Chapter 1

“Whether or not a viable regional transmission organization and adequate transmission exist in Nebraska or in a region that includes Nebraska.”

1.0 Purpose

Technical Group #1 dealt with the question "whether or not a viable regional transmission organization and adequate transmission exist in Nebraska or in a region that includes Nebraska".

2.0 Team Members

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3.0 Summary

With the enactment of the Energy Policy Act of 2005 in August, and the announcement by FERC under new chairman Joe Kelliher that FERC intends to take a new direction in its role to ensure that competitive wholesale electric markets are free of discriminatory practices, public power utilities in Nebraska can anticipate that they will have many new requirements to meet in the coming years.

The utility membership status of the Regional Tranmission Organizations (RTOs) that adjoin Nebraska, the Midwest ISO and the Southwest Power Pool (SPP), has solidified to some extent. It does not appear at this time that the geographical boundaries will be changing in the near future due to other utilities joining. The Nebraska utilities continue to remain members of the Mid-Continent Area Power Pool (MAPP), which provides regional transmission services and generation reserve sharing pool functions to the remaining members. The geographical footprint for the MAPP transmission services has shrunk to cover the states of Nebraska, most of North and South Dakota, and parts of Iowa, Minnesota and Kansas. However, the footprint for the generation reserve sharing pool has remained the same as the original MAPP membership footprint. Another consideration in the boundary issues is that the footprint of the Midwest Reliability Organization (MRO), which was formed and became effective in January 2005 to replace MAPP as the NERC Regional Reliability Council, includes all of the original MAPP members and a number of Midwest ISO members and two Canadian provinces. Because the boundaries for transmission service, generation reserve sharing, and Regional Reliability Councils are not the same, it has become increasingly important that proper coordination exist between the regional transmission entities so that reliability is maintained and that the transmission system is not oversold. This has resulted in the execution of seams agreements between the regional entities, which require significant data exchange between the regions, and complicated technical processes and software to implement.

A Seams Operating Agreement (SOA) between MAPP and the Midwest ISO was approved by FERC on March 16, 2005. Full implementation is expected yet this year and should provide better coordination of transmission service and congestion management between MAPP, the Midwest ISO, SPP and PJM.

The Nebraska utilities have concluded that continued membership in MAPP provides the most cost effective solution for participation in a regional transmission organization. FERC is no longer pursuing mandatory participation in a RTO that is approved as meeting all of its requirements. MAPP can continue to function as a regional transmission organization, providing access to the regional wholesale energy markets under its regional transmission tariff, without meeting all of FERC's requirements for a RTO designation. In the upcoming year, the MAPP transmission owners will explore other options for a service provider upon termination of the services agreement with the Midwest ISO in February 2008.

Finally, the Nebraska utilities continue to plan and expand the transmission system in Nebraska to meet their customers' needs as detailed in the latest transmission expansion plan.

3.1 Status of MAPP

The governing organizational document for MAPP, the MAPP Restated Agreement, was further amended by the membership and subsequently approved by FERC on April 13, 2005. There remain two distinct functions governed by the Agreement; the Regional Transmission Committee (RTC) and the Generation Reserve Sharing Pool (GRSP). The changes were made to finalize the unbundling of the MAPP Restated Agreement, which previously included both NERC Regional Reliability Council functions, and a marketing function. Both of those functions have been assumed by newly created and separate organizations: the Midwest Reliability Organization (MRO), and the Mid-Continent Energy Marketers Association (MEMA). The geographical footprint of the MAPP RTC and GRSP differ as described below.

