

**ARTICLE IX
COORDINATED REGIONAL TRANSMISSION EXPANSION PLANNING**

Yellow highlights are agreed to changes addressing inadvertent wording inconsistencies in PJM and MISO filed documents

"REDLINES" without highlighting are proposed language clarifications by PJM and MISO that are still under discussion.
Margin notes

Many margin notes

THIS DOCUMENT DOES NOT INCLUDE ANY DISCUSSIONS OF FERC DIRECTIVES REGARDING COST ALLOCATION

9.1 Administration; Committees.

9.1.1 Joint RTO Planning Committee.

The ISC shall form, as a subcommittee, a Joint RTO Planning Committee (JRPC) comprised of representatives of the Parties' respective staffs in numbers and functions to be identified from time to time. Each Party shall have the right, every other year, to designate a Chairman of the JRPC to serve a one-year calendar term. The ISC shall designate the first Chairman. The Chairman shall be responsible for the scheduling of meetings, the preparation of agendas for meetings, and the production of minutes of meetings. The JRPC shall coordinate the coordinated system planning under this Agreement.

For the purpose of coordinated system planning, the JRPC shall meet no less than twice per year. The JRPC may meet more frequently during the development of a Coordinated System Plan as determined to be necessary by the Parties.

9.1.1.1 JRPC Responsibilities

The JRPC is the decision making body for coordinated system planning. The Interregional Planning Stakeholder Advisory Committee (IPSAC) and other stakeholder groups may provide input to the JRPC.

Responsibilities of the JRPC include the following:

- (a) On an annual basis the JRPC shall conduct a review of identified transmission issues in accordance with section 9.3.5.6.2.a of this Agreement.
- (b) The JRPC, with input from the IPSAC, shall determine if a Coordinated System Plan study should be performed. If yes, such study shall be performed in accordance with section 9.3.6.2.b.
- (c) Prepare and document detailed procedures for the development of power system analysis models. At a minimum, and unless otherwise agreed to by the Parties, the JRPC shall develop common power system analysis models to perform coordinated system planning, as well as models for power flow analyses, short circuit analyses, and stability analyses. For studies of interconnections in close electrical proximity at the boundaries between the systems of the Parties, the JRPC will direct the performance

Comment [HC11]: On these redlines indicate proposed modifications by either PJM or MISO.

Comment [HC12]: like this provide draft information by MISO taken from their latest presentation to a stakeholder workshop on 4/29/15. This information has not been agreed to by PJM or PJM Transmission Owners. MISO intends their presentation as initial draft information for further discussion and development.

Comment [HC13]: This section number change is based on the 2/26/24 filing for ARR process insertion

Comment [HC14]: This section number is consistent with the 2/26/14 filing for ARR process insertion

of a detailed review of the appropriateness of applicable power system models.

- (d) Coordinate all planning activities under this Article IX, including the exchange of data.
- (e) Support the review by any federal or provincial agency of elements of the Coordinated System Plan.
- (f) Support the review by multi-state entities to facilitate the addition of inter-state transmission facilities.
- (g) Establish working groups as necessary to provide adequate review and development of the regional plans.
- (h) Establish a schedule for the rotation of responsibility for data management, coordination of stakeholder meetings, coordination of analysis activities, report preparation, and other activities.

9.1.1.2 Participating in Multi-Party Studies

The JRPC may combine with or participate in similarly established joint planning committees amongst multiple entities engaging in coordinated planning studies under tariff provisions or established under other joint agreements to which a Party is a signatory, for the purpose of providing for broader inter-regional planning coordination.

9.1.1.3 Coordinated System Planning Website

Each Party shall host its own website for communication of information related to interregional transmission coordination procedures. Under its direction, the JRPC shall coordinate with the Parties to ensure that all information and documents posted on each Party's respective website is accurate and consistent. Each Party's website shall contain, at a minimum, the following information:

- (a) Link to this Joint Operating Agreement
- (b) Notice of scheduled IPSAC meetings
- (c) Links to materials ~~for~~ for IPSAC meetings
- (d) Documents relating to Coordinated System Plan studies

9.1.2 Interregional Planning Stakeholder Advisory Committee.

The Parties shall form an IPSAC, in which participation is open to all stakeholders. The IPSAC shall facilitate stakeholder review and input into coordinated system planning with respect to the development of the Coordinated System Plan. IPSAC meetings shall be facilitated by the JRPC.

For the purpose of coordinated system planning, the IPSAC shall meet no less than once per year. The IPSAC may meet more frequently during the development of a Coordinated System Plan study as determined to be necessary by the Parties. The JRPC shall meet annually with the IPSAC to review identified transmission issues and provide input on whether a Coordinated System Plan study should be performed.

IPSAC meetings shall be on a mutually agreed to date determined by the JRPC.

