

## **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 & Team Members

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”.

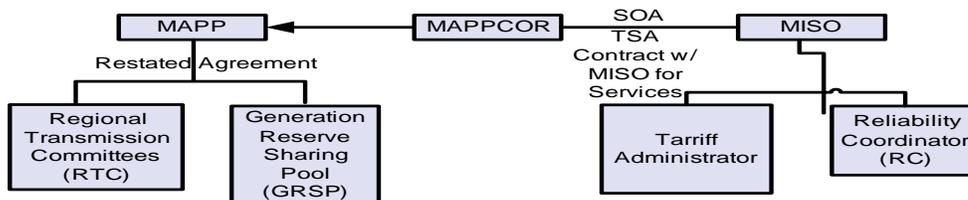
### Team Members

Paul Malone	Nebraska Public Power District
Dan Dahlgren	Omaha Public Power District
John Krajewski	NMPP Energy
Bruce Merrill	Lincoln Electric System
Lloyd Linke	Western Area Power Administration

## 2.0 Status of Regional Transmission Organizations (RTOs)

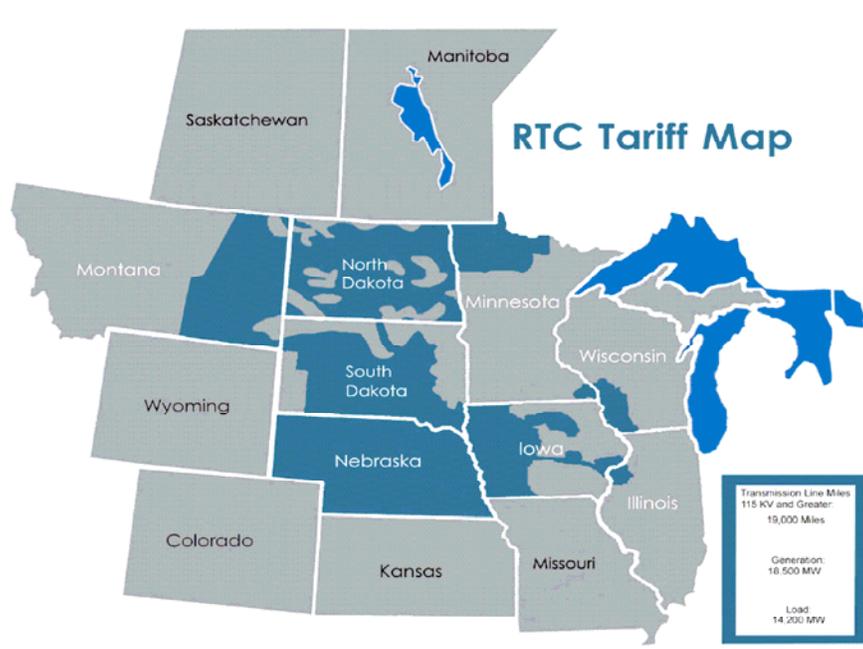
During the past year Nebraska utilities, as members of the Mid-Continent Area Power Pool (MAPP), have been working on a plan for the continuation of regional transmission services once service contracts with the Midwest ISO (MISO) terminate on February 1, 2008. As shown in the figure below, the MAPP organization consists of two main bodies, the Regional Transmission Committee (RTC), and the Generation Reserve Sharing Pool (GRSP). The RTC governs a number of Subcommittees which oversee the development of a regional transmission plan, the review and approval of generator interconnection and long term transmission service studies, approval of operating procedures, and the procedures for granting transmission service under the regional transmission tariff, known as Schedule F. The GRSP oversees the procedures concerning sharing of generation reserves associated with generator outages.

