NORTH AMERICAN ELECTRIC RELIABILITY COUNCIL

Princeton Forrestal Village, 116-390 Village Boulevard, Princeton, New Jersey 08540-5731

July 15, 2002

Hon. Margalie R. Salas
Office of the Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Re: Alliance Companies
Docket Nos. EL02-65-000 and RT01-88-016

Dear Secretary Salas:

This letter constitutes the joint response of the North American Electric Reliability Council ("NERC"), the East Central Area Reliability Coordination Agreement ("ECAR") and the Mid-America Interconnected Network, Inc. ("MAIN") to the data request from Commission staff in these dockets dated July 3, 2002 (the "July 3 request"). In general, the Commission is inquiring about the implications for the reliability of the bulk electric system of the various elections made by former Alliance Companies to join either the Midwest ISO or PJM.

In anticipation of the July 3 request, Derek Cowbourne, Chairman of NERC's Operating Committee, sent a letter (Attachment 1) to the Midwest ISO and PJM requesting each to submit (1) a list of potential issues and concerns that they believe need to be addressed for the reliable operation of their transmission organizations as well as those systems adjacent to their boundaries, and (2) an updated Reliability Plan that includes the resolution of these issues and concerns. On July 5, the Midwest ISO and PJM made a joint submittal responding to Item (1) (Attachment 2). Neither the Midwest ISO nor PJM has yet submitted an updated Reliability Plan in response to Item (2). NERC does not expect them to do so until they develop solutions to the issues and concerns that they have identified. In addition, NERC convened a special joint meeting of its Operating Reliability Subcommittee and Reliability Authority Working Group on July 11 to consider the relevant issues. At that meeting, representatives of the Midwest ISO and PJM, as well as other interested parties, discussed the Midwest ISO-PJM submission as well as other issues relevant to the Commission's inquiry. This response is informed by the discussions at that meeting.

MAIN Executive Director Richard Bulley has informed NERC that he was authorized by MAIN's Board of Directors to respond on behalf of MAIN. He supports this response but cautions that it does not necessarily reflect the views of any or all MAIN members.

As noted above, neither the Midwest ISO nor PJM has yet submitted a revised Reliability Plan. Accordingly, this response must be considered preliminary and subject to modification, once the details of the revised Reliability Plans are known and can be analyzed. NERC's general conclusion, described more fully below, is that NERC has not identified a reliability issue that would disqualify the proposed configuration of the PJM and MISO regional transmission organizations, provided that satisfactory solutions are forthcoming to the significant reliability issues identified by MISO and PJM.

Questions to NERC, ECAR and MAIN in July 3 request:

1. What is the NERC process when a utility wants to change reliability councils? How does NERC analyze such a request and what are the types of issues that could affect system reliability?

NERC Response:

Those entities performing the primary reliability functions of generation control (Control Areas) and system security coordination must be members of the Regional Reliability Councils in which they carry out their business. When one of those entities changes membership from one Regional Council to another, the Regional Councils inform NERC of the membership changes. NERC needs this information for reasons such as inadvertent accounting and control surveys (which are reported on a Regional basis), Regional boundaries for the NERC map, and NERC committee rosters. However, NERC does not approve or analyze changes in Regional Council utility membership. NERC expects every Control Area utility to follow NERC's Operating Policies, regardless of which Regional Council the Control Area belongs to.

In many cases, the Regional Councils have their own operating and planning policies that deal with issues within the boundaries of those Regions. For example, most Regional Councils have specific spinning reserve policies, reserve sharing provisions, planning criteria, ATC calculation procedures, special protection systems ("relay" systems), and generator requirements (to name a few) that are agreed to by the members of those Regions. As membership changes, the Regional Councils review their operating and planning policies and revise them if necessary. Regional Council operating and planning policies and standards may not preempt NERC's standards.

Of substantial concern to NERC from a system reliability perspective is the relationship between the Control Area utilities and their Reliability Authorities. NERC created Security Coordinators (now referred to as Reliability Authorities) in 1997 to monitor the interconnected bulk electric system and to give specific attention to the reliability impacts of electricity transactions on the transmission systems within each Interconnection. Because of the growing number of interchange transactions that were occurring from the opening up of access to the transmission system, Control Areas themselves were no longer able to assure effective action to manage flows on the grid. NERC requires that every Control Area be within the purview of a Reliability Authority. When a Control Area moves from one Reliability Authority to another, this move must be reflected in the Reliability Plans of the affected Reliability Authorities. The NERC Operating Committee and its Operating Reliability Subcommittee review these plans to make sure that, among other things, every Control Area is within the purview of a Reliability Authority, and that the Reliability Plans satisfactorily address interoperability issues among the

Reliability Authorities. Because the RTOs are becoming responsible for the Reliability Authority function, the RTOs are responsible for submitting these Reliability Plans for NERC's review.

MAIN Additional Response:

Any entity meeting the requirements (bylaws section 3.1) may apply for MAIN membership. In a like manner, members may withdraw upon 18 months' notice. Withdrawal does not involve an analysis of impact on reliability by MAIN; however, if a member withdraws and does not become subject to the reliability requirements of another Regional Reliability Council, said member shall continue to be subject to MAIN reliability requirements (bylaws sections 3.9 and 3.11).

