August 16, 2012

RE: Comments on the Department of Energy's and Western Area Power Administration's Defining the Future Process

Xcel Energy[1] appreciates the opportunity to comment on Western Area Power Administration's (Western) process as we move through this period of change in the electric industry. As the nation's largest provider of renewable energy to retail customers, Xcel Energy has seen significant changes in its operations and engagement in expanded planning processes over the last 10 years and offers these comments on how we can meet the challenges of the future.

Western's Defining the Future pre-read document stated several areas they hoped would be addressed in direct response to Secretary Chu's March 2012 memorandum. Specifically, these areas included: Improving PMA Existing Infrastructure; and, Improving Collaboration with Other Owners and Operators of the Grid. In response to this memorandum and subsequent DOE Defining the Future forums, Xcel Energy respectfully offers the following comments.

Transmission Planning

As discussed in the forums, Western's system is highly interconnected across the Western Interconnection, and in addition has a significant geographic presence in the Eastern Interconnection. For this reason, it is important for Western to continue with coordinated planning and operations and expand this engagement where it makes sense in the various regional and state forums that exist today.

Accordingly, Xcel Energy encourages Western to take a more active role in the Western Electricity Coordinating Council's (WECC) Regional Transmission Expansion Planning (RTEP) process. With over 17,000 circuit miles[2], comprehensive transmission planning is difficult to achieve without Western taking this more active role in assisting in the development and implementation of new planning processes, assessment and field testing of new technologies, coordinating transmission planning studies and datasets, and

[1] Xcel Energy is the fourth largest investor-owned transmission system in the United States with more than 18,000 miles and nearly 900 transmission and transmission/distribution substations in 10 states. Major control centers are in Minneapolis, MN; Golden, CO; Eau Claire, WI; and Amarillo, TX. In addition to our electric system, we also operate an extensive natural gas transmission system in Colorado. In other states, where we distribute natural gas, we purchase it from major interstate providers.

[2] DOE/Western Joint Outreach Team: Defining the Future Workshop Pre-Read Material dated July 10, 2012. Xcel Energy is aware that Western operates 17,000 circuit miles – with approximately 11,000 miles located within the western-interconnection. Western operates facilities within at least nine states which covers over half of the WECC footprint. No other single entity within WECC has this large a geographical presence.

encouraging close coordination and collaboration with adjoining transmission owners and providers. Western can better engage in RTEP processes such as the Transmission Expansion Planning Policy Committee (TEPPC) activities and the subgroups that comprise TEPPC. Specifically, Western could improve the Technical Advisory Subcommittee (TAS) with enhanced engagement on the Hydro Modeling Task Force (HMTF) through improved data sharing using the Argonne GTMAX data as appropriate. Other task forces that would benefit from Western's enhanced engagement would include the Metrics Definition Task Force (MDTF) and the Environmental Data Task Force (EDTF). In addition, some states where Western has a large presence, such as Colorado, have enacted regulatory rules to create statewide transmission plans. We encourage Western to participate and engage in these interregional and local forums that help inform transmission plans and operations on the characteristics of Westerns system while addressing customers' concerns about costs and system expectations. Finally, participation with groups such as the Colorado Coordinated Planning Group and the Southwest Area Planning Group must continue in order to provide coordination at the local levels.

Xcel Energy has engaged in the WECC RTEP efforts to provide our customers the lowest reasonable rates by spending time up-front studying the system in order to realize larger savings through improved system reliability, optimized asset utilization, and enhanced operational efficiency. Examples of potential methods to control costs through appropriate planning would include reduced reserves requirements, lower cost of loss of service, long term savings through optimized facility engineering, construction, and land utilization and efficient utilization of resources, both generation and transmission.