The IPSAC will provide input to the JRPC on whether a Coordinated System Plan study should be performed pursuant to Section 9.3.6.2.a. If it is determined by the JRPC that a study should be performed, the IPSAC will provide input to the JRPC during the performance of the Coordinated System Plan study pursuant to Section 9.3.6.2.b.

Comment [HC15]: This section number is consistent with the 2/26/14 filing for ARR process insertion

Comment [HC16]: This section number is consistent with the 2/26/14 filing for ARR process insertion

9.2 Data and Information Exchange.

9.2.1 Annual Data and Information Exchange Requirement

In support of interregional planning coordination, each Party shall provide the other with the following data and information on an annual basis and will follow the stipulations for such exchange as noted below.

- 1(a) Power flow models for projected system conditions for the planning horizon (up to the next ten (10) years) that include planned generation development and retirements, planned transmission facilities and seasonal load projections.
- 2(b) System stability models with detailed dynamic modeling of generators and other active elements.
- 3(c) Production cost models for projected system conditions for the planning horizon that include generation and load forecasts and planned transmission facilities.
- 4(d) Assumptions used in development of above power flow, stability and production cost models.
- 5(e) Contingency lists for use in power flow, stability, and production cost analyses.

Models provided will be consistent with those used in the respective Party's planning processes. Formats for the exchange of data will be agreed upon by the Parties from time to time. Parties can provide the best available information and will not be required to develop unique models to meet the requirements of this Agreement. Data compiled through other multi-regional modeling efforts can be used to meet the data exchange requirements of this Agreement as agreed to in writing by both Parties. This annual data exchange will be completed during the first quarter of the calendar year, unless Parties agree in writing to a different timeline.

9.2.2 Data and Information Exchange upon Request

In addition to the data and information specified in Section 9.2.1, each Party shall provide the other with the following data and information upon request. Unless otherwise indicated, such data and information shall be provided as requested by either Party, as available, within 30 calendar days from the date of such request or on a mutually agreed to schedule.

- a. Any updates to data exchanged in accordance with Section 9.2.1.
- b. Short-circuit models for transmission systems that are relevant to the

- coordination of planning between the two Parties.
- c. The regional plan document produced by the Party and any long-term or short-term reliability assessment documents produced by the Party, the timing of each planned enhancement, and estimated in-service dates.
 - d. The status of expansion studies, such that each Party has knowledge that a commitment has been made to a system enhancement as a result of any such studies.
 - e. Identification and status of interconnection and long-term firm transmission service requests that have been received, including associated studies.
 - f. Transmission system maps in electronic or hard copy format for the Party's bulk transmission system and lower voltage transmission system maps that are relevant to the coordination of planning between the two Parties.
 - g. Such other data and information as is needed for each Party to plan its own system accurately and reliably and to assess the impact of conditions existing on the system of the other Party.

9.3 Coordinated System Planning.

The primary purpose of coordinated transmission planning and development of the Coordinated System Plan is to ensure that coordinated analyses are performed to identify expansions or enhancements to transmission system capability needed to maintain reliability, improve operational performance, ~~or~~ enhance the competitiveness of electricity markets, or promote public policy. The Parties will conduct such coordinated planning as set forth in this Section 9.3 and subsections thereof.

Comment [HC17]: Not in MISO 4/29/15 stakeholder presentation

9.3.1 Single Party Planning.

Each Party shall engage in such transmission planning activities, including expansion plans, system impact studies, and generator interconnection studies, as are necessary to fulfill its obligations under its OATT or as it otherwise shall deem appropriate. Such planning shall conform to applicable reliability requirements of the Party, NERC, applicable regional reliability councils, or any successor organizations, and any and all applicable requirements of federal, state, or provincial laws or regulatory authorities. Each Party agrees to prepare a regional transmission planning report that documents its annual regional plan prepared according to the procedures, methodologies, and business rules documented by the region. The Parties further agree to share, on an ongoing basis, information that arises in the performance of such single party planning activities as is necessary or appropriate for effective coordination between the Parties, including, in addition to the information sharing requirements of Sections 9.2 and 9.3, information on requests received from generation resources that plan on permanently retiring or suspending operation consistent with the timelines of each Party's OATT for such studies, and the identification of proposed transmission system enhancements that may affect the Parties' respective systems.

9.3.2 Coordinated System Plan.

The Coordinated System Plan is the result of the coordination of the regional planning that is conducted under this Agreement. The Parties will coordinate any studies required to assure the reliable, efficient, and effective operation of the transmission system. Results of such coordinated studies will be included in the Coordinated System Plan as further described in Section 9.3.6. The Coordinated System Plan shall also include the results of ongoing analyses of requests for interconnection and ongoing analyses of requests for long-term firm transmission service. The Parties shall coordinate in the analyses of these ongoing service requests in accordance with Sections 9.3.3 and 9.3.4. The Coordinated System Plan shall be an integral part of the expansion plans of each Party. To the extent that the JRPC agrees to combine with or participate in similarly established joint planning committees amongst multiple planning entities engaging in coordinated planning studies as provided for under Section 9.1.1.2, the coordinated planning analyses of this Protocol may be integrated into any joint coordinated planning analyses engaged in by the multiple parties, provided that the requirements of the Coordinated System Plan are integrated into the scope of such joint coordinated planning analyses.