### **Current MAPP Organization**

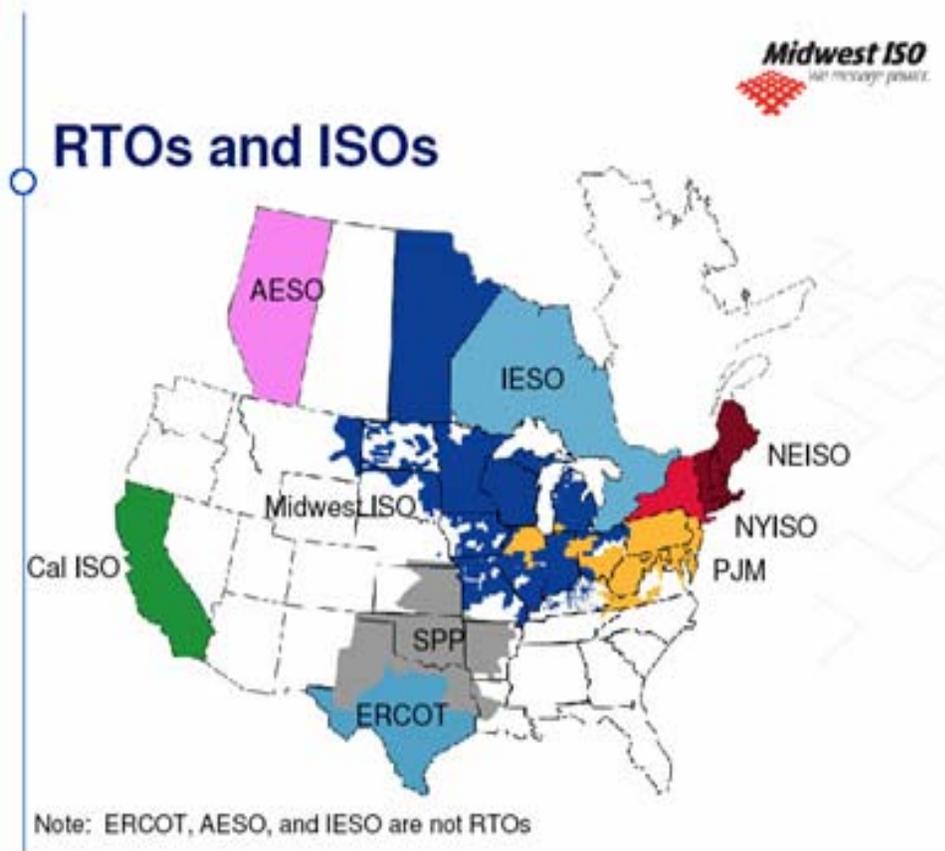


Since 2002, MISO has been providing transmission services to the MAPP members under a Transmission Services Agreement (TSA) with MAPP. MISO has the staff that provides tariff administration services and NERC Reliability Coordination Service. The second contract between MAPP and MISO is a Seams Operating Agreement (SOA) which has been in effect since 2005. That agreement provides for the coordination of transmission service and management of transmission congestion between the MAPP and MISO regions. Both the TSA and SOA agreements terminate February 1, 2008.

As described in last year’s report the MAPP members have been working on the development of a Transmission Service Coordinator (TSC) as a replacement for the services provided by MISO. It was anticipated that the MAPP region, as shown in the diagram below depicting the geographic area of the transmission service under the RTC tariff, would continue to operate as a bilateral wholesale energy market, wherein wholesale customers arrange for the purchase and sale of energy between two parties, and request transmission service to accommodate the delivery.



In stakeholder meetings of the MAPP members held to discuss their concerns and experience in making wholesale market transactions, it was evident that the MAPP members are experiencing increasing difficulty in conducting wholesale market transactions. The main causes are lack of available transmission capacity needed to grant transmission service, and transmission congestion which results in curtailments of wholesale market transactions. The MAPP region is bordered by MISO, PJM, and the Southwest Power Pool (SPP), as shown in the following diagram, which operate wholesale energy markets that dispatch generation based on bids from the generators to serve the forecasted load. This method of dispatching generation referred to a Locational Marginal Pricing (LMP) results in increasing use of the transmission system and imposes additional parallel flows on the interconnected MAPP members’ transmission system.



The procedures provided for in the SOA were intended to address the congestion and fairly allocate transmission capacity between the regions. The SOA between MAPP and MISO actually extends the same provisions to the PJM and SPP regions through reciprocal provisions. However, the experience of the MAPP members in making wholesale market transactions since the SOA has been in effect has not been satisfactory. MAPP members have not been able to arrange transmission service as readily as they desire to accommodate the delivery of the wholesale sales and purchases they wish to consummate, and too often when they have been able to reserve transmission service, the transaction is curtailed due to transmission congestion. There have been a number of contentious issues related to the allocation of transmission capacity and congestion management procedures embodied in the SOA. These issues have been brought to the attention of both FERC and NERC, but unfortunately the position of the MAPP members with respect to the procedures for managing congestion and allocating transmission capacity has not prevailed.