3.2 MAPP RTC

The geographical footprint of the MAPP RTC is comprised of the utilities whose transmission facilities provide transmission service under the MAPP regional transmission tariff, known as Schedule F. Since last year's report, which indicated that the MAPP membership was approximately ½ of its size prior to the startup of the Midwest ISO in 2002, the MAPP membership has changed with Great River Energy, a cooperative in Minnesota, joining the Midwest ISO in December 2004, and Aquila, an investor-owned utility in Missouri, joining SPP in July 2005. It is also expected that Sunflower Electric Power Corporation in Kansas, which is awaiting approval from the Rural Utilities Service, will join SPP in the near future. The remaining MAPP members, which include the Nebraska utilities; NPPD, OPPD, LES, MEAN, and Hastings, as well as utilities serving most of North and South Dakota, and parts of Iowa and Minnesota have concluded the most cost effective option to serve their customers is to maintain their membership in MAPP. While the geographic footprint of MAPP is much smaller than the original size, the MAPP organization still remains viable and the remaining members believe the services provided are cost effective and valuable to their customers, and far less costly than alternatives such as membership in the Midwest ISO or SPP.

To maintain the viability of Schedule F transmission service, which provides a means to make economical wholesale energy sales and purchases on a regional basis, and to ensure that MAPP transmission service is treated equitably with transmission service that is granted in the adjoining Midwest ISO and SPP regions, the MAPP membership agreed to undertake several actions. First, the MAPP membership approved capital expenditures of several million dollars to upgrade the computer software and hardware infrastructure to allow for better exchange of transmission data and the coordination of transmission service approvals with the adjoining regional transmission organizations. Second, the membership approved the extension of Schedule F service from the previous limit of six months of firm service to one year of firm service. This will allow the members to make regional wholesale energy transactions on a competitive basis with the surrounding regions. Approval for the extension of Schedule F service was granted by FERC on May 16, 2005. Third, and most importantly, MAPP executed a Seams Operating Agreement (SOA) with the Midwest ISO, which was subsequently approved by FERC on March 16, 2005. The SOA was described in last year's report. The basic purpose is to coordinate the granting of transmission service between adjoining regions so that neither region oversells transmission service that would overload transmission facilities in the adjoining region. The core process to accomplish this is titled the Congestion Management Process (CMP). The need for the CMP has become increasingly important due to the major change in how entities like the Midwest ISO and PJM are running their energy markets. Both of these entities use a bid-based Day-Ahead and Real-Time energy market, contrasted to a bilateral market used by MAPP, SPP and TVA.

The CMP was first developed by the Midwest ISO and PJM as the basis for the seams agreement between those two regions. Since then, FERC has required that seams agreements be executed between all of the RTOs that FERC has approved. Properly managing transmission congestion, including exchanging more real-time data and coordination of transmission service approvals is seen as absolutely necessary to ensure reliable operation of the transmission system and equitable treatment of transmission customers. At this time, seams agreements have been executed between the Midwest ISO and PJM, the Midwest ISO and MAPP, the Midwest ISO and SPP, and a three-party agreement between the Midwest ISO, PJM and TVA. Since the Midwest ISO provides services to MAPP under a Transmission Services Agreement, under which Midwest ISO staff has access to all of the MAPP data, the MAPP/Midwest ISO SOA covers seams issues

between MAPP and SPP. The seams agreement and CMP in each of the agreements are similar, but not identical due to the specific issues in each region. To make sure these differences do not cause reliability or transmission access problems, and to attempt to move in the direction of establishing a more uniform process, a Congestion Management Process Council has been established, with a representative from each of the five regions: MAPP, Midwest ISO, PJM, TVA and SPP. The CMP continues to be an evolving process due to the changes in how generation is dispatched in the new energy markets, and the resulting transmission congestion that ensues. This is requiring fundamental review and changes to many of the technical procedures approved by NERC. This will be a lengthy effort to receive approval by the NERC committees.

MAPP and the Midwest ISO have, as required by FERC, filed status reports at FERC every 45 days on the efforts to resolve the remaining issues in the seams agreement and the progress in fully implementing all of the requirements. A seams implementation-working group with representatives from MAPP and the Midwest ISO has been meeting regularly to this end. Implementation of the seams agreement processes is scheduled for October 1, 2005. Beginning on that date, MAPP and the Midwest ISO will implement a reciprocal flowgate allocation process, which basically divides the transmission capacity on constrained transmission paths, known as flowgates, between the two. Each party is then restricted from selling additional transmission service that exceeds their transmission capacity allocation, without first coordinating any additional service approval with the other entity. Further, during real-time operations, each entity is required to manage their flows so as to not exceed their allocation. Because all of the MAPP software upgrades will not be completed until approximately December 1st, interim procedures are being put in place to manage the reciprocal flowgate allocation process.