Comment [HC18]: This section number is consistent with the 2/26/14 filing for ARR process insertion

9.3.3 Analysis of Interconnection Requests.

In accordance with the procedures under which the Parties provide interconnection service, each Party will coordinate with the other the conduct of any studies required in determining the impact of a request for generator or merchant transmission interconnection. Results of such coordinated studies will be included in the impacts reported to the interconnection customers as appropriate. The process for the coordination of studies and Network Upgrades shall be documented in the respective Party's business practices manuals that are publicly available on each Party's website. Both Parties' manual language shall be coordinated so as to ensure the communication of requirements is consistent and includes the following:

- (a) Consistent with the data exchange provisions of the manuals, the Parties will exchange current power flow modeling data annually and as necessary for the study and coordination of interconnection requests. This will include the associated update of the other Party's relevant queue requests, contingency elements, monitoring elements data, and other data as may be required.
- (b) The coordination of the study results, pursuant to each Party's business practices manuals, will determine the potential impact on the direct connect system and on the impacted Party. The direct connect system will be responsible for communicating coordinated interconnection study results to the direct connect interconnection customer.
- (c) After reviewing the results, if the potentially impacted Party determines that its system may be materially impacted by the interconnection, that Party will contact the direct connect system and request participation in the applicable interconnection studies. The Parties will coordinate and

mutually agree on the nature of studies to be performed to test the impacts of the interconnection on the potentially impacted Party. If the Parties cannot mutually agree on the nature of the studies to be performed they can resolve the differences through the dispute resolution procedures documented in Article XIV. The Parties will strive to minimize the costs associated with the coordinated study process.

- (d) Any coordinated studies will be performed in accordance with the study scope and timeline mutually agreed to in 9.3.3 (c) above utilizing the responsibility options outlined in 9.3.3 (e) below.
- (e) If the coordinated interconnection study identifies constraints that ~~found~~ require infrastructure additions on the impacted system to mitigate them, then the potentially impacted Party may perform its own analysis, in conjunction with the direct connect Party's Interconnection Studies. The interconnection customer whose project requires mitigation of constraint(s) found on an impacted Party's system shall enter into the appropriate Facilities Study agreement as required under the impacted Party's OATT.
- (f) The direct connect system will collect from the interconnection customer the costs incurred by the potentially impacted Party associated with the performance of such studies and forward collected amounts to the potentially impacted Party.
- (g) If the results of the coordinated study process indicate that Network Upgrades are required in accordance with procedures, guidelines, criteria, or standards applicable to the potentially impacted system, the direct connect system will identify the need for such Network Upgrades in the appropriate study report prepared for the interconnection customer.
- (h) Requirements for construction of such Network Upgrades will be under the terms of the applicable OATT, agreement among owners of transmission facilities subject to the control of the potentially impacted Party and consistent with applicable federal, state or provincial regulatory policy.
- (i) In the event that Network Upgrades are required on the potentially impacted Party's system, then interconnection service will commence on a schedule mutually agreed upon among the Parties. This schedule will include milestones with respect to the Network Upgrade construction and the amount of service that can commence after each milestone.
- (j) Each Party will maintain a separate interconnection queue. The Parties will maintain a composite listing of interconnection requests for all interconnection projects that have been identified as potentially impacting the systems of both Parties. These lists will be presented annually ~~to~~

the IPSAC.

9.3.4 **Analysis of Long-Term Firm Transmission Service Requests.**

In accordance with applicable procedures under which the Parties provide long-term firm transmission service, the Parties will coordinate the conduct of any studies required to determine the impact of a request for such service. Results of such coordinated studies will be included in the impacts reported to the transmission service customers as appropriate. The process for the coordination of studies and Network Upgrades shall be documented in the respective Party's business practices manuals that are publicly available on each Party's website. Both Parties' manual language shall be coordinated so as to ensure the communication of requirements is consistent and includes the following:

- (a) The Parties will coordinate the calculation of AFC values associated with the service, based on contingencies on the systems of each Party that may be impacted by the granting of the service.
- (b) Upon the posting to the OASIS of a request for **service**, the Party receiving the request will coordinate the study of the request, pursuant to each Party's business practices manuals, which will determine the potential impact on each Party's system. The Party receiving the request will be responsible for communicating coordinated study results to the customer requesting such service.
- (c) If the potentially impacted Party determines that its system may be materially impacted by the service, and the nature of the service is such that a request on the potentially impacted Party's OASIS is unnecessary (i.e., the potentially impacted Party is "off the path"), then the potentially impacted Party will contact the Party receiving the request and request participation in the applicable transmission service studies. The Parties will coordinate with respect to the nature of studies to be performed to test the impacts of the requested service on the potentially impacted Party, who will perform the studies. The Parties will strive to minimize the costs associated with the coordinated study process. The JRPC will develop screening procedures to assist in the identification of service requests that may impact systems of parties other than the system receiving the request.
- (d) Any coordinated studies will be performed in accordance with the mutually agreed upon study scope and timeline requirements developed by the Parties. If the Parties cannot mutually agree on the nature and timeline of the studies to be performed they can resolve the differences through the dispute resolution procedures documented in Article XIV of this Agreement.
- (e) If constraints are identified during the coordinated study on the impacted system, then the potentially impacted Party may perform its own **analysesanalysis** in conjunction with the studies performed by the Party

