Carbon-free energy generation returns at Minnesota Power’s Thomson Hydro Station

Duluth, Minn. — Energy generation is returning to Minnesota’s largest hydroelectric facility following an extensive rebuild of Minnesota Power’s Thomson Hydro Station, damaged by record flooding in June of 2012.

Minnesota Power has been working with the Federal Energy Regulatory Commission and other governmental agencies since the flood to re-energize Thomson, which has produced renewable electricity from the St. Louis River southwest of Duluth since 1906.

On June 20, 2012, high water flooded the six turbine generators at Thomson, overtopped the Thomson reservoir and breached a portion of an earthen dike at the forebay, a small reservoir that feeds water into the power station. The flood, the largest on record at Thomson, washed out roads and caused mudslides, limiting vehicular access to the powerhouse for months. The most complex repairs over the last 28 months at Thomson involved extensive work at the powerhouse and the forebay.

“We’re proud to report that the largest contributor in our hydro fleet is back up and running,” said Minnesota Power Chief Operating Officer, Brad Oachs. “It took a natural disaster to knock it offline, but Thomson Hydro’s intrinsic value necessitated its repair and refurbishment. We believe it can generate carbon free energy for another hundred years.”

The $90 million Thomson project, which is largely completed, includes reconstruction of the forebay canal, electrical and mechanical rehabilitation, upgrades to the water conveyance system and construction of additional spillway facilities at Thomson’s main dam.

The original forebay embankment, constructed in 1905, was reconstructed and upgraded to meet current design standards. Minnesota Power worked closely with independent engineering consultants and the Federal Energy Regulatory Commission on the design and rebuild. The forebay reconstruction included building a 2,900-foot-long sheet pile wall and a reinforced concrete emergency spillway capable of handling future flood events.

All six generating units suffered significant damage in the flood. Each turbine and generator was disassembled, cleaned, inspected and refurbished. Insurance covered repairs to much of the flood-damaged equipment in the Thomson powerhouse. The powerhouse and its electrical systems were extensively repaired and upgraded over the last two years.

As a power supply resource, the 71-megawatt Thomson facility brings unique benefits to customers. The ability to hold water and release it through the generating turbines at times of high electric demand make Thomson a flexible and efficient resource. Thomson is the only hydro generator in Minnesota Power’s supply that has the capability to provide peaking type energy for use during periods of high demand.
“Hydro generation is an important part of our company’s EnergyForward strategy of a balanced energy mix,” said Oachs. “Thomson is our oldest facility, an iconic piece of our company history and through this investment remains an important part of our energy future, providing customers with low-cost, renewable energy for years to come.”

The rebuilding of Thomson Hydro will have a modest impact on Minnesota Power’s customer rates. Subject to approval by the Minnesota Public Utilities Commission to add these costs to customers’ bills, for the average residential customer, the rate increase is projected to be around $1 per month.

The company has also systematically invested in other hydro facilities throughout the system in recent years, including Fond du Lac southwest of Duluth, the Prairie River station near Grand Rapids, Winton Hydro near Ely, Little Falls Hydro in Little Falls and at Island Lake and Birch Lake. A number of rededication events designed to celebrate the company’s “Hometown Hydropower” were held in communities around the Minnesota Power service area this summer.

Minnesota Power provides electric service within a 26,000-square-mile area in northeastern Minnesota, supporting comfort, security and quality of life for 143,000 customers, 16 municipalities and some of the largest industrial customers in the United States. More information can be found at www.mnpower.com.

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