ECAR Additional Response:

With respect to a member withdrawing from ECAR, the ECAR Agreement (Article 7.01) reads as follows:

"This Agreement shall continue for five years from its date and thereafter until terminated by unanimous agreement of the parties, but any party to this Agreement may cease to be such by giving the others at least 30 days written notice of its intention. Any such party shall nevertheless continue to be liable for its share of expenses incurred prior to the end of the calendar year in which such notice is given."

2. What are NERC's views on any reliability and coordination issues raised by former Alliance companies' voluntary election to join RTOs under Order No. 2000?

NERC Response:

At its special July 11 Operating Reliability Subcommittee and Reliability Authority Working Group (ORS-RAWG) meeting, these two groups discussed the issues that MISO and PJM submitted to NERC on July 5. MISO and PJM representatives were present to answer questions and provide further explanation of the list of issues they submitted. Representatives from some of the former Alliance Companies as well as other interested persons also participated in the discussion.

The ORS-RAWG did not discern any reliability issues that would disqualify the proposed MISO-PJM configuration, provided that the significant reliability issues identified are accurately defined and adequately resolved. However, that said, some members of the ORS-RAWG are concerned about the success of the operating coordination and modeling complexities that the proposed MISO-PJM organization will require. The interconnections between MISO and PJM in the proposed configuration are quite complex. NERC does not know at this time how much effort will actually be required by MISO and PJM to successfully manage their "seams," because those details are not yet available. NERC expects those details to be in the MISO and PJM Reliability Plans that they file with NERC in the weeks ahead.

We now list some specific conclusions from the July 11 ORS-RAWG meeting:

1. Regardless of the elections made by the former Alliance Companies, there will continue to be seams issues that must be dealt with in a satisfactory manner. Security assessments, reliability studies of the impact of contingencies and transactions must be coordinated between MISO and PJM, as well as with other systems in the Eastern Interconnection, regardless of what the RTO alignment might be.

2. Both MISO and PJM stated that they are committed to operating their systems reliably. Both will have the ability to perform security assessments over a wide area. Both expect to have agreements to allow either to take emergency action for select, pre-coordinated events in either organization. Both expect to coordinate their generation and transmission maintenance and interconnection planning. Both have indicated a willingness to respect third-party flowgates or constraints.

3. The reliability issues arising from managing multiple seams should be easier to resolve once PJM and MISO achieve their common market. At this point, NERC understands this is projected to occur sometime in 2005. Therefore, at this time, NERC believes the principal focus from a reliability perspective must be on the transition period between now and the implementation of their common market. PJM and MISO are working on their Reliability Plans that will include the details that NERC will need to determine the feasibility of managing the seams during the transition period.

The following conclusions are especially important during this transition period:

4. During the transition period, MISO and PJM may be using different congestion management procedures. For instance, part of PJM may begin using a market-based procedure, such as locational marginal pricing, while part of MISO may be using the NERC Transmission Loading Relief Procedure, or vice versa. The implementation timetables of PJM and MISO may help resolve this problem. Both PJM and MISO are staging the implementation of their markets. PJM expects to bring its nearest proposed members into its market first. MISO also expects to bring different groupings of its members into its market at different times. (See Attachment 3, "Approximate Milestones for MISO-PJM Implementation.") It appears that adjacent portions of MISO and PJM may be brought into the locational-marginal-priced, security-constrained-dispatch approach to congestion management at approximately the same times.

5. Regardless of the implementation timetable, the Reliability Plans of MISO and PJM will need to address reliability issues that may arise on third-party systems that are likely to be using different congestion management procedures. PJM stated that its current security-constrained dispatch model can, but presently does not, take into account external constraints. Given the overlapping nature of the electrical system that will result from the proposed MISO-PJM configuration, the locational marginal pricing models that each uses must take account of constraints on the other's system. In like manner, the locational marginal pricing models that each uses must take account of constraints in the Eastern Interconnection outside the PJM-MISO footprint.

6. The electric industry has the technical capability to provide the solutions to allow the proposed MISO-PJM configuration to work reliably. Some of these possible solutions

were discussed at the July 11 meeting, but sufficient detail is not yet available to allow NERC to determine if the solutions will be adequate, or how complex an undertaking the necessary coordination will be. NERC expects the additional details to be in the revised Reliability Plans that MISO and PJM will submit. However, NERC will not judge the cost, efficiency, or level of resources needed to successfully achieve the solutions contained in these plans.

7. The more complex the undertaking turns out to be, the less assurance can be provided of its effectiveness. It likely would be simpler to manage the transition if the footprints of the two organizations were separate instead of interlaced and overlapping electrically and geographically.

8. Many of the identified reliability solutions will require negotiation of agreements between MISO and PJM that address both technical and commercial issues. Those commercial issues include specification of who has what rights and what obligations with respect to the physical system, what the costs of the solutions are, how those costs will be allocated, and who will pay them. In short, effective implementation of the reliability solutions will turn on satisfactory resolution of a number of commercial issues. This is not to say that the reliability standards are subject to negotiation, but rather that the commercial consequences from compliance with the reliability standards must be dealt with if the chosen reliability solutions are to be effective.