that has received the request for service. The customer whose request for service requires mitigation of constraint(s) found on an impacted Party's system shall enter into the appropriate facilities study agreement as required under the impacted Party's OATT. During the Facilities Study, the potentially impacted Party will conduct its own Facilities Study as a part of the Party receiving the request's Facilities Study. The study cost estimates indicated in the study agreement between the Party receiving the request and the transmission service customer will reflect the costs and the associated roles of the study participants. The Party receiving the request will review the cost estimates submitted by all participants for reasonableness, based on expected level of participation and responsibilities in the study.

- (f) The Party receiving the request will collect from the transmission service customer and forward to the potentially impacted system the costs incurred by the potentially impacted systems associated with the performance of such studies.
- (g) If the results of a coordinated study indicate that Network Upgrades are required in accordance with procedures, guidelines, criteria, or standards applicable to the potentially impacted system, the Party receiving the request will identify the need for such Network Upgrades in the system impact study prepared for the transmission service customer.
- (h) Requirements for the construction of such Network Upgrades will be under the terms of the OATTs, agreement among owners of transmission facilities subject to the control of the potentially impacted Party and consistent with applicable federal, state, or provincial regulatory policy.
- (i) In the event that Network Upgrades are required on the potentially impacted Party's system, then transmission service will commence on a schedule mutually agreed upon among the Parties. This schedule will include milestones with respect to the Network Upgrade construction and the amount of service that can commence after each milestone.

9.3.5 Analysis of Incremental Auction Revenue Rights Requests.

The Parties will coordinate, as deemed appropriate,¹ the conduct of any studies in response to a request for Incremental Auction Revenue Rights ("Incremental ARR") ("Incremental ARR Request") made under one Party's tariff to determine its impact on the other Party's system. Results of such coordinated studies will be included in the impacts reported to the customer requesting Incremental ARRs as appropriate. Coordination of studies and Network Upgrades will include the following:

- (a) The Parties will coordinate the base Firm Flow Entitlement values associated with the Coordinated Flowgates that may be impacted by the Incremental ARR Request.

- (b) Upon receipt of an Incremental ARR Request or the review of studies related to the evaluation of such request, the Party receiving the Incremental ARR Request will determine whether the other Party is potentially impacted. If the other Party is potentially impacted, the Party receiving the Incremental ARR Request will notify the other Party and convey the information provided in the request in addition to but not limited to the list of impacted constrained facilities.
- (c) During the System Impact Study, the potentially impacted Party may participate in the coordinated study by providing input to the studies to be performed by the Party receiving the Incremental ARR Request. The potentially impacted Party shall determine the Network Upgrades, if any, needed to mitigate constraints on identified impacted facilities. The Parties shall coordinate to ensure any proposed Network Upgrades maintain the reliability of each Party's transmission system.
- (d) Any coordinated System Impact Studies will be performed in accordance with the mutually agreed upon study timeline requirements developed by the Parties. If the Parties cannot mutually agree on the nature and timeline of the studies to be performed they can resolve the differences through the dispute resolution procedures documented in Article XIV of this Agreement in accordance with applicable tariff provisions.
- (e) During the Facilities Study, the potentially impacted Party may conduct its own Facilities Study as a part of Facilities Study being conducted by the Party that received the Incremental ARR request. The study cost estimates indicated in the Facility Study Agreement between the Party receiving the request and the Incremental ARR customer will reflect the costs and the associated roles of the study participants, including the potentially impacted Party. The Party receiving the request will review the cost estimates submitted by all participants for reasonableness, based on expected level of participation and responsibilities in the study.
- (f) The Party receiving the Incremental ARR Request shall collect from the Incremental ARR customer, and forward to the potentially impacted Party, the agreed upon payments associated with the performance of such studies.
- (g) If the results of the coordinated study indicate that Network Upgrades are required in accordance with procedures, guidelines, criteria, or standards applicable to the potentially impacted Party, the Party receiving the request will identify the need for such Network Upgrades in the System Impact Study prepared for the Incremental ARR customer.
- (h) The construction of such Network Upgrades will be subject to the terms of the potentially impacted Party's tariff, the agreement among owners transferring functional control of transmission facilities to the control of

the potentially impacted Party, and applicable federal, state, or provincial regulatory policy.

