The Permitting Process

By Doug Mell

Photo courtesy of Xcel Energy

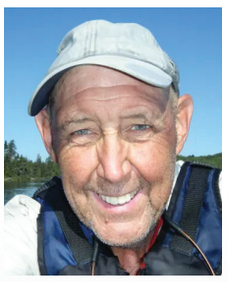
No decision related to building, operating and maintaining a transmission line is made lightly.

We take a look at an example of the process that determines need and oversees the siting, permitting and construction.

As electricity becomes more essential to nearly everything we do and the commitment to greater reliance on *in situ* alternative energy generation becomes a reality, transmission lines have become the nation's economic and social lifelines. This growing reliance on electricity coupled with unprecedented levels of demand make it ever more important that we understand how and why those lifelines are designed, sited, permitted, constructed and maintained and how all of that affects consumer access to reliable, affordable energy.

No decision related to building, operating and maintaining a transmission line is made lightly. There's simply too much at stake in terms of the multiple strategic and economic needs to ensure energy reliability and accessibility (e.g., public health and safety, employment, education, food production and water management).

The magnitude of the financial investment and human resources required to ascertain need, determine an acceptable route, secure the necessary approvals, obtain real estate and build the project also encourages careful, thoughtful, data-based decision making.



DOUG MELL

A look at the Western Wisconsin transmission line project

A look at the Western Wisconsin transmission line project currently under consideration by the PSC provides some glimpse and insights into the thoroughness, complexity, investment and amount of hands-on work involved in getting the electricity consumers need to them when and where they need it.

A LOOK AT the Western Wisconsin transmission line project currently under consideration by the PSC provides some glimpse and insights into the thoroughness, complexity, investment and amount of hands-on work involved in getting the electricity consumers need to them when and where they need it.

Identifying the need for a new transmission line

The electric transmission lines in Wisconsin, 14 other states and the Canadian Province of Manitoba are operated by the Mid-continent Independent System Operator (MISO), a nonprofit, member-based organization regulated by the Federal Energy Regulatory Commission.

Consequently, in Wisconsin the process in which a new transmission line can be approved and built starts with MISO's identification of need and its approval and recommendation of a route for the proposed transmission line to the Wisconsin Public Service Commission.

The need for a Western Wisconsin transmission line was identified during a multiyear planning process that MISO started in 2019 dedicated to examining, "… industry trends around resource and technology developments that highlighted growing challenges around resource availability, flexibility and visibility of the resource fleet in meeting future energy needs." That examination resulted in the development of a "long-range transmission planning portfolio dedicated to making sure the MISO transmission system could … meet demand in all hours while supporting the resource plans and renewable energy penetration targets."

MISO's approval and recommendation

MISO's two-year-plus extensive examination led the organization to conclude in 2022 that 18 transmission projects with a total initial cost of $10.3 billion would be needed to protect energy reliability in the MISO Midwest subregion. One of the 18 projects proposed in 2022 is the $505 million project in Western Wisconsin originally called the Tremval-Eau Claire-Jump River, which the Wisconsin PSC said would involve constructing, "… a new 345 kV (kilovolt) high voltage transmission line (HVTL) in the counties of Chippewa, Clark, Eau Claire and Trempealeau. The project would also rebuild existing lines, construct new 345 kV substations depending on the chosen transmission route, and expand or upgrade multiple existing substations."

The MISO Board of Directors officially approved the Tremval-Eau Claire-Jump River project in July 2022.

The Wisconsin Public Service Commission exercises its authority

In Wisconsin, projects such as the Tremval-Eau Claire Jump River project require a certificate of public convenience and necessity from the PSC and to that

Photo courtesy of Xcel Energy

end the PSC requires that utilities in the affected area must provide at least two routes for the Commission to consider, which is why Xcel Energy got involved directly and productively with the project in 2022.

MISO was developing a long-range transmission planning portfolio, remembered Mara Ascheman, Xcel's regional vice president of Rates and Regulatory Affairs. "What MISO said during that process was, we see this energy transition coming and we really want to think about what the transmission capability is we need, not only here in Wisconsin, but throughout the whole MISO footprint," she said.