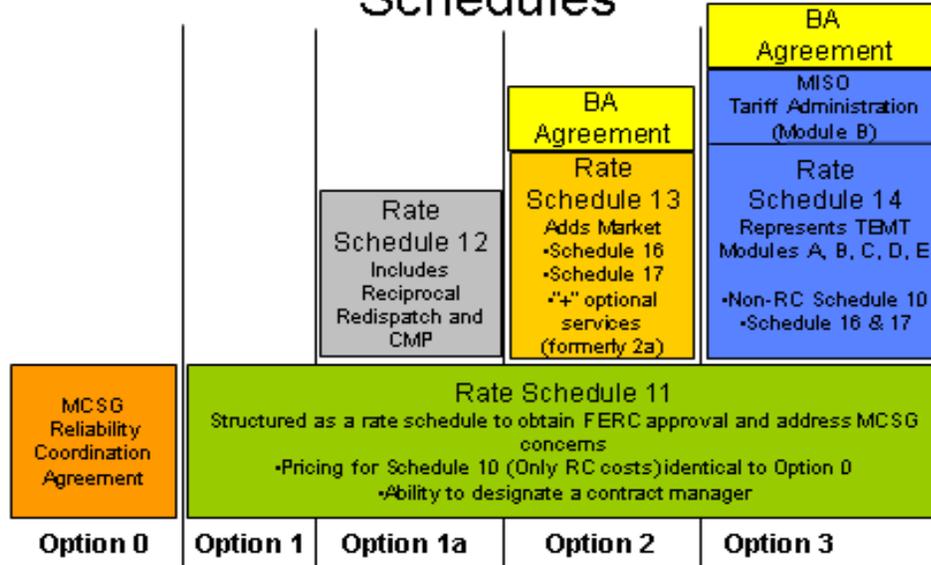
### 3.0 MISO Market Participation Options

MISO has recognized that the transmission capacity allocation and congestion management procedures in the SOA, which worked somewhat adequately during the initial operation of the MISO markets, are no longer satisfactory. As new generation and transmission facilities are added the already complex technical procedures to allocate the transmission capacity and manage congestion simply no longer are satisfactory to either party.

As an alternative, in June 2007 MISO proposed entirely new options to participate in the MISO energy market, as shown in the diagram below. The options are being proposed as generic agreements that will become rates schedules under the MISO tariff, available to not only MAPP members but other utilities that border the MISO region.

Another driver for offering these options is the contention by MISO and other RTOs before FERC that utilities that border the RTOs are “free-riders”. They contend that border utilities take advantage of the wholesale energy markets created by the RTOs, but do not pay for the capital infrastructure that was required to establish the markets. The MAPP members and other utilities bordering the RTOs have vigorously argued that they indeed do pay for all of the appropriate costs when they make wholesale energy transactions with the market.

## Coordination Agreement Options to Midwest ISO Proposed Rate Schedules



Option 0 provides for a Reliability Coordination Agreement with MCSG (Mid-Continent Systems Group). The MCSG is a moniker the MAPP transmission owners selected when work began on the TSC proposal. Option 0 assumes that the MAPP region continues to operate as a bilateral wholesale market and MISO would provide a contract for Reliability Coordination Services. While the Reliability Coordination Service is a mandatory NERC requirement for the MAPP members, it does not address all of the seams issues which remain.

Option 1 provides for Reliability Coordination Service, but does not contain all of the provisions that are being proposed in the MCSG agreement. Under option 1, the agreement is between MISO and the individual MAPP member, whereas in option 0 a single agreement between MISO and MCSG covered all of the MAPP members. Option 1 is a mandatory service that must be taken if options 1a, 2, or 3 are chosen.

Option 1a provides that generation redispatch will be used to resolve transmission congestion in conjunction with the NERC curtailment standard, known as Transmission Loading Relief (TLR). Without going into a lengthy explanation of the TLR procedure, let it suffice to state that the TLR procedure is much less efficient, and results in significantly more curtailments than a generation redispatch procedure. This option would be a significant improvement over the current situation when transmission congestion occurs, but it does not address the problem with securing transmission service in the first place. Under this option the MAPP region would retain its bilateral wholesale market structure.