The MAPP transmission owners have begun meeting to evaluate options for the future provision of services. Currently, the Midwest ISO provides services to the remaining MAPP members under a Transmission Services Agreement, which terminates in February 2008. Included in the Agreement are two broad categories of services: transmission services, which includes reviewing and approving transmission service requests, and providing staff support to the various MAPP committees; and NERC Reliability Coordination services, which involves real-time monitoring and analysis of the transmission system and provides the Midwest ISO authority to issue operating directives to MAPP Control Area Operators to take action to maintain reliable operation of the system. The MAPP transmission owners will evaluate whether the Midwest ISO should be the entity to continue to provide those services, or whether a new entity should be engaged. Some of the concerns are that the MISO staff is oftentimes in a conflicted position when it comes to resolving contentious issues between MAPP and the Midwest ISO with respect to equitable treatment of customers under the two transmission tariffs. In addition, the MAPP transmission owners believe the costs for the transmission services and reliability coordination services should be unbundled. An option that will be explored is whether the proposal that MidAmerican Energy is developing to contract for transmission services with a Transmission Service Coordinator (TSC) for their needs, can be expanded to include services to the rest of MAPP. MidAmerican has committed to FERC to contract with a TSC to establish an entity independent from MidAmerican that will administer transmission service under the MidAmerican transmission tariff and perform various planning studies. MidAmerican intends to seek bids from qualified entities to provide these services and expects to have the TSC in place by late 2006.

The MAPP transmission owners are in the process of establishing a cost sharing agreement to develop and evaluate whether a TSC is the preferred option for future transmission services, and what services should be provided. In addition, the transmission owners will explore whether a different or new regional transmission tariff should be developed. The initial plans are to develop this proposal in parallel with MidAmerican's effort. MAPP must notify the Midwest ISO one year prior to the termination of the Transmission Services Agreement and the Seams Operating Agreement if MAPP does not intend to continue with the Agreements.

The various MAPP RTC subcommittees, which are populated by the MAPP members, continue to function as before. Of particular importance is that the MAPP regional transmission planning process, and the study and approval process for generator interconnections and long-term transmission service requests remain functioning. The MAPP 10-year regional transmission plan was updated on December 6, 2004. In addition, the Nebraska Subregional plan (one of several subregions within MAPP which roll-up to the

regional plan) was updated in September 2005. The Nebraska Subregional plan details all of the transmission expansion plans for Nebraska utilities to serve load and interconnect new generation, as well as certain Missouri utilities that are interconnected with Nebraska.

As stated in previous years' reports, the Nebraska utilities continue to expand the transmission system as needed to serve load growth and deliver new generation resources to load. However, transmission expansion to serve the needs of the regional wholesale energy markets has not been successfully addressed because the difficult issue of who should pay for the new transmission expansion has not been resolved.

3.3 MAPP GRSP

The geographic footprint of the MAPP GRSP has remained unchanged. Even though a number of original MAPP members have joined the Midwest ISO, they remain members of the MAPP GRSP. The GRSP provides an essential service to the members by sharing generation reserves during generator outages. By sharing this obligation, the members are able to maintain reliability of service to their customers during generator outages in a far less costly manner. Whenever a member sustains a generator outage, all other members of the pool are obligated to provide a portion of the lost generation capacity. It is recognized by the members that the larger the pool, the less reserves each member must carry individually. The cost for supplying the reserves are at market-based rates after 45 minutes, which allows the member to make other arrangements to re-establish their reserves if they determine it is less costly than relying on the market pricing.