9. Many of the identified reliability solutions will also require agreements with third parties elsewhere in the Eastern Interconnection whose electric systems will be in some way affected by the operations of MISO or PJM. Those agreements will also involve technical and commercial issues, including ATC coordination, that must be resolved if the chosen reliability solutions are to be effective. For example, PJM and MISO state that their allocation of transmission flowgates will recognize external system constraints, and that they will honor contract tie limits with those other organizations.

10. Once MISO and PJM have achieved a single market, the elections by the former Alliance Companies should no longer matter. Having market-to-market interfaces should make it easier to assign costs to various necessary reliability actions. However, so long as there are differences presented either by market and non-market interfaces or by differences between two markets, MISO and PJM, as well as the other systems in the Eastern Interconnection, will need to attend carefully to the management of seams.

3. Based on the data NERC received in response to the June 28 letter what are the views of NERC as to how the parties' proposal to join PJM will be consistent with the regional configuration factors identified in Order No. 2000 at 31,082-085 (e.g., (a) making accurate and reliable ATC determinations; (b) resolving loop flow issues; (c) managing congestion; (d) planning and coordinating expansion; and (e) encompassing one contiguous geographic area).

NERC Response

a. **ATC calculation**. Based on the information that MISO and PJM provided, the ORS-RAWG did not arrive at any specific conclusions on how the proposed configuration of MISO-PJM would affect ATC calculations. It would seem that reducing the number of transmission providers from the current configuration to the two systems – MISO and PJM – increases the likelihood that ATC determination will be handled more effectively. However, as explained above, MISO and PJM will need to coordinate their ATC calculations with third parties elsewhere in the Eastern Interconnection whose electric systems will be in some way affected by the operations of MISO or PJM. In the past, NERC has required that transmission providers follow their Regional Council's ATC standards, and it has been up to the Regions to enforce compliance with those standards. After MISO (which spans four Regional Reliability Councils) became operational, NERC directed that those four Regions work with MISO to agree upon a single methodology for MISO to follow.

b. **Resolving loop flow issues.** As explained above, implementing the common MISO-PJM market should resolve loop flow issues within the MISO-PJM footprint. This is because all loop flows will be internalized under a single market. However, MISO and PJM will need to coordinate loop flow issues with third parties that are outside the MISO-PJM market. This will require both reliability and commercial agreements with those parties. Prior to the implementation of a common market, MISO and PJM will need to develop effective measures for handling loop flows between themselves and with other systems in the Eastern Interconnection.

c. **Managing congestion.** The same general statements that apply to resolving loop flow issues apply to managing congestion. Using a market-based congestion-management approach in both the MISO and PJM footprints should make it easier to assess and assign the costs of congestion management.

d. **Planning and coordinating expansion.** Having two organizations responsible for planning and coordinating expansion over a wide area should be an improvement over the current situation where numerous entities undertake those activities for themselves. It will be important for MISO and PJM to develop ways of accounting for the impacts of their activity on systems outside the MISO and PJM footprints.

e. **Encompassing one geographic area.** The map (Figure 1) on the right [1] shows the proposed MISO and PJM configurations. The proposed MISO footprint is shaded in red, and the proposed PJM footprint in green. The Illinois entities proposing to join PJM are not geographically contiguous with the remaining portion of the PJM system. However, those parties are directly connected electrically with the remaining portion of the PJM system. That is, the EHV transmission systems of Commonwealth Edison, Illinois Power Company, and AEP are all directly connected to each other, and AEP to PJM. Figure 2 shows the EHV transmission lines (345 kV and above) of the former Alliance Companies proposing to join PJM and how those transmission lines overlay the service territories of the MISO companies.

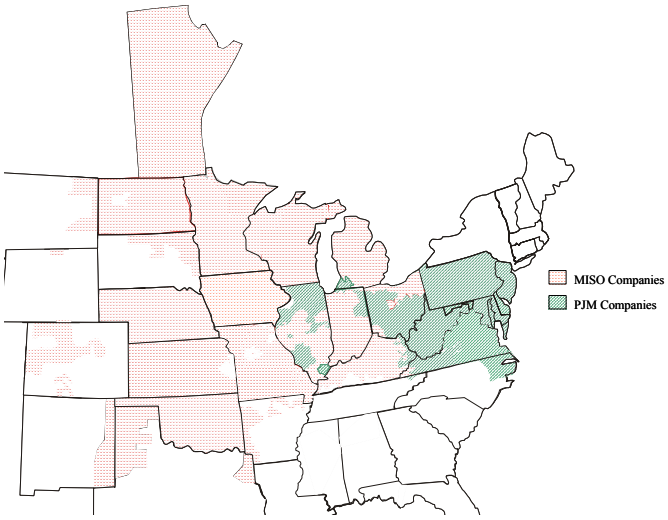

Figure 1 - Proposed MISO-PJM configuration

The MISO transmission system is also contiguous in this area, crossing "over," "under," or "around" the parties proposing to join PJM. In other words, the electrical systems are interlaced and overlapping. While this likely is not the configuration envisioned by the Commission in Order No. 2000, this configuration can work reliably, if proper coordination as described in this response takes place.

