consistent with the degree of care and technical skill appropriately exercised by professionals currently practicing in this area under similar time and budget constraints. Recommendations and findings contained in this report represent our professional judgment and are based upon available information and technically accepted practices at the present time and location. Other than this, no warranty is implied or expressed.

Project Manager, Kevin Magstadt and Luke Toso, Botanist/Natural Resources Specialist, prepared this report.



Kevin Magstadt, P.E., Associate/Regional Manager

2/13/2013
Date



Luke Toso, Botanist/Natural Resource Scientist

2/13/2013
Date

Figures



North Dakota Public Service Commission

Hankinson-Ellendale 0.53 mile Transmission Line Reroute
Section 14, T130N, R56W - Sargent County, ND



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Figure 1

Appendix A

Photographs



Photo 1. Direction: East. View of the first transmission structure installed for the reroute just east of 130th Ave. SE in Section 14, Township 130 North, Range 56 West (**Figure 1**).



Photo 2. Direction: Northeast. View of the transmission line showing bird diverters along the line, which are faintly visible (indicated by black arrows).



Photo 3. Direction: Northwest. View across Fiala Lake towards the rerouted transmission line. Two tangents were used to route the transmission line; both were located nearby the Lake, but only one was within close proximity, and it had riprap installed to prevent erosion and to protect the structure. No erosion or sedimentation was observed to the Lake. By request, the landowner will remove the old poles when they float to the surface (seen to the left and across the lake to the right).

Appendix B

Field Observation Points

Appendix B: Field Observation Points (GPS Coordinates)

| Description | Latitude* | Longitude* |
|---------------------------|-----------|------------|
| Beginning of reroute | 46.07378 | -97.67270 |
| General observation point | 46.07428 | -97.67464 |
| General observation point | 46.07470 | -97.66568 |

*Data Source: NAD 1983

