

MINNESOTA POWER
and
GREAT RIVER ENERGY

APPLICATION TO THE
MINNESOTA PUBLIC UTILITIES COMMISSION
FOR A
ROUTE PERMIT

ALTERNATIVE PERMITTING PROCESS

TOWER
115 kV TRANSMISSION PROJECT

Docket ET2, E015/TL-06-1624



December 2006

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LIST OF ACRONYMS

ACRONYMS	
AC	Alternating Current
ACSR	Aluminum Conductor Steel Reinforced
APE	Area of Potential Effect
BMPs	Best Management Practices
BPA	Bonneville Power Administration
Commission	Minnesota Public Utilities Commission
CSAH	County State Aid Highway
dB(A)	Decibel (A-weighted)
D&IR	Duluth & Iron Range Railroad
DM&IR	Duluth Missabe & Iron Range Railroad
EMF	Electromagnetic Fields
EPA	Environmental Protection Agency
EQB	Minnesota Environmental Quality Board
FAA	Federal Aviation Administration
FACW	Facultative Wet
FEMA	Federal Emergency Management Agency
FSI	Farmlands of Statewide Importance
GRE	Great River Energy
HVTL	High Voltage Transmission Line
ICD	Implantable Cardioverter/Defibrillator
IRR	Iron Range Resources
kV	Kilovolt
kV/m	Kilovolt per meter
LCP	Lake Country Power
MBTA	Migratory Bird Treaty Act
MDNR	Minnesota Department of Natural Resources
MNDOT	Minnesota Department of Transportation
ma	milliampere
mG	Milligauss
MHz	Megahertz
MISO	Midwest Independent Transmission System Operator
MP	Minnesota Power
MPCA	Minnesota Pollution Control Agency
MVA	Megavolt-ampere
MW	Megawatt
NAC	Noise Area Classifications
NESC	National Electric Safety Code
NIEHS	National Institute of Environmental Health Sciences
NHIS	Natural Heritage Information System
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Properties
NRCS	Natural Resources Conservation Service

ACRONYMS	
NWI	National Wetlands Inventory
OBL	Obligate
ppm	parts per million
RS	Route Segment
RUS	Rural Utilities Service
SHPO	Minnesota State Historic Preservation Office
SLCCP	St. Louis County Comprehensive Plan
SNAs	Scientific and Natural Areas
SNF	Superior National Forest
SSC	Species of Special Concern
SWPPP	Stormwater Pollution Prevention Plan
THPO	Tribal Historic Preservation Officer
USACE	United States Army Corps of Engineers
USDOE	United States Department of Energy
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WMAs	Wildlife Management Areas
WPAs	Waterfowl Production Areas

Application for a Route Permit for a High Voltage Transmission Line and Associated Substations to Support Increased Load Growth in Northeastern Minnesota

Pursuant to Minn. Stat. § 116C.51 to 116C.69 and Minn. Rules 4400.0400 *et seq.*, Minnesota Power (MP) and Great River Energy (GRE) hereby apply to the Minnesota Public Utilities Commission (Commission) for a Route Permit for a high voltage transmission line (HVTL), a new substation, and a new switching station in St. Louis County, Minnesota (the Project). The Project has been certified to meet the electrical needs of MP and GRE cooperative's customers located in northeastern Minnesota. The application is submitted under the Alternative Permitting Process (Minn. Rules 4400.2000).

The Application is divided into 12 sections as follows:

1. **EXECUTIVE SUMMARY** – provides background information on MP, GRE, and Lake Country Power (a GRE cooperative) and a brief description of the Project.
2. **INTRODUCTION** – provides a discussion of the need for the Project; eligibility for the Alternative Permitting process; summary of the Certification process and the notice to the Commission.
3. **PROJECT INFORMATION** – describes the proposed ownership of the line and associated facilities (Minn. Rules 4400.1150, subp. 2A, B), the permittees for the Project (contact information), Project location and proposed schedule. Provides cost analysis of the proposed Project, including costs of construction, operation, and maintenance (Minn. Rules 4400.1150, subp. 2K).
4. **ALTERNATIVES CONSIDERED AND REJECTED** – identifies alternative transmission line route segments and substation sites considered by the applicants and the reasons they were rejected (Minn. Rules 4400.2100).
5. **DESCRIPTION OF THE PROPOSED PROJECT** – provides an explanation of the route and substation site selection process; provides a detailed description of the proposed Project (Minn. Rules 4400.1150, subp. 2D) and describes possible design options to accommodate expansion of the Project in the future (Minn. Rules 4400.1150, subp. 2L).
6. **ENVIRONMENTAL INFORMATION** – provides a description of the environmental setting, effects on environmental and human resources, and mitigation measures (Minn. Rules 4400.1150, subp. 2E and 2F, and subp. 3), including the identification of land uses and environmental conditions along the proposed route.