Options 2 and 3 provide an agreement between MISO and each MAPP member whereby the MAPP member is a participant in the MISO energy market. This is a fundamental change in the way MAPP members conduct wholesale market transactions today. In both options the MAPP member generation and load participate in the MISO Day-Ahead and Real-Time Energy Market, and the soon to be implemented Ancillary Services Market. MAPP members would bid their generation into the MISO market, and MISO would establish the wholesale market clearing price to be paid to the generators. All of the costs paid to the generators are allocated to the load based on the LMP price, which is a combination of the generator cost, transmission congestion cost, and the cost of marginal losses. The MISO market allocates Financial Transmission Rights (FTRs) as a hedge against congestion. The significant difference between options 2 and 3 is that under option 2, the MAPP members would retain their own transmission tariff, whereas in option 3 MAPP members would take all transmission service under the MISO tariff, and further would be subject to allocation of transmission expansion costs that are part of the MISO transmission plan. Under option 2 MAPP would retain its long-standing regional transmission planning process. In either option, participation in the MISO market is financially binding, and MISO would establish the output levels the MAPP generators would run.

The MAPP members have held a number of meetings with MISO to get a more detailed understanding of the options. While there are significant details yet to be worked out, the initial indication is that most of the MAPP members are interested in participating under option 2. In particular, MidAmerican Energy has stated that they intend to pursue participation under option 2.

This raises the concern that the MAPP region is losing its “critical mass”. Since 2002 over 60% of the MAPP member load has left MAPP and joined MISO. Further reductions in the MAPP regional footprint will leave a region that is so small it is a concern whether it is viable as region. In addition, as MAPP members leave and join MISO, the seam between the regions moves closer to the remaining MAPP members, which will likely result in increased difficulties in conducting wholesale market transactions.

There are potential benefits to participation in option 2. Participation in option 2 will eliminate the TLR curtailments that exist today for transactions into the MISO market and it will not be necessary to make a transmission service request to move energy into the market.

Since the MAPP members have historically been energy exporters, participation in option 2 will provide an opportunity for more MWh of sales and better pricing. In addition, the Ancillary Services Market has the potential to provide cost savings from reduction in regulating and spinning reserves. Finally, the MISO market provides a better means for handling the integration of large scale wind generation projects.

At this point, the MAPP members are evaluating the impacts of participation in option 2. To assess the quantitative cost impacts, a consultant has been retained to perform economic modeling of the LMP pricing and FTR issues. There are many qualitative issues that are also being addressed. Participation in option 2 does require a certain degree of relinquishing operational authority over the generation and transmission assets, as well as financial authority over the wholesale market transactions. However, MAPP members will not be required to execute the MISO Transmission Owners Agreement, and would be subject to a limited exit fee should they decide to leave MISO in the future.

MISO has established a very aggressive timeline. MISO intends to make a FERC filing of the generic options in late October. By December, MISO expects MAPP members to have provided all of generation, load, and transmission data needed for them to perform the various modeling efforts for the entire MISO region. MISO indicates it would be ready to implement these options by June 2008, concurrent with the planned start of the Ancillary Services Market. This timeline appears to be overly optimistic as there are numerous regulatory proceedings at FERC to be approved, as well as the need to install new IT infrastructure at the MAPP members' control centers. It would not be at all surprising to see this schedule slip to later in 2008.

#### **4.0 Conclusion**

Given the new market participation proposals put forth by MISO and the early indication that most MAPP members are considering participation under option 2, the viability of MAPP as a regional transmission organization is less certain than in previous years. Assuming the economic analysis supports the benefits of participating in the MISO market, and that all of the qualitative and contractual issues are addressed satisfactorily, it appears likely that only certain functions of the MAPP RTC will remain, such as the regional transmission planning process and review and approval of generator interconnection studies. However, the GRSP and the bilateral wholesale energy market between MAPP and the MISO regions would be eliminated.

Other alternatives to participation under the MISO options are to consider participation with the Southwest Power Pool (SPP) to the south, or to simply remain as a "stand-alone" MAPP member. While SPP is interested in acquiring new members, the transmission interconnections between SPP and MAPP have much less capacity than the interconnections between the traditional MAPP region and MISO. Remaining a "stand-alone" MAPP member is an option, but it may be one that presents severe limitations for participation in wholesale market transactions.

Adequate transmission continues to be proposed and built by Nebraska utilities to deliver generation to the load, and maintain the reliability of the Nebraska transmission system to support increased load growth, as evidenced by the construction of transmission facilities associated with OPPD's Nebraska City Unit 2, and proposed transmission facilities by LES and NPPD. However, parallel flows imparted on the Nebraska transmission system from the wholesale energy markets surrounding Nebraska and the MAPP region that operate LMP bid-based markets, make it increasingly difficult to effectively participate in wholesale energy market transactions. Nebraska's transmission system is part of the interconnected transmission network and power flows cannot be simply limited by a single utility, which is why it is essential that Nebraska utilities continue to participate in a regional transmission organization.