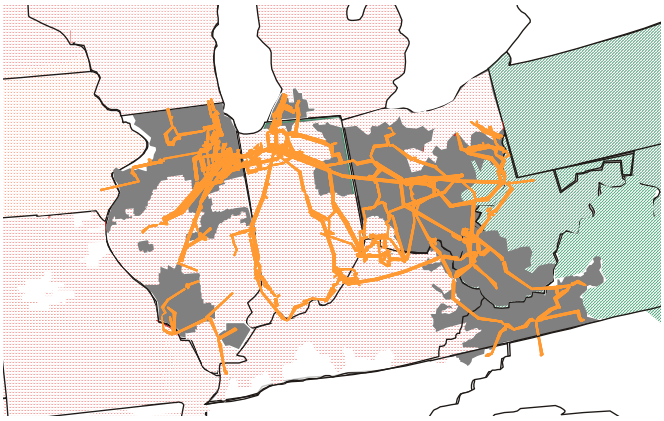

Figure 2 - Detail of EHV transmission system (345 kV and above)

4. **Please address the major reliability issues and proposed solutions detailed in the responses by PJM and MISO to your June 28 letter. Do the updated Reliability Plans adequately address these issues? How will this impact Midwest ISO RTO operations and will there be operational and/or reliability concerns that need to be addressed, including loop flow issues? How will security coordinator responsibilities be allocated? How will such allocation impact upon real-time operation of the power system? Please explain in detail.**

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[1] This map and the map in Figure 2 were included in an affidavit filed with the Commission on July 10 by Ronald R. Jackups of Cinergy. NERC is referring to these maps solely for purposes of illustration and not for the content of the affidavit.

NERC Response

Neither MISO nor PJM has submitted revised Reliability Plans, with detailed solutions to the reliability issues that the two have identified.

NERC expects MISO, PJM, and any other Reliability Authority affected by the MISO and PJM configurations to submit their updated Reliability Plans to the Operating Reliability Subcommittee for a thorough review before the September 17 – 19, 2002 subcommittee meeting. NERC expects MISO and PJM to address each of the Commission's issues listed in Question 4 above when they file their revised Reliability Plans. The Operating Reliability Subcommittee will then provide its opinion to the NERC Operating Committee as to whether the Reliability Plans are complete and feasible. This review and opinion is already a standard NERC procedure, and NERC will provide a report of its findings to the Commission.

Conclusion

Based on the foregoing, NERC recommends that, if the Commission approves the proposed MISO-PJM configuration, the Commission condition that approval upon (1) MISO's and PJM's agreement that the solutions they jointly develop for managing seams issues are feasible and effective, and (2) NERC's review and approval of the MISO and PJM Reliability Plans.

NORTH AMERICAN ELECTRIC
RELIABILITY COUNCIL

EAST CENTRAL AREA RELIABILITY
COORDINATION AGREEMENT

MID-AMERICA INTERCONNECTED
NETWORK, INC.

David N. Cook
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CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in the above-captioned proceeding.

Dated at Princeton, New Jersey, this 15th day of July, 2002.

David N. Cook

Attachment 1

NORTH AMERICAN ELECTRIC RELIABILITY COUNCIL

Princeton Forrestal Village, 116-390 Village Boulevard, Princeton, New Jersey 08540-5731

June 28, 2002

Mr. James P. Torgerson
President and Chief Executive Officer
Midwest ISO
701 City Center Drive
Carmel, Indiana 46032

Mr. Phillip G. Harris
President and Chief Executive Officer
PJM Interconnection, L.L.C.
955 Jefferson Avenue
Valley Forge Corporate Center
Norristown, Pennsylvania 19403-2497

Dear Jim and Phil:

Addressing Reliability Issues Between Midwest ISO and PJM

At a meeting with the Federal Energy Regulatory Commission on June 26, 2002, different views on potential reliability issues arose between certain members of the MISO and those of PJM regarding the proposed MISO-PJM configuration. I understand that Chairman Wood asked that NERC provide insight on these reliability issues for the Commission's consideration on July 17.

I am writing both of you on behalf of the NERC Operating Committee to request that the Midwest ISO and PJM submit the following information to the NERC staff for review by the Operating Reliability Subcommittee and Reliability Authority Working Group:

1. A list of potential issues and concerns that you believe need to be addressed for the reliable operation of your transmission organizations as well as those systems adjacent to your boundaries. We would like this list no later than July 3, 2002.

2. An updated Reliability Plan that includes the resolution of these issues and concerns.

As a matter of policy, NERC requires that all Reliability Authorities submit revised reliability plans to the Operating Reliability Subcommittee for review whenever there are changes in the RA's operating procedures or its membership ("footprint"). In this particular situation, because the Commission has asked for NERC's help within the next few weeks, we need to accelerate this process and deal with those issues that, if not resolved, might jeopardize the reliability of the Interconnection. It appears that most of these issues arise from the discontinuity in the proposed MISO-PJM borders.