Western's system is so highly interconnected throughout the West that the reliability of the interconnection is most certainly impacted by Western's system. Western's system is growing. In 2010, Western served a peak load of 6,423MW and had 17,107 miles of transmission lines installed[3]. In 2011, Western served a peak load of 7,027MW and had 17,135 miles of transmission lines installed[4] - an increase of 600MW additional peak load served with a small increase in transmission system expansion. Reliable and efficient bulk power system utilization and planning involves both reliability and economic studies, both near term and long term. These studies combined with scenario analysis (e.g., what happens to Western customers during wet or drought years) can provide some insight into transmission system expansion needs, which enable making informed long-term decisions that result in overall cost savings. These studies also help Western identify improvements to its system that may be required and alternatives which might include advanced transmission technologies to optimize existing ROW utilization, non-wires alternatives, and possibly benefits of new market designs. These are all issues and questions that may be addressed or better understood by engaging in these comprehensive regional studies.

Coordination among stakeholders throughout the Western Interconnection is vital for successful planning and operation of the transmission grid. Without sufficient

[3] Western Area Power Administration's Annual Report 2010 – Roadmap for Renewable Energy.
[4] Western Area Power Administration's Annual Report 2011 – Designed to Serve

information embedded into planning and operating forums that incorporates Western's future scenarios, cost effective transmission improvement may not be realized.

Operations

The electric utility industry has seen significant changes in the generation resource portfolio over the last 10 years. The portfolio changes including increasing penetration of variable output renewable generating resources. Given the renewable generation characteristics, it has become apparent that the grid operating and dispatch tools used in the late 20th century are due for improvement. In particular, new tools already used in other regions are facilitating efficient and reliable integration of the new variable resources. These tools also permit more complete utilization of the transmission grid while improving the options available to help manage grid reliability.

While the resource portfolio changes are not yet impacting all entities equally, Xcel Energy recommends making greater use of these existing tools that improve operational efficiency and grid reliability. We have heard some utility stakeholders say "the current system is not broken". But we point out that with electric reliability it is not acceptable to wait until the system is broken to take action.

Western is required by law to provide power "at the lowest possible rates to consumers consistent with sound business practices" (Flood Control Act of 1944 (16 USC Sec. 825s)). The business practices used in the latter years of the 20th century provided the desired low reasonable rates. However, the legacy tools are facing increasing challenges to provide effective energy supply outcomes given increased penetration of variable generation resources and greater wholesale supply diversity. The new tools available through a real-time energy market would allow Western to integrate wholesale suppliers of renewable resources at a lower overall cost, as well as providing Western greater access to resources during unusual system conditions.

As an example of how things have changed across the years, Western's statutes do not require that Western operate a Balancing Authority. However, to fulfill its mission, Western has taken on Balancing Authority responsibilities to help ensure that its customers are provided the energy they need at a reasonable cost. In order to operate as a Balancing Authority Western has invested in control centers, software and other resources.

Western indeed has a duty to customers, including not just recipients of preference power allocations, but open access transmission service customers. Xcel Energy for example is a customer of Western for both point-to-point and network transmission services.

Western also has a duty to comply with mandatory reliability standards and industry operating practices. Selecting new tools and business practices that aid in the fulfillment of these duties is rightly within the organization's scope.

With the advent of centrally-dispatched markets, typical business practices are changing across the industry. These centrally-dispatched markets cover wide areas that include multiple, unaffiliated entities and allow an increased level of economic efficiency. This makes wholesale energy supply costs more competitive and benefits those who rely upon markets to optimize the supply costs for their retail customers. This style of market operation also provides a tool for grid management to help relieve constraints on the transmission system at the least cost while allocating that cost to the appropriate parties.

Western could participate in an Energy Imbalance Market as a transmission owner as well as a generation portfolio owner. As proposed, an EIM will not displace any of the contracted uses of the system. Rather the market would optimize energy supply using transmission available based on real-time flows across the lines. The EIM dispatch optimization allows automated access across the entire EIM footprint, without the delay and limitations imposed by the inefficient, manual processes currently used to grant transmission service.