Keeping that objective and the need to submit a second route choice in mind, Xcel's engineers, analysts and other experts studied the cost and feasibility of the MISO recommended route and then developed an alternative, which was a 94-mile transmission line that would start at an expansion of the Tremval Substation near Blair in Trempealeau County, then move north to the east of Eau Claire before heading west into Eau Claire itself. From there, it would continue northeast, ending at the proposed Jump River Substation North near Sheldon in Chippewa County.

Over the next two years, as the Xcel team developed their approach, they believed that they could identify a different, less expensive route. "Our project team said, this transmission line is intending to connect the three existing 345 kV lines in the state, and another way to do that would be to do it farther south and parallel Highway 29 instead of paralleling the Chippewa River," Ascheman said.

Pursuing that objective involved, Ascheman said, all the diverse expertise required to assemble a permit including engineers, project managers, permitting leads, environmental specialists, attorneys and many others. According to the Certificate of Public Convenience and Necessity (CPCN), Xcel Energy has projected $9.2 million

Photo courtesy of Dairyland Power Cooperative

THE PROJECT WOULD FILL A NEED for a reliable transmission grid to support future generation resources and future load and allow for the interconnection of new renewable energy sources.

in pre-certification costs for the project. These costs encompass all the time and effort needed to prepare and secure the permit, covering engineering, environmental and legal work, she added.

Xcel Energy wasn't alone in making financial and human investments in the effort. American Transmission Co. (ATC), a co-applicant on the project, would be constructing a new substation, the Jump River Substation, which ATC will own and operate. ATC, based in Wisconsin, owns, operates and maintains over 10,000 miles of electric power lines and 587 substations in portions of Wisconsin, Minnesota, Illinois and the Upper Peninsula of Michigan.

Ascheman explained that ATC "has formed a cross-functional project team to efficiently plan and execute our portion of the Western Wisconsin Transmission Connection Project. This team includes both employees and contractors from various disciplines, including engineering, construction, environmental management, real estate, operations, local relations, GIS, communications, regulatory affairs, supply chain, and additional relevant fields." There are about 50 members of this team, with various degrees of involvement.

Just over $800,000 in pre-certification costs for ATC has been projected, Ascheman said. "These costs include the time and effort required to prepare and plan for our portion of the project."

Route 2, developed by Xcel Energy, is a proposed 80-mile transmission line that runs through Chippewa, Clark, Eau Claire and Trempealeau counties. It starts at an expansion of the Tremval Substation near Blair in Trempealeau County, following a similar path as Route 1 for the first 40 miles. It then takes a more eastward route before turning north, avoiding Eau Claire, and terminates with the Jump River South Substation.

In August 2024, Xcel Energy submitted the MISO-approved route, now with an estimated cost of about $670 million, and their alternative route costing about $483 million. "In our application we compared the costs and the impacts to people and the environment and determined that of the two routes on the table, Route 2 was our preferred option," Ascheman said.

According to the PSC, "The applicants state the project would fill a need for a reliable transmission grid to support future generation resources and future load. The project would allow for the interconnection of new renewable energy sources as fossil-fuel generation sources are retired. Additionally, the project would reduce load on multiple facilities in northern and northwestern Wisconsin."

The public had opportunities to weigh in

Public hearings were held and the PSC approved the route in late October 2025. The timeline calls for landowner negotiations and site acquisition in 2025 and 2026, with construction in 2026 and 2027, and completion in 2028.

While the most strenuous, the PSC approval is just one of five that the applicants need from state agencies and three they need from federal agencies.

When asked to comment on the complexity, length of time, and cost of the current process and how it affects reliability, Clair Moeller, MISO's president and chief operating officer at the time said, "MISO is focused on working collaboratively with our diverse stakeholder community to design the transmission system needed for continued reliable and resilient operations. These projects will support the reliable, affordable transition of the generation fleet."

Ascheman greed, saying, "This transmission line is connecting three 345s (kilowatt lines) that has considerable benefits to Western Wisconsin, so if one of those 345s goes out there will be something to connect them to allow that power to move to one of the other lines." ●

Doug Mell is retired from his role as UW–Stout's executive director of communications and external relations, a position he assumed after serving as editor of the Eau Claire Leader-Telegram.