On July 11, I will chair a special meeting of the Operating Reliability Subcommittee and Reliability Authority Working Group in Philadelphia to discuss the lists that you furnish and provide an opinion on how these issues should be addressed in your respective reliability plans.

NERC will then provide the Commission with these opinions and report on any actions that the ORS may agree to.

The discussion of these issues lists on July 11 is only a preliminary step in NERC's process that ensures all Reliability Authorities' reliability plans are up to date. I will expect that all Reliability Authorities and Regional Councils will review their reliability plans in light of the MISO-PJM configuration and provide the Operating Reliability Subcommittee with updates as necessary for review at its September 18–19, 2002 meeting. The ORS will forward to the Operating Committee for review and approval those plans that the ORS believes contain significant changes in RA organization or operating procedures.

This is an extremely compressed time schedule that may affect how the Commission will rule on your RTOs composition. Please call me if you have any questions about this request. Having known both of you both personally and professionally for many years, I know how truly dedicated you are in ensuring the reliability of our electricity grid.

Sincerely,

Derek Cowbourne

Derek R. Cowbourne
Chairman, NERC Operating Committee

DRC:mjh

cc: Chairman Patrick H Wood, III
Mr. William C. Phillips
Mr. Bruce M. Balmat
Operating Committee
Operating Reliability Subcommittee
Regional Managers
Planning Committee

Attachment 2

MISO / SPP and PJM
POTENTIAL RELIABILTY ISSUES
July 5, 2002

GENERAL: As large Regional Transmission Organizations are established, the electrical boundaries between systems are being modified and the authority for short-term reliability is being shifted from the local utilities and from previous regional Security Coordinators (Reliability Authorities) to these large RTOs. Cooperation and coordination between local utilities across their electrical boundaries is necessary today and will be necessary between RTOs in the future to maintain reliability. Together MISO/SPP and PJM are committed to working out the necessary agreements and the associated protocols for continuing reliable operations within the respective regions and also with their neighboring systems however the new electrical boundaries are established.

FERC has asked NERC to assess the reliability impacts of the proposed electrical boundaries of the MISO/SPP and PJM RTOs based on the selections of the Alliance Companies as the starting point. The degree and scope of the issues being evaluated are based on this proposed configuration. To facilitate NERC's review of this configuration, the staffs of MISO/SPP and PJM have developed the attached list of seams issues that have reliability implications. The staff's intent was to highlight each issue regardless of whether the issue was merely an interim operations issue (Pre MISO/SPP Market Operations) or whether the issue was related to future operations under a single market design.

Solutions to identified issues must be finalized before either RTO implements its market in proposed new areas. Some solutions may continue to be required after implementation of the joint and common market for interfaces with other non-market areas of the Eastern Interconnection.

As the organizations with the mandate for grid reliability, MISO/SPP and PJM will ensure that appropriate procedures are put into place to continue reliable operations and planning. Regardless of the electrical boundaries of the RTOs, both MISO/SPP and PJM are committed to the principles that ensure reliability. MISO/SPP and PJM will have well coordinated processes and procedures to handle all reliability issues.

REPORT ORGANIZATION: Each issue is presented using the following standard format:

ISSUE – Overview of the general issue.

STATEMENT OF ISSUE – This section provides a brief synopsis of the specific issue and how it pertains to reliable operations.

COMPLEXITIES: The complexities section will provide the various inter-related details to the particular problem and broadly outline the areas that require agreements and associated protocols.

POTENTIAL SOLUTION: In this section, PJM/MISO/SPP have outlined various solutions that will enable the RTO's to operate reliably regardless of the electrical boundaries and the state of development of each RTO's expansion plans (interim to single market operations). These potential solutions represent the current approach to managing reliability. Design and implementation activities may yield different, more effective solutions. Final solutions will be presented in updated Reliability Plans.

ISSUE #1 – PARALLEL FLOWS

Parallel flow issues that require close coordination among neighboring utilities exist today throughout the Eastern Interconnection. Parallel flows are a result of the interdependency of the generation dispatch and the transmission system usage between neighboring systems. This interaction is illustrated in the attached Appendix entitled "TPF Impacts for Selected POR/POD Pairs". Parallel flows will continue to exist under larger RTO operations that will likewise require close coordination to maintain reliable operations. Specific issues related to parallel flows issues include: Congestion Management Procedures and ATC/AFC Coordination.

STATEMENT OF ISSUE - Congestion Management Procedures

MISO will continue to use a TLR-based congestion management process prior to implementation of the MISO market, and an LMP congestion management process after MISO implements its market. PJM, under its market operations, will use their LMP-based congestion management process. Because there are two different congestion management methods until a joint and common market is implemented, the RTOs will need to closely coordinate operations to ensure reliability.

COMPLEXITIES

1. In an LMP based market there are no internal transactions to tag. A security constrained economic dispatch is used to dispatch generation for the entire region. Dynamic schedules are used to adjust the tie line schedules based on the results of the security constrained economic dispatch for multiple control areas.
2. The security constrained economic dispatch does not automatically honor external system constraints. Identifying and mitigating congestion impacts due to external system influences requires a different approach than contract path and use of TLR.
3. An effective coordination agreement between MISO and PJM is necessary to minimize the probability of Level 5 TLRs.
4. Market-to-market interfaces must also be addressed once MISO implements its market. Market-to-non-market interfaces will continue to be addressed with other areas of the Eastern Interconnection.