The fact that the geographic boundary of the MAPP Schedule F transmission tariff and the GRSP do not coincide has complicated matters, but to date resolutions have been found. Whether the resource adequacy proposal being developed by the Midwest ISO, which would apply to the MAPP members that have joined the Midwest ISO, will conflict with the GRSP is yet to be seen. If it does, this would be potentially another significant issue for the MAPP members to address.

4.0 Status of the Midwest ISO

The Midwest ISO started its new energy markets on April 1, 2005. It utilizes both a Day-Ahead and Real-Time energy market under which generators bid into the market to serve the forecasted load over the entire Midwest ISO geographic footprint. The Midwest ISO runs a least-cost security constrained economic dispatch to determine which generators, and at what level, will run to serve the market without overloading any transmission. However, the analysis will normally result in some transmission element right near its loading limit. Market clearing prices are established at each node, otherwise referred to as Locational Marginal Pricing (LMP), through this analysis. Congestion costs and marginal losses are also assigned to the nodal pricing. The analysis is re-run every five minutes to adjust generation output due to load variations and transmission loading limits, and the prices are integrated hourly. Financial Transmission Rights (FTRs) are allocated to provide a hedge, or offset, against any congestion costs.

This new LMP process is a dramatic departure from the previous traditional process whereby each utility that operates a NERC Control Area would dispatch generation to match the load within its Control Area after including net schedule interchanges with adjoining Control Areas. Purchases and sales of wholesale energy are conducted through bilateral transactions. The traditional process is still used within MAPP.

In theory the LMP process should produce lower overall costs, but since the Midwest ISO energy markets started, wholesale energy prices have risen substantially. In addition, price volatility has been high, with prices changing dramatically over short time intervals. Some of the reasons are still unclear, but the result has been that the Midwest ISO market has curtailed substantial imports from the MAPP region, which traditionally provided low-cost generation exports. Also, the Midwest ISO region has required an abnormally high level of high cost generation (primarily combustion turbine units) within the Midwest ISO to run to serve the load. In addition, the Midwest ISO has implemented the NERC Transmission Loading Relief (TLR) procedure much more often than was experienced prior to the market start up. TLR is a procedure used to unload the transmission system when a given transmission line or piece of equipment exceeds its operational limit.

The MAPP/Midwest ISO Seams Implementation Working Group has spent an inordinate amount of time attempting to resolve what the MAPP members believe is inequitable treatment under the TLR procedure. MAPP members have seen that their transactions have been curtailed disproportionately to the Midwest ISO market flows whenever a TLR is called. MAPP members discovered through a detailed review of the technical procedure that the Midwest ISO market flows have been assigned a higher priority than the MAPP transactions, such that MAPP transactions are first curtailed entirely before any Midwest ISO flows are curtailed. This issue has been brought before NERC committees to resolve. The issue has primarily affected non-firm energy transactions, which does not affect service to native load.

At this time it cannot be readily shown that the new Midwest ISO energy markets have resulted in lower wholesale energy prices to customers. On the contrary, it appears that wholesale energy prices have increased. As yet, no formal studies have been conducted that we are aware of that report on the changes to wholesale energy prices due to the implementation of Midwest ISO markets.

5.0 FERC Rulemakings and the Energy Policy Act of 2005

On August 8, 2005 President Bush signed into law the Energy Policy Act of 2005. FERC Chairman Joe Kelliher noted that the energy bill's provisions involve the most significant changes in FERC's responsibilities since the Federal Power Act of 1935.

FERC had previously announced its intent to move in a new direction to remedy what it said is remaining discriminatory practices in granting open access transmission service. On July 19, 2005 FERC issued an Order terminating its Standard Market Design proceeding which it had unveiled in a proposed rulemaking in July 2002. The Standard Market Design would have made it mandatory that FERC jurisdictional utilities join an RTO and would have likely established the LMP process as the required market design. In terminating this proceeding FERC said that voluntary formation of RTOs and other changes in the industry had overtaken its proposal. Instead, FERC stated it would focus on reform of its Open Access Transmission Tariff (OATT), which it first issued under Order 888 in 1996.

