Moving the largest CapX2020 transformer between Waukesha, Wis. and Pine Island, Minn. required a train, a 385 foot trailer and three 600 horse power trucks. Weighing 542,000 pounds, equivalent to 110 Ford F-150 pickup trucks, the transformer was delivered to Xcel Energy’s new North Rochester Substation in February as part of the CapX2020 Hampton-Rochester-La Crosse project.

Companies in Minnesota and Wisconsin were used for the manufacture and move. The transformer was designed and built at SPX Transformer Solutions in Waukesha, Wis. Vic’s Crane & Heavy Haul Inc. out of Rosemont, Minn., was in charge of managing and coordinating the transformer move.

The transformer was shipped by rail car from Waukesha to Randolph, Minn. Perkins Specialized Transportation, based in Northfield, Minn., was responsible for the move from Randolph to the substation site near Pine Island. Using a 385 foot trailer including one truck pulling and two pushing for the 40 mile journey, the trailer and its 24 steerable axles and 192 tires took up two lanes of traffic and required a police escort.

The North Rochester Substation is expected to be placed in-service in May 2014. It will connect a 161 kV transmission line to the Rochester area, as well as a 345 kV transmission line running between Hampton, Minnesota and Holmen, Wisconsin. The CapX2020 Hampton-Rochester-La Crosse project is jointly owned by Xcel Energy, Rochester Public Utilities, Southern Minnesota Municipal Power Agency, Dairyland Power Cooperative and WPPI Energy.

What is a transformer?
A transformer steps voltages up or down between different power systems. In the case of the North Rochester transformer, the voltage is stepped down from 345,000 volts to 161,000 volts, which will then feed into distribution substations to be able to serve customers. Read more about how electricity works at www.capx2020.com.
Local Impact:
Q & A with SPX Transformer Solutions in Waukesha, Wisconsin

Q: How long did the CapX2020 transformer take to build?
A: Xcel Energy's order was received by SPX in mid-September 2012 for shipment prior to the end of 2013. The 672 MVA transformer left the Wisconsin facility on December 27, 2013 in time to meet the project's energization schedule.

Q: Did SPX Transformer Solutions hire additional employees to help build the CapX2020 transformer?
A: Since completing our large power factory addition in late 2011 and ramping up production in that area, SPX Waukesha has hired over 200 people at the Wisconsin facility.

Q: Is this the largest transformer SPX builds?
A: This CapX2020 transformer is one of the largest we have built in our expanded Wisconsin facility. However, SPX can build units up to 1200 MVA – nearly double the capacity of this CapX2020 transformer.

On February 18, 2014, the South Dakota Public Utilities Commission approved a Facility Permit for the CapX2020 345 kV Big Stone South-Brookings County transmission line. The 70-mile line will run between a new substation near Big Stone City and the existing Brookings County Substation near Brookings, S.D. Construction is expected to start on the project in late 2015 with a targeted in-service date of 2017.

Facility Permit Approved

Going Local
CapX2020 continues to use local companies including Aggregate industries in Fergus Falls, Minn. and Turner Sand and Gravel in Wolverton, Minn.

2013 spend
More than $580 million was spent on CapX2020 projects in 2013. A record monthly spend of $79 million was reached in October.
Construction between the Cedar Mountain Substation in Renville County and the Helena Substation in Scott County was completed in September 2013 and is scheduled to be energized in 2014. Construction between the Cedar Mountain Substation and the Lyon County Substation near Marshall was completed in November 2013 and is also scheduled to be energized in 2014. Structure setting is nearly complete and stringing is underway on the Helena-Chub Lake segment in Scott and Dakota counties. A helicopter is being used at times to install conductor and components. Foundation construction is underway on the Brookings County-Lyon County segment. The project in-service date is 2015.

Hampton-Rochester-La Crosse

Construction on the CapX2020 Hampton-Rochester-La Crosse 345/161 kV transmission project started in February 2013. The 161 kV segment between the new North Rochester Substation near Pine Island and the existing Northern Hills Substation, northwest of Rochester, is scheduled to be energized in May 2014. Construction on the 345 kV segment between Pine Island and Kellogg is expected to be completed in August 2014. Foundation construction in Wisconsin is expected to begin in the summer of 2014. The project in-service date is late 2015.

Fargo-St. Cloud

Structure erection is taking place in North Dakota west of the Red River. Stringing for phase 3 is beginning at Barnesville and moving west. Stringing the line across Interstate 29 southwest of Fargo is scheduled for March. Construction on phase 2, between Alexandria and St. Cloud continues with helicopters being used to string conductor moving east from Freeport. Construction on phase 2 is scheduled to be complete in fall of 2014.
About the CapX Quarterly

The CapX Quarterly is a quarterly newsletter to inform and update interested stakeholders about CapX2020 project status and milestones. For more information about CapX2020, please visit the project website at www.capx2020.com.

The CapX Quarterly is primarily distributed via e-mail. Sign up for future issues at www.capx2020.com. If you do not have internet access, please call 612-330-5701 to receive a printed version (if you have previously called, you will continue to receive the printed version).

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