POTENTIAL SOLUTION

1. MISO and PJM will develop an agreement to address the treatment of parallel flows in the operation and planning areas that will have two goals. The first goal is the full utilization of the transmission system without the need for TLRs. The second goal is the development of a congestion relief process whereby transmission overloads can be eliminated through a shared reduction in flowgate or constraint usage by MISO and PJM.

2. In meeting the first goal, MISO and PJM will agree on a predefined set of flowgates or constraints to be considered by both organizations. There will be an allocation of usage of those flowgates or constraints. Once its allocation has been reached, an RTO would not able to make further commitments that adversely impact that flowgate or constraint without the approval of the other RTO. The allocation of usage must carry over from the operating area into the planning area such that future commitments on the flowgate or constraint do not exceed the RTO's allocated usage. This also applies to the assignment of FTRs to a flowgate or constraint.

3. In meeting the second goal, MISO and PJM will agree on steps to be taken by the two RTOs to unload a constraint on a shared basis. The steps must recognize the allocation of usage assigned to each RTO and their responsibility to achieve relief in proportion to their usage. MISO may elect to use TLR for its assigned relief while PJM implements internal redispatch to achieve its assigned relief. This will be done on a coordinated and comparable basis by both RTOs.

4. Prior to implementing the PJM market in the proposed new areas, these areas will continue to tag their transactions and be subject to the TLR process.

STATEMENT OF ISSUE - ATC/AFC Coordination

ATC/AFC Coordination is an extension of the parallel flow issue in that the RTOs will need to recognize common limits before granting transmission service. ATC/AFC Coordination is not restricted to granting PTP and NITS transmission service reserved under the OATTs of the two RTOs. It also covers the broader recognition of the amount of ATC/AFC that may be used for internal security constrained economic dispatch under market operations.

COMPLEXITIES

1. A centralized economic dispatch that uses LMP as a congestion management tool does not reserve and schedule internal transactions. Therefore a substitute mechanism for sharing actual and forecasted impacts will be needed until MISO/SPP implements their market.
2. The results of this centralized economic dispatch will need to be shared in order to identify potential impacts on MISO flowgates.
3. PJM's market and system operations will need to consider an additional number of external constraints.
4. The current methodology of using a single contract path between MISO-PJM will need to be evaluated since the interconnections are spread out and diverse.

5. The RTOs will need to take into consideration facility location and ownership issues such as extra-territorial generation and native load located in the neighboring RTO.

POTENTIAL SOLUTION

1. Consistent with the agreement on the treatment of parallel flows, there will also be an agreement on the coordination of ATCs/AFCs and the available future use of the transmission system by either entity. This agreement will address both the sharing of information used to determine ATCs/AFCs and an allocation of ATCs/AFCs between the two RTOs. A number of specific issues that will be addressed in the agreement include the following:
    a. Establishing a set of flowgates or constraints to be honored by both RTOs, including third party flowgates or constraints.
    b. Agreement that each RTO will consider its own flowgate or constraint usage as well as the usage of the other RTO when it determines the amount of flowgate or constraint capacity remaining.
    c. The data exchange periodicity that allows timely calculation of ATCs/AFCs to avoid overselling the transmission system.
    d. Use of common flowgate or constraint definition parameters.
    e. Data exchange that includes the use of common network models, real-time operation and planning data (load forecast, reservations, schedules, generation dispatch, generation and transmission outages, and topology changes).
    f. The granularity of the ATC/AFC calculation. The level of detail that will be used within PJM (smaller than a control area).
    g. The frequency for updating ATCs/AFCs, the ATC/AFC time intervals considered and, where appropriate, the exchange of ATCs/AFCs between the two RTOs.
    h. The types of ATCs/AFCs that will be determined. Whether firm and non-firm ATCs/AFCs will be determined by each RTO.
    i. Under what conditions a MISO limit may or may not be recognized by PJM (i.e., transmission service between MISO and PJM where MISO must also approve the service).

ISSUE #2 – CONTRACT TIE CAPACITY – PENINSULAS/ISLANDS

Contract tie capacity issues occur today between neighboring utility systems. Within a large centralized market, contract tie capabilities among the utilities in the centralized market are not an issue. However, during the transition to the proposed RTO configuration and development of a MISO market, there will be electrical "peninsulas" or "islands" resulting from the electrical topology of the RTOs.

STATEMENT OF ISSUE - One-Stop Shopping

Market participants desire the ability to conduct their business through a minimum number of transmission service providers. There may be cases where members of one RTO will need to obtain transmission service to deliver energy to another part of the same RTO.

COMPLEXITIES

With the proposed RTO topology, there are a number of complexities, some of which are commercially oriented, that will need to be addressed:

1. "Out" reservations and schedules.
2. "Internal" (source & sink) transactions requiring multiple transmission service reservations.
3. Agreement on how full network capabilities can be used to serve the customers.
4. Transactions requiring reciprocal rate treatment.
5. Contractual islands and peninsulas.
6. Administration of grandfathered agreements.
7. Prior to implementation of a single market, MISO has contract limits that are reached before physical network limits.