- (i) In the event that Network Upgrades are required on the potentially impacted Party's system, the Incremental ARR will commence on a schedule mutually agreed upon among the Parties. This schedule will include milestones with respect to the Network Upgrade construction and the amount of service that can commence after each milestone.

¹ *Infra* (b).

9.3.6 **Development of the Coordinated System Plan.**

9.3.6.1

Each Party agrees to assist in the preparation of a Coordinated System Plan applicable to the Parties' systems. Each Party's annual transmission planning reports will be incorporated into the Coordinated System Plan, however, neither Party shall have the right to veto any planning of the other Party nor shall either Party have the right, under this Section, to obtain financial compensation due to the impact of another Party's plans or additions. The Coordinated System Plan will be finalized only after the IPSAC has had an opportunity to review it and respond. The Coordinated System Plan shall:

- (a) Integrate the Parties' respective transmission expansion plans, including any market-based additions to system infrastructure (such as generation, market participant funded, or merchant transmission projects) and Network Upgrades identified jointly by the Parties, together with alternatives to Network Upgrades that were considered;
- (b) Set forth actions to resolve any impacts that may result across the seams between the Parties' systems due to the integration described in the preceding part (a); and
- (c) Describe results of the joint transmission analysis for the combined transmission systems, as well as explanations, as may be necessary, of the procedures, methodologies, and business rules utilized in preparing and completing the analysis.

9.3.6.2

Coordination of studies required for the development of the Coordinated System Plan will include the following: 1) annual issues review to determine the need for a Coordinated System Plan study described in Section 9.3.6.2.a; and 2) Coordinated System Plan study described in Section 9.3.6.2.b.

- (a) **Determine**~~Determining~~ the Need for a Coordinated System Plan Study-
 - (i) On an annual basis, the Parties shall perform an annual evaluation of transmission issues identified by each Party, including issues from the respective Party's market operations and annual planning processes, or Third-Parties. This annual review of transmission issues will be administered by the JRPC on a mutually agreed to schedule taking into consideration each Party's regional planning cycles. The JRPC through each Party's respective electronic

distribution lists shall provide a minimum of 60 calendar days advance notice of the IPSAC meeting to review identified transmission issues. Stakeholders may identify and submit transmission issues and supporting analysis no later than 30 calendar days in advance of the meeting, for consideration by the IPSAC and JRPC.

- (ii) Following the annual issues evaluation meeting with IPSAC the JRPC will determine, taking into consideration input provided by the IPSAC, the need to perform a Coordinated System Plan study. A Coordinated System Plan study shall be initiated ~~by~~ either of the following: ~~(i)~~ each Party in the JRPC votes in favor of performing the Coordinated System Plan study; or (ii) if after two consecutive years in which a Coordinated System Plan study has not been performed, and one Party votes in favor of performing a Coordinated System Plan study. ~~The JRPC shall inform the IPSAC of the decision whether or not to initiate a Coordinated System Plan study.~~
- (iii) When a Coordinated System Plan study is determined to be necessary, the JRPC shall agree to the start date of the study, which shall not exceed 180 calendar days from the date of the JRPC's determination to perform the study, unless the Parties agree to an alternative start date taking into consideration each Party's regional planning cycles.

(b) Coordinated System Plan Study Process

- (i) Each Party will be responsible for providing ~~the~~ technical support required to complete the analysis for the study. The responsibility for the coordinated study and the compilation of the coordinated study report will alternate between the Parties.
- (ii) The JRPC will develop a scope and procedure for the coordinated planning analysis. The scope of the studies will include evaluations of issues resulting from the annual coordinated review and analysis of the Parties transmission issues. The scope and schedule for the Coordinated System Plan study will include the schedule of IPSAC review and input at all stages of the study. Study scope and assumptions will ~~be~~ documented and provided to the IPSAC for review and comment.
- (iii) Ad hoc study groups may be formed as needed to address localized seams issues or to perform targeted studies of particular areas, needs, or potential expansions and to ensure the coordinated reliability and efficiency of the systems. Under the direction of the Parties, study groups will formalize how activities will be implemented.
- (iv) The Coordinated System Plan study will consider ~~the~~ identified issues reviewed by the JRPC and ~~IPSAC~~ for further evaluation of potential remedies consistent with the criteria of this Protocol and each Party's criteria. Stakeholder input will be solicited for potential remedies to identified issues, which includes

Comment [HC19]: MISO 4/29/15 stakeholder version missed this agreed to resolution

