



Sustainable Solutions

Client

Xcel Energy

Location

St. Paul, Minnesota, USA

Converting a Coal-Fired Power Plant to Combined Cycle Natural Gas Facility

Project Description

Since 1923, the Xcel Energy High Bridge power plant has been part of the skyline in St. Paul, Minnesota, providing power to the offices, businesses, and residents of the Twin City community. But the skyline is changing. Xcel Energy is replacing its old coal-fired plant with a combined-cycle natural gas facility that will be larger, cleaner, and more energy efficient. This undertaking is part of Xcel Energy's larger Metro Emissions Reduction Project, conducted in response to Minnesota Statute 216B.1692, a utility rider for the recovery of costs of qualifying emissions reduction projects outside of a general rate case.

CH2M HILL is providing engineering, procurement, and construction services for the new plant, which will come online in 2008. The new High Bridge power plant will generate 580 megawatts, which more than doubles the current output, and provides enough additional electricity to power nearly 300,000 homes.

Working with Xcel Energy, the CH2M HILL team built multiple features into the design and construction that will provide environmental, financial, and community benefits:

- Increased plant efficiency will give Xcel Energy a higher return on investment. A combination of natural gas and steam turbines will be 30 percent more efficient than a conventional steam plant.
- Reduced emissions will improve air quality and reduce greenhouse gas emissions. The new plant will reduce carbon dioxide emissions by as much as 188,200 tonnes (415,000 tons) per year, along with significant reductions in other emissions.
- A visually pleasing exterior will exceed community expectations. The new High Bridge plant will be housed inside an 11-story, 12,000-square-meter (130,000-square-foot) building.

Sustainable Components

- Reduced emissions of greenhouse gasses to improve air quality
- Created a visually appealing covered plant that exceeds community expectations and provides opportunities for multi-use development
- Reduced by approximately 50% the amount of space the plant occupies
- 1 million work hours without a lost-time accident