There is a cost associated with the development and implementation of a market just as there is cost associated with an Energy Management System used by a Balancing Authority. But as studies have indicated, the potential benefits are significant. A well-designed market can be implemented at a cost lower than what is projected for a single year's benefits. The ongoing cost to operate the market is also anticipated to be below the level of annual benefits. Other areas of the United States and many areas of the world have seen that markets lower the cost to integrate variable energy resources and provide competitively-price wholesale power while promoting efficient operation of the electric grid.

If WAPA wholesale preference customers and WAPA transmission service customers work together on the proposed EIM, it can provide broad benefits to all stakeholders. Benefits include lower levels of regulation and backup reserves needed for the Western Balancing Authorities, possibly incremental transmission service revenues that can help offset revenue requirements from customers and increased tools and options to manage regional grid reliability.

Design of Transmission Services

At Western's Loveland gathering, Xcel Energy representatives proposed some new initiatives for consideration in the Design of Transmission Services (DOTS) group session. Those initiatives appeared to be well-received and as a result are repeated here.

The first initiative had to do with requested improvements to the WAPA OASIS posting of non-firm hourly transmission service. Western's current practice is to post hourly non-firm available transfer capability (ATC) 24 hours in advance. In other words, at 9 a.m. today Western will post ATC for 9 a.m. tomorrow. Xcel Energy requested that Western consider posting ATC for the entire next day prior to the WECC scheduling deadlines. We realize that in order to post such ATC this far in advance Western would be making an educated guess at the firm transmission service its customers may schedule, as the

ATC for non-firm is typically using the unutilized firm rights. However, by posting non-firm ATC further in advance, Western should see an increase in transmission revenues without a reduction, or cost, to its firm customers. Non-firm customers realize that their schedules can and do get cut, and in no way are we asking that the priority of non-firm service be somehow increased by this proposal.

The second initiative proposed by Xcel Energy was an engagement of all Colorado-area utilities in a conversation about implementing a joint network transmission tariff. The joint tariff could allow all of the participating systems to use the others' in a manner similar to a network customer of the transmission system under a single network provider. Participation in an Energy Imbalance Market could accomplish similar results although at a lower transmission service curtailment priority, under the current EIM proposal. We recognize that the EIM effort will take some time to come to fruition. If a joint tariff is implemented, it would compliment the development of the EIM and allow a higher priority level of system access among the joint tariff participants than compared to transactions only enabled through EIM dispatch.

A joint tariff may allow the participants more flexibility to dispatch their systems and reduce their power supply costs. There are cautions, however, to this effort, as the joint tariff design must protect against inappropriate cost-shifts between systems. These cost shifts were one of the reasons why similar efforts in the past have failed. However, with the increasing use of renewable resources on all of our systems, the cost savings associated with better-coordinated dispatch can result in significant savings that might overcome some of the cost shift concerns. This effort will only be successful if the major players in our region, including Western, can come to agreement. We are looking forward to beginning the conversation and strongly encourage Western to participate in these efforts.

In summary, it is difficult in today's transmission world for some piece of the interconnected bulk grid to be treated differently or participate differently than the rest, because of mutual impacts and interactions that simply cannot be avoided – especially at the seams. Active mutual participation would be beneficial to all, at the very least for improved knowledge of the system interactions, interfaces and directions. Transmission owners/operators have an obligation not just to their own customers but to the broader interconnected grid, particularly if you are a big piece of the pie in some aspect or another. Given the evolution of planning and operations in the US, the approach to keep short term costs down without a long term plan could be inefficient or even potentially harmful as people have to guess or assume Western's positions/plans rather than have a chance to engage in what should be a mutually beneficial discussion.

Thank you for the opportunity to participate in Western's and the Department of Energy's "Defining the Future" process. Xcel Energy supports broad, open outreach on these critical issues. Xcel Energy looks forward to working with Western and other interested parties to move forward with development of efficient regional energy markets and improved transmission planning processes to ensure reliability and maximize system efficiency.