7. **ENGINEERING AND OPERATIONAL DESIGN OF PROPOSED HVTL** – describes engineering and operational design concepts for the proposed Project, including electric and magnetic fields, air quality and radio/TV interference (Minn. Rules 4400.1150, subp. 2J).
8. **PROPERTY/RIGHT-OF-WAY ACQUISITION AND RESTORATION** – describes utility and public rights of way along the proposed route (Minn. Rules 4400.1150, subp. 2I). Describes right-of-way requirements, property/right-of-way acquisition procedures (Minn. Rules 4400.1150, subp. 2M), tree clearing and right-of-way restoration procedures.
9. **CONSTRUCTION PRACTICES AND OPERATION AND MAINTENANCE OF THE HVTL AND SUBSTATIONS** – provides a narrative description of the procedures and practices for construction, operation, and maintenance of the proposed line and substations (Minn. Rules 4400.1150, subp. 2M).
10. **AGENCY INVOLVEMENT, PUBLIC PARTICIPATION, AND PERMITS/APPROVALS NEEDED** – provides the list of agency contacts, lists the landowners along the Project and provides a list and brief description of federal, state, and local permits that may be required for the proposed Project (Minn. Rules 4400.1150, subp. 2N).
11. **SUMMARY OF FACTORS TO BE CONSIDERED IN EVALUATING THIS APPLICATION** – summarizes the key elements of the Route Permit Application and compares them to the established factors to be considered in evaluating this Application (Minn. Rules 4400.3150).
12. **REFERENCES** – lists documents referenced in the text of the Application.

1. EXECUTIVE SUMMARY

1.1 General

MP is an investor-owned utility headquartered in Duluth, Minnesota. MP supplies retail electric service to 135,000 retail customers and wholesale electric service to 16 municipalities in a 26,000-square-mile electric service territory located in northeastern Minnesota (Figure 1-1). MP generates and delivers electric energy through a network of transmission and distribution lines and substations throughout northeastern Minnesota. MP's transmission network is interconnected with the regional transmission grid to promote reliability and MP is a member of the Midwest Independent Transmission System Operator (MISO).

GRE is a not-for-profit generation and transmission cooperative based in Elk River, Minnesota. GRE provides electrical energy and related services to 28 member distribution cooperatives (Figure 1-2), including Lake Country Power (LCP), the distribution cooperative serving a portion of the area to be supplied by the proposed high voltage transmission line (HVTL). The GRE distribution cooperatives, in turn, supply electricity and related services to more than 560,000 residential, commercial, and industrial customers in Minnesota and Wisconsin. GRE is also a member of MISO.

GRE's 2,679-megawatt (MW) generation system includes a mix of baseload and peaking plants, including coal-fired, refuse-derived fuel, and oil plants as well as new wind generators. GRE owns approximately 4,550 miles of transmission line in Minnesota, North Dakota, South Dakota, and Wisconsin.

LCP provides electricity and related services to approximately 47,000 residential, commercial and industrial customers in Minnesota. Approximately 4,700 of its residential, commercial and industrial customers in northeastern Minnesota would directly benefit from the Project.

MP and GRE's mission is to provide safe, reliable, competitively priced energy to those it serves. The electrical load in northeastern Minnesota is expected to grow beyond the capability of the existing electrical system.