- stakeholder and transmission developer proposals for cross-border allocation projects. The study scope developed under 9.3.6.2 (b) (ii) will include the schedule for acceptance of such stakeholder cross-border allocation project proposals including supporting analyses that address issues identified in the JRPC solicitation.
- (v) The Parties will document the scope and assumptions including the process and schedule for the conduct of the study. The scope design will include, as appropriate, evaluation of the transmission system against the reliability criteria, operational performance criteria, ~~and~~ economic performance criteria, and public policy needs applicable to each Party.
- (vi) The Parties will use planning models that are developed in accordance with the procedures to be established by the JRPC. The JRPC will develop joint study models consistent with the models and assumptions used for the regional planning cycle most recently completed, or underway, as appropriate. If the Coordinated System Plan Study requires transmission evaluations driven by different regional needs (for example transmission that addresses any combination of needs including regional reliability, economics and public policy), then the coordination of studies, models, and assumptions will include the analyses appropriate to each region. The Parties will develop compromises on assumptions when feasible and will incorporate study sensitivities as appropriate when different regional assumptions must be accommodated. Known updates and revisions to ~~this~~ models will be incorporated in a comprehensive fashion when new base planning models are available. Prior to the availability of a new comprehensive base model, known updates will be factored in, as necessary, into the review of results. Models will be available for stakeholder review subject to confidentiality and Critical Energy Infrastructure Information (CEII) processes of the Parties. The IPSAC will have the opportunity to provide feedback to the JRPC regarding the study models.
- (vii) The IPSAC will have the opportunity to provide input into the development of potential solutions. The JRPC will be responsible for the screening and evaluation of potential solutions, including evaluating the proposed projects for designation as a cross-border allocation project pursuant to Section 9.4.4.1.
- (viii) Transmission upgrades identified through the analyses conducted according to this Protocol and satisfying the applicable Protocol and regional planning requirements will be included in the Coordinated System Plan after the conclusion of the Coordinated System Plan Study and applicable regional analyses. After the conclusion of the Coordinated System Plan Study, any project

Comment [HCI10]: MISO changed to Interregional Transmission Projects in 4/29/15 stakeholder presentation

Comment [HCI11]: MISO reference is to the filed version. This reference includes the 2/26/14 ARR filing

Comment [HCI12]: MISO changed to Interregional Transmission Project in 4/29/15 stakeholder presentation

Comment [HCI13]: MISO changed to Interregional Transmission Project in 4/29/15 stakeholder presentation

Comment [HCI14]: PJM Added after 3/17/15 IPSAC.

included in the Coordinated System Plan and designated for cross-border cost allocation, if not already engaged in the regional review processes, will be submitted to the regional processes for review according to section 9.3.6.2 (b) (x).

- (ix) At the completion of the Coordinated System Plan study, the JRPC shall produce a report documenting the Coordinated System Plan study, including the transmission issues evaluated, studies performed, solutions considered, and, if applicable, recommended cross-border allocation projects with the associated cost allocation to the Parties pursuant to Section 9.4.4.1. In addition, explanations why proposed cross-border allocation projects did not move forward in the process will be provided in the final Coordinated System Plan study report. The JRPC shall provide the Coordinated System Plan study report to the IPSAC for review. The IPSAC shall be provided the opportunity to provide input to the JRPC on the Coordinated System Plan study report. The final Coordinated System Plan study report shall be posted on each Party's website.
- (x) The JRPC's recommended cross-border allocation projects identified in the Coordinated System Plan study shall be reviewed by each Party through its respective regional processes. Transmission plans to resolve problems will be identified, included in the respective plans of the Parties and will be presented to the respective ~~Parties~~ Parties' Boards for approval and implementation using each Party's procedures for approval. Critical upgrades for which the need to begin development is urgent will be reviewed by each Party in accordance with their procedures and presented to the Parties' Boards for approval as soon as possible after identification through the coordinated planning process. Other projects identified will be reviewed by each Party in accordance with their procedures and presented to the Parties' Boards for approval in the normal regional planning process cycle as long as this cycle does not delay the implementation of a necessary upgrade. The JRPC shall inform the IPSAC of the outcome of each Party's review of the recommended cross-border allocation projects.

Comment [HCI15]: MISO changed to interregional in 4/29/15 stakeholder presentation

Comment [HCI16]: MISO reference is to filed document that does not include the 2/26/14 ARR filing

Comment [HCI17]: Added after 3/17/15 IPSAC

Comment [HCI18]: Changed to Interregional in MISO 4/29/15 stakeholder presentation

Comment [HCI19]: Changed to Interregional Transmission Projects in MISO 4/29/15 stakeholder presentation

Comment [HCI20]: Not included in MISO 4/29/15 stakeholder presentation

Comment [HCI21]: MISO changed to Interregional Transmission Projects in 4/29/15 stakeholder presentation

Comment [HCI22]: MISO changed to Interregional Transmission Projects in 4/29/15 stakeholder presentation

9.4 Allocation of Costs of Network Upgrades.

9.4.1 Network Upgrades Associated with Interconnections.

When under Section 9.3.3 it is determined that a generation or merchant transmission interconnection to a Party's system will have an impact on the Affected System such that Network Upgrades shall be made, the upgrades on the Affected System shall be paid for in accordance with the terms and conditions of the Party's OATT.