With the passage of the Energy Policy Act of 2005, FERC has moved quickly to initiate new Rulemakings pursuant to its new authority granted in the Act. FERC noted that it will be required to establish 15 new rulemakings over the next several years to fully implement its authorities.

FERC has already taken steps to initiate two major rulemakings that will directly affect electric utilities, including public power utilities, which have become subject to FERC jurisdiction in many areas with the enactment of the Energy Policy Act.

On September 1st, FERC announced a Notice of Proposed Rulemaking entitled "Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards". This rulemaking will apply to all users, owners and operators of the bulk-power system, including public power utilities. The rulemaking will establish mandatory compliance with all reliability standards. The lack of mandatory compliance has been cited as one of the contributing factors to the August 2003 blackout.

NPPD, OPPD, LES, MEAN and Hastings are already members of the MRO that is the NERC Regional Reliability Council. The MRO is already in the process of adopting the NERC reliability standards and establishing a compliance program to monitor and enforce compliance. From a technical implementation standpoint, the new FERC rulemaking is not expected to have a significant impact on Nebraska utilities. It is expected that NERC will be certified by FERC as the Electric Reliability Organization and that the MRO would be certified as a Regional Entity for delegation under the NERC umbrella. What will change is that FERC will be able to assess fines or penalties for non-compliance with the reliability standards it approves and has the authority to monitor or audit any entity involved in the operation of the transmission system. NERC has already undertaken a complete review of its reliability standards and announced that the new Version 0 standards became effective on April 1, 2005. In addition, NERC is continuing to issue new standards concerning areas not covered, as well as further revisions to existing standards. It is expected that all of the NERC standards will have to undergo a FERC approval process.

On September 16th, FERC issued its second major initiative in a Notice of Inquiry entitled, "Preventing Undue Discrimination and Preference in Transmission Services".
FERC is asking for comments on how to revise certain provisions of its pro forma OATT, and most importantly for public power utilities, FERC is seeking comments on how to implement its new authority under Section 1231 of the Energy Policy Act. This section provides FERC the authority to require unregulated transmitting utilities (i.e. public power utilities) to provide transmission services at rates that are comparable to those that it charges itself, and on terms and conditions that are comparable to those the public power utility applies to itself and that are not unduly discriminatory or preferential. FERC may remand rates for review and revision by the public power utility if FERC deems it necessary to meet the comparability standard. Comments on the Notice of Inquiry are due by November 22, 2005. FERC is expected to take the next step in the Rulemaking process by issuing a Notice of Proposed Rulemaking sometime after it considers all of the comments received.

Both of these FERC initiatives will not likely become effective until sometime later in 2006. The final impacts to public power utilities cannot be assessed until after FERC issues Final Rulemakings. At this time, it appears that the emphasis on joining a RTO has been relegated to the back burner, but public power will likely face additional FERC regulation after the new Rulemakings are final.

6.0 Conclusions

While the electric industry continues to change under FERC direction and enactment of federal legislation, the end point is no clearer at this time. Therefore, the conclusion remains unchanged from last year's report. There is no economically viable FERC-approved RTO for Nebraska utilities to participate in. However, since FERC is no longer pursing mandatory participation in RTOs, there is no reason to believe that other alternative regional transmission entities, while not meeting FERC's definition of a RTO, cannot provide a means for adequate regional participation. To that end the Nebraska utilities continue their participation in MAPP with a renewed emphasis on coordination with the adjoining regions, and at the same time will explore options for a Transmission Service Coordinator to fill the services role provided by the Midwest ISO.

Transmission adequacy in Nebraska continues to be maintained though system expansions to serve load growth and deliver the generation output of new plants to the customers in Nebraska. Adequate transmission to satisfy the wholesale energy markets continues to be inadequate due to lack of a methodology to assess needed transmission investment to the regional users of the system. The seams agreement and CMP process serves only as a means of allocating a scarce resource, transmission capacity, to the entities that have rights to the capacity.