POTENTIAL SOLUTION

1. With the implementation of a joint and common market between MISO and PJM, the contract capacity limit between MISO and PJM will be combined. This means MISO will have full access to the combined MISO and PJM contract limits and PJM will have full access to the combined MISO and PJM contract limits. MISO and PJM will agree to share contract capacity limits prior to having a single market.
2. MISO and PJM will honor contract limits with outside entities. However, the sharing of contract capacities prior to having a single market means that only flow-based limits will be recognized within the footprint of the combined RTOs.
3. This sharing of contract capacities does not extend to contract limits with outside entities (i.e., MISO will not be able to by-pass PJM by dealing directly with the NYISO).

ISSUE #3 – DIFFERENT DEFINITIONS/PROCEDURES BETWEEN RTOs

Today, electric utilities must deal with different definitions and operating procedures with their neighboring systems. The industry is attempting to standardize definitions and operating procedures among electric utilities through NERC. Until more standardization is achieved, the emerging RTOs will need to work with their neighboring systems to address any differences in definitions or operating procedures. Two critical elements that will need to be specifically addressed are emergency and restoration procedures.

STATEMENT OF ISSUE – Emergency and Restoration Procedures

Coordination of Emergency Procedures - In order to be effective, emergency procedures need to be implemented quickly with no unnecessary delays in communicating with other RTOs.
Coordination of Power System Restoration Procedures – Effective restoration procedures require coordination and communication at all levels of the RTO organizations and their membership.

COMPLEXITIES

1. Joint emergency procedures are essential due to the highly dependent nature of facilities under different authorities.
2. Requires communication protocols between RTOs.
3. Requires formal coordination agreements that provide authority to take actions.
4. Effective agreements are necessary to avoid conflicting direction and to provide for rapid response during emergencies and restorations.

POTENTIAL SOLUTIONS

1. MISO and PJM will agree to the joint development of emergency procedures that identify the conditions under which emergency procedures will be called upon and the steps each RTO will be allowed or expected to take.
2. These emergency procedures will allow either RTO to take immediate steps by directing actions be taken by operating entities in both RTOs. Characteristics of such procedures will likely include:
    a. Minimize delays by not seeking the approval of the other RTO before contacting the operating entities.
    b. The operating entities will be instructed under what conditions they will receive directions from the other RTO. The operating entities will respond immediately to the directives of the other RTO and will not seek permission or confirmation from its own RTO before taking action.
    c. If the emergency response allows for coordination with the other RTO before action must be taken, the normal RTO to RTO request for action will be followed. If an immediate emergency response is needed, the normal RTO to RTO request will be by-passed.

d. The requesting RTO will deal directly with the operating entity and will follow-up with notification to the other RTO as soon as practicable following the request to the operating entity.

STATEMENT OF ISSUE – Operating Procedures for Voltage Collapse and Stability

This is a continuation of the earlier issue on the need for coordinated emergency operating procedures. The distinction here is that a voltage collapse or stability problem has the potential to cause cascading outages and therefore must be closely coordinated to maintain reliable operations.

COMPLEXITIES

1. RTOs were formed to have a regional perspective that looks beyond the boundary of a single control area.

2. RTOs with a regional perspective will do a better job maintaining system reliability than currently exists with multiple individual control areas over large geographic areas.

POTENTIAL SOLUTION

1. Emergency procedures will be in place between MISO and PJM where either RTO has the authority to take immediate steps directing operating entities in both RTOs during an emergency.
2. This will be followed up with notification to the other RTO on the conditions that existed and the steps that were taken.

STATEMENT OF ISSUE - NERC Regional Criteria and Reserve Sharing

In the proposed RTO configuration, each RTO includes all or parts of several Regional Reliability Councils (RRC). RRCs may have differing reliability criteria, or procedures and processes that vary. In addition, reserve sharing agreements exist in some RRCs. It will be important to have a clear plan to address reliability criteria that are understood, agreed to and complied with. RRC boundaries are likely to change during this transition.

COMPLEXITIES

1. There will be a bifurcation of the regional reliability criteria if two RTOs operate in a single region.
2. There are two areas where regional bifurcation is apparent: the use of operating reserve and TRM/CBM calculation methodology. If ComEd and IP plan to leave the MAIN reserve sharing program and if AEP and DPL or First Energy and NIPSCO plan to leave the ECAR reserve sharing program, there may not be enough remaining members to sustain these two separate reserve sharing programs.
3. The plans for all the control areas need to be established as soon as possible such that any necessary restructuring in the reserve sharing programs can be started.
4. In the event the control areas plan to stay in the MAIN and ECAR reserve sharing programs, there are issues on the assignment of TRM for reserve sharing and preservation of CBM for generation deficiencies between the two RTOs.

POTENTIAL SOLUTIONS

1. MISO and PJM will assess and address the impacts on regional reliability criteria and on regional reserve sharing programs.
2. MISO and PJM will develop reciprocal treatment of TRM and CBM on flowgates or constraints to the extent it is needed for reserve sharing between the two RTOs.
3. Reserve sharing and TRM/CBM are interim issues that will be resolved with the development of a single market.
4. The RTOs will coordinate and implement revised Reliability Plans.