Figure 1-1 Minnesota Power Service Territory

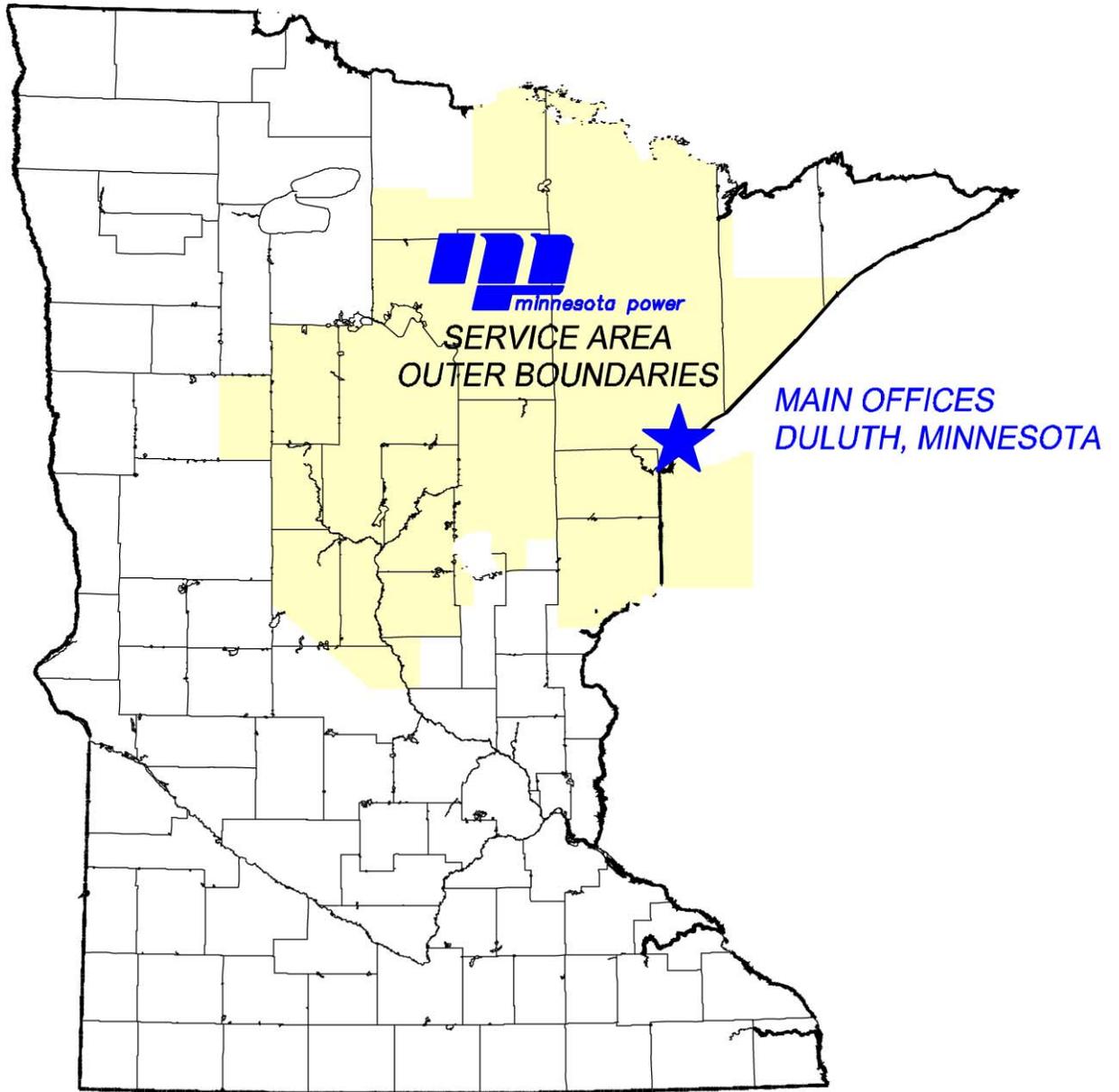
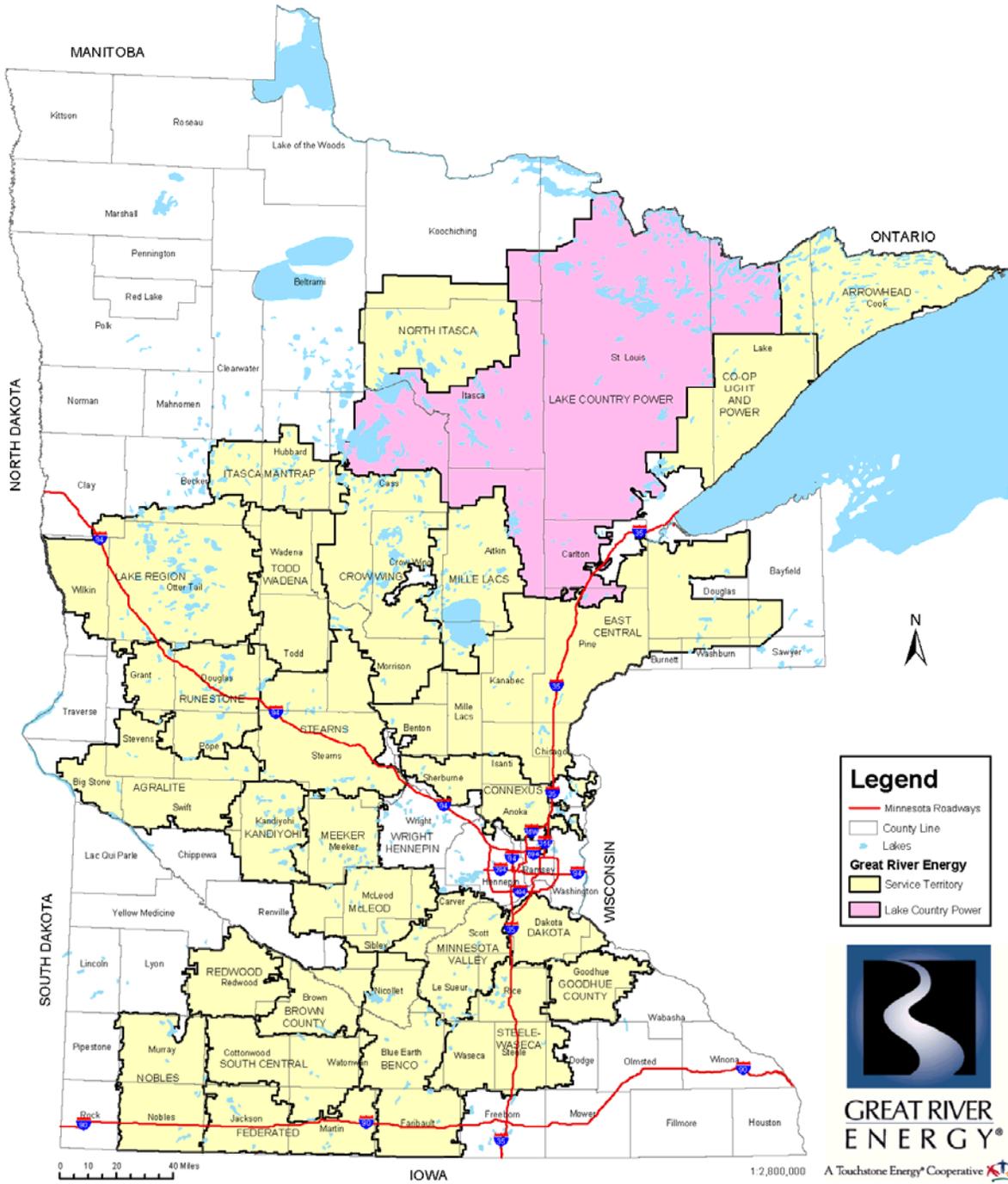


Figure 1-2 Great River Energy Service Territory



1.2 Description of the Proposed Project

MP and GRE propose to construct approximately 14 miles of 115 kilovolt (kV) transmission line, a 115/69/46 kV substation located near the City of Tower and a 115 kV switching station located at the junction of MP's existing (115 kV) 34 Line and (115 kV) 34 Line Tap (located in White Township, Section 7, Township 59N, Range 15W) to meet the growing electrical load in the project area. The project area includes the cities and towns of Ely, Babbitt, Embarrass, Tower and the Lake Vermilion area. The Proposed Route is located within the townships of Kugler, Embarrass and White as shown on Figure 1-3. The two single circuit 46 kV interconnections (one 46 kV circuit would be installed on structures capable of adding a future 69 kV circuit) from the new Tower Substation to the existing 46 kV Line #32 are located in Breitung (W) Township.

Figure 1-3 Proposed Project