9.4.2 Network Upgrades Associated with Transmission Service Requests.

When under Section 9.3.4 it is determined that the granting of a long-term firm delivery service request with respect to a Party's system will have an impact on the Affected System such that Network Upgrades shall be made, the upgrades on the Affected System shall be paid for in accordance with the terms and conditions of the Party's OATT.

9.4.3 Network Upgrades Associated with Incremental Auction Revenue Rights Requests.

When under Section 9.3.5 it is determined that the granting of an Incremental ARR request with respect to a Party's system will have an impact on the Affected System such that Network Upgrades shall be made, the upgrades on the Affected System shall be paid for in accordance with the terms and conditions of the Affected System's tariff provisions.

9.4.4 Network Upgrades Under Coordinated System Plan.

The Coordinated System Plan will identify cross-border projects as (i) CBBRP; or (ii) CBMEP. Consistent with the applicable OATT provisions, the Coordinated System Plan will designate the portion of the Project Cost for each such project that is to be allocated to each RTO on behalf of its Market Participants. The JRPC will determine an allocation of costs to each RTO for such Network Upgrades based on the procedures described below. The proposed allocation of costs will be reviewed with the IPSAC and the appropriate multi-state entities and posted on the internet web site of the two RTOs. Stakeholder input will be solicited and taken into consideration by the JRPC in arriving at a consensus allocation of costs.

9.4.4.1 Criteria for Project Designation as a Cross-Border Allocation Project:

Projects will be designated in accordance with the following criteria:

9.4.4.1.1 Criteria for Project Designation as a Cross-Border Baseline Reliability Project:

Projects that meet all of the following criteria will be designated as CBBRPs: (i) by agreement of the JRPC, the project is needed to efficiently meet applicable reliability criteria; ~~and~~ (ii) the project must be a baseline reliability project as defined under the Midwest ISO or PJM Tariffs. CBBRPs can be transmission facilities located wholly in one transmission planning region or interregional transmission facilities, which are located within two or more neighboring transmission planning regions.

9.4.4.1.2 Criteria for Project Designation as a Cross-Border Market Efficiency Project

Projects that meet all of the following criteria will be designated as a CBMEP if the project: (i) has an estimated Project Cost of \$20,000,000 or greater; (ii) is evaluated as part of a Coordinated System Plan or joint study process, as described in section 9.3.6 of the JOA; (iii) meets the threshold benefit to cost ratio as prescribed under the terms of, and using the benefit and cost measures prescribed under section 9.4.4.1.2.1 of the JOA; (iv) qualifies as an economic transmission enhancement or expansion under the terms of the PJM RTEP and

Comment [HCI23]: MISO reference is to original filing that doesn't have the 2/26/14 ARR updates. This numbering issue flows to all following sections but will not be commented in each instance.

Comment [HCI24]: MISO changed to Interregional Transmission Projects in 4/29/15 stakeholder presentation

Comment [HCI25]: MISO 4/29/15 stakeholder presentation changes this to: reliability (ii) public policy

Comment [HCI26]: MISO 4/29/15 stakeholder presentation changes this to (iii) economic needs

Comment [HCI27]: MISO changed to Interregional Projects in 4/29/15 stakeholder presentation. Probably should be Interregional Transmission Project

Comment [HCI28]: MISO changes to: "Interregional Projects can be transmission facilities which are located within two or more neighboring transmission planning regions, or located wholly in one transmission planning region but has been jointly determined and agreed upon to provide benefits to both transmission planning regions. These Projects will be designated in accordance with the following criteria

Comment [HCI29]: Deleted in MISO 4/29/15 stakeholder presentation

Comment [HCI30]: MISO rewords: "Interregional Projects that address reliability needs must meet the following criteria" in 4/29/15 stakeholder presentation. Probably should be Interregional Transmission Projects

Comment [HCI31]: MISO changes to: "avoids one or more regional projects in both RTOs that is needed to efficiently meet applicable reliability criteria"

Comment [HCI32]: MISO changes (ii) to: "be more cost-effective and address the same regional reliability needs"

Comment [HCI33]: MISO adds: "9.4.3.1.2 Public Policy Criteria: Interregional Projects that address public policy needs must meet the following criteria: (i) by agreement of the JRPC, the project avoids one or more regional projects in both RTOs that is needed to efficiently address public policy needs; (ii) have a combined benefit-to-cost ratio of 1.25 or higher to the PJM and MISO regions, as calculated in Section ...

Comment [HCI34]: MISO changes to: "Economic Criteria" and increments numbering to 9.4.3.1.3

Comment [HCI35]: MISO changes to: "Interregional Projects that address economic needs must meet the following criteria"

also qualifies as a market efficiency project under the terms of Attachment FF of the Midwest ISOMISO OATT (including all applicable threshold criteria), provided that any minimum Project Cost threshold required to qualify a project under either the PJM RTEP or Midwest ISOMISO OATT shall apply the Project Cost of the CBMEP and not the allocated cost; and (v) addresses one or more constraints for which at least one dispatchable generator in the adjacent market has a GLDF of 5% or greater with respect to serving load in that adjacent market, as determined using the Coordinated System Plan power flow model. CBMEPs can be transmission facilities located wholly in one transmission planning region or interregional transmission facilities, which are located within two or more neighboring transmission planning regions.