ISSUE #4 – FACILITIES IN CLOSE ELECTRICAL PROXIMITY UNDER DIFFERENT RTOs

STATEMENT OF PROBLEM - Outage Maintenance Coordination

Generation and transmission outages may have significant effects on an adjacent system not in the same RTO. Use of generation for constraint control in one area could have significant impact on other areas.

COMPLEXITIES

1. Potential for need for generation in one RTO to be run for constraint control in another.
2. Joint coordination (initial requests, revisions, cancellations, etc.) will be needed for a larger number of transmission and generation facilities.
3. Impacts on operations and operation planning functions need to be acknowledged, shared and coordinated.

POTENTIAL SOLUTIONS

MISO and PJM will develop an agreement to address outage maintenance coordination protocols including the necessary data exchange processes. This agreement will consider the following:

1. List of critical transmission facilities where an outage may impact both RTOs.
2. Approval process from both RTOs before selected transmission maintenance requests are granted.
3. RTO review criteria and define under what conditions a transmission maintenance request would be denied, including an explanation why the request was denied and what steps can be taken to approve the request.
4. Cancellation process if one RTO must cancel the approval at a later time because of a change in system conditions.

STATEMENT OF ISSUE - Access and Expansion Planning

Generation interconnection requests and transmission system expansions and upgrades required for load growth or other reasons will need to be synchronized to avoid duplication of effort and ensure efficient solutions that promote and maintain reliability.

COMPLEXITIES

A variety of areas will need to be considered:

1. The number of transmission and generation facilities needing to be jointly planned
2. Requirements for considering impacts of other queues and/or studies performed out of queue order
3. Complexities associated with compensation for access and for generation interconnection upgrades
4. Duplication of analysis efforts
5. Duplication of power flow model development, maintenance, and enhancement efforts with associated increases in personnel & computing resources
6. Requirements for data sharing
7. Response time to access and interconnection requests

POTENTIAL SOLUTIONS

1. Planning processes and generator interconnection queues will be synchronized and the interconnection studies coordinated based on the overall impact of generators.
2. MISO and PJM will agree on the coordination of generation interconnection upgrades and the assignment of costs associated with those upgrades.
3. MISO and PJM will agree on the RTO functionality that is being assigned to ITCs within each RTO's footprint such that the RTO to RTO coordination issues addressed in this list of issues is still effective following implementation of an ITC.

APPENDIX

TPF[1] Impacts for Selected POR[2]/POD[3]

Transactions Internal to Proposed PJM Significantly Impacting Proposed MISO									
Transaction	AMRN	CE	IP	AEP	CIN	PJM	MECS	FE	ATC
AEP-->PJM	1.0%	1.0%	0.4%	100.0%	1.8%	100.0%	**13.7%**	**20.9%**	0.2%
CE-->AEP	**13.5%**	100.0%	5.7%	100.0%	**10.8%**	**0.9%**	**10.0%**	**8.5%**	4.0%
CE-->PJM	**13.4%**	100.0%	5.6%	95.9%	**11.0%**	100.0%	**18.7%**	**16.1%**	4.6%

Transactions Internal to Proposed MISO Significantly Impacting Proposed PJM									
Transaction	AMRN	CE	IP	AEP	CIN	PJM	MECS	FE	ATC
AMRN-->ATC	100.0%	**75.5%**	**14.9%**	**36.5%**	7.5%	**3.2%**	4.0%	3.7%	100.0%
NSP-->ATC	14.5%	**52.7%**	3.9%	**15.7%**	3.1%	**0.8%**	3.7%	1.2%	100.0%

Transactions from Proposed PJM Significantly Impacting Proposed MISO									
Transaction	AMRN	CE	IP	AEP	CIN	PJM	MECS	FE	ATC
AEP-->TVA	**22.3%**	15.4%	9.8%	100.0%	**13.2%**	**2.7%**	2.9%	**6.8%**	1.9%
CE-->TVA	**27.9%**	100.0%	12.5%	65.9%	**12.4%**	**3.0%**	**8.2%**	**5.0%**	**5.9%**

[1]TPF – Transaction Participation Factor
[2]POR – Point of Receipt
[3]POD – Point of Delivery

- Existing MISO Companies
- Proposed MISO Companies
- Existing PJM Companies
- Proposed PJM Companies

Attachment 3

Approximate Milestones for MISO-PJM Implementation

Date (earliest)	***MISO***	***PJM***
October 2002	Ameren, First Energy, and NIPSCO into MISO under MISO Reliability Authority	
November – December 2002		All PJM members under PJM Reliability Authority
Spring 2003		First new adjacent member joins PJM market (either Dominion or AEP).
Fall 2003	SPP and MAPP join MISO market (late fall). Remaining MISO members join MISO market 4 – 6 weeks later.	Other adjacent members join PJM market. (AEP or Dominion and Dayton P&L)
Spring 2004		Remaining PJM members join PJM market.
2005	Single MISO-PJM market. (Single security-constrained dispatch for combined systems)	