



SEBESTA  
BLOMBERG

PROVIDING SUSTAINABLE TECHNICAL  
AND BUSINESS SOLUTIONS

## CASE STUDY

### Minnesota Power - Duluth, MN

#### FAST FACTS

- Minnesota Power supplies electric service to 141,000 retail customers
- Minnesota Power transmission and distribution components include 8,886 miles of lines
- Minnesota Power operates 169 substations
- Construction of Minnesota Power's first hydroelectric unit began in 1905

#### ELECTRIC UTILITIES

Minnesota Power, founded in 1870, provides electricity in a 26,000-square-mile electric service territory located in northeastern Minnesota. Minnesota Power supplies retail electric service to 141,000 retail customers and wholesale electric service to 16 municipalities.



Sebesta Blomberg was retained for their first project with Minnesota Power in 1997. Since then, Sebesta Blomberg has provided electric utilities, utility infrastructure, substation design and power plant design services for dozens of Minnesota Power projects, including Boswell Energy Center, Taconite Harbor Energy Center and Grand Rapids Public Utilities Substation.

One of Sebesta Blomberg's first projects for Minnesota Power was the Boswell Energy Center in Cohasset, Minnesota. Sebesta Blomberg was retained because the existing 550 MW coal-fired generator was experiencing failure of unit protective relaying. Sebesta Blomberg provided engineering design services to replace existing electromechanical relaying with a new microprocessor based panel. The project scope included unit protection, main and auxiliary system protection and modification of a fast/slow transfer system.

In 2004, Minnesota Power turned to Sebesta Blomberg again for a project at the Taconite Harbor Energy Center in Schroeder, Minnesota. Sebesta Blomberg engineered and designed the replacement of the 138 kV bus differential relaying panel. The project required a replacement design to accommodate the relocation of the panel from the plant Electrical Control Room to the substation control house.

In 2005, Sebesta Blomberg was retained to provide engineering and procurement services for the installation of a new 115-23 kV substation to replace the existing substation jointly owned by Grand Rapids Public Utilities and Minnesota Power. The project included the installation of new substation equipment, while transferring equipment from the existing substation to the new location. This included design of the relay and control panels for all of the 115 kV line breakers, bus differential and RTU panels. Sebesta Blomberg also provided the relay and control design and the specifications for the new 23 kV switchgear for Grand Rapids Public Utilities at the substation.

Sebesta Blomberg continues to be a trusted electric utilities service provider for Minnesota Power. Sebesta Blomberg engineers are involved in every aspect of a project, from the initial study, through design completion of various Minnesota Power utility infrastructure projects. Uniquely tailored to the client's needs, Sebesta Blomberg has developed operational systems that result in outstanding quality and cost control, successful project coordination, schedule adherence and innovative techniques that exceed project expectations.

