

Appendix D
Project Need Document

Introduction to Appendix D

NEED DOCUMENTATION

This appendix, which includes information regarding the need for the Hiawatha Project, consists of the following four parts:

- **D.1 Electrical System Overview**

This overview provides a brief description of the electrical system as a whole from electrical generation source to consumer, as well as of the transmission and distribution systems and their respective components.

- **D.2 Summary of Need Analyses**

This report summarizes the analyses and conclusions of Xcel Energy's planning engineers contained in the Distribution Planning Department's South Minneapolis Electric Distribution Delivery System Long-Term Study and the Transmission Planning Department's Interconnection Study. This report also includes a summary of electrical alternatives that planning engineers reviewed with respect to addressing the identified need in the south Minneapolis area, as well as other alternatives, including No Build, Conservation / Demand Side Management, Distributed Generation (including Wind Generation and Solar Generation), Smart Technologies and Cogeneration.

- **D.3 South Minneapolis Electric Distribution Delivery System Long-Term Study**

This study summarizes Xcel Energy's Distribution Planning Department's analyses of the electric distribution delivery system in the south Minneapolis area, which indicate that additional distribution system capacity is required, and the Distribution Planning Department's recommendations of how to provide that additional capacity.

- **D.4 South Minneapolis Interconnection Study**

This study summarizes Xcel Energy's Transmission Planning Department's evaluation of the impact various proposed distribution source alternatives could have on the larger transmission system in south Minneapolis.