Comment [HCI36]: MISO changes to "Interregional Project addressing economic needs"

Comment [HCI37]: MISO omits this addition

9.4.4.1.2.1 Determination of Benefits to Each RTO from CBMEP

Comment [HCI38]: MISO changes to: "an Interregional Project meeting the economic criteria" Entire section has cosmetic updates for "MISO" name change and "Interregional Project addressing economic needs" change

The RTOs shall jointly evaluate the benefits to the combined Midwest ISO and PJM markets, and to each market individually, by evaluating multiple metrics using a multi-year analysis to determine whether a proposed project qualified as a CBMEP. The RTOs shall perform this evaluation as follows:

- a. The RTOs shall utilize a benefit metric to analyze the anticipated annual economic benefits of construction of a proposed CBMEP to Transmission Customers of each RTO. Benefits are measured for a project by the estimated change in the benefit metric with and without the incorporation of the proposed project. The benefit metric is based upon the impact of the project on: (1) APC (adjusted to account for purchases and sales) and (2) NLP. The benefit metric for each RTO shall be developed by weighting the APC benefit and the NLP benefit. The benefit metric shall be calculated as the sum of seventy percent (70%) times the change in APC benefit for each RTO plus thirty percent (30%) times the change in NLP benefit for each RTO where the change in APC and NLP is calculated by subtracting the APC and NLP values determined without the proposed CBMEP:

$$\text{Benefit Metric} = (70\% \text{ of change in APC} + 30\% \text{ of change in NLP})$$

The APC for each RTO represents each RTO's production costs adjusted for interchange purchases and sales. For each simulation hour in which an RTO is selling interchange, the APC shall be calculated by multiplying the interchange sales MW times the RTO's generation-weighted LMP and then subtracting this value from the RTO's production cost. For each simulation hour in which an RTO is purchasing interchange, the APC shall be calculated by multiplying the interchange purchase MW times the RTO's load-weighted LMP and then adding this value to the RTO's production cost.

The NLP benefit for each RTO represents each RTO's gross load

payment minus the estimated value of congestion-hedging transmission rights in each RTO. The NLP shall be calculated by multiplying the LMP at each modeled load bus in the RTO by the load (in MW) at the bus, for each simulation hour (load LMP * load (in MW)), and then subtracting from that product the estimated value of congestion-hedging transmission rights for that hour. For each simulation hour, the value of an RTO's transmission rights shall be calculated by subtracting the RTO generation-weighted LMP from the RTO load-weighted LMP and then multiplying this difference times the lower of the RTO's total generation MW level or the RTO's total load MW level.

The benefit metric shall be calculated for each RTO for each year of simulation. Benefits for intermediate years between simulated years will be based on interpolation. The annual benefit for a CBMEP shall be determined as the sum of the benefit values for each RTO. The total project benefit shall be determined by calculating the present value of annual benefits for, at a minimum, the first ten years of project life after the projected in-service year, with a maximum planning horizon of 20 years from the current year.

- b. The RTOs shall employ a threshold benefits-to-costs ratio test to evaluate a potential CBMEP. Only projects that meet the benefits-to-costs ratio threshold shall be designated as a CBMEP. The costs applied in the benefits-to-costs ratio shall be the present value, over the same period for which the project benefits are determined, of the annual revenue requirements for the project. The annual revenue requirements for the CBMEP are determined from the estimated CBMEP installed costs and the fixed charge rate applicable to the constructing transmission owner(s).

The benefits-to-costs ratio threshold for a project to qualify as a CBMEP shall be 1.25 to 1. To determine the present value of the annual benefits and costs, the discount rate shall be based on the transmission owners' most recent after-tax embedded cost of capital weighted by each transmission owner's total transmission capitalization. Each transmission owner shall provide the RTOs with the transmission owner's most recent after-tax embedded cost of capital, total transmission capitalization, and levelized carrying charge rate, including the recovery period. The recovery period shall be consistent with recovery periods allowed by FERC for comparable facilities.

- c. Using the cost allocated to each RTO pursuant to section 9.4.4.2.2 of the JOA, and the Coordinated System Plan model, including using the same simulation years, each RTO will evaluate the project using its internal criteria to determine if it qualifies as an economic transmission enhancement or expansion under the terms of the PJM RTEP and also

qualifies as a market efficiency project under the terms of Attachment FF of the Midwest ISO OATT.

9.4.4.2 Cross-Border Project Shares:

The Coordinated System Plan shall designate the share of the Project Cost to be allocated to each RTO as set forth in the following subsections:

9.4.4.2.1— Cost Allocation for Cross-Border Baseline Reliability Projects

- a. **Method for Thermal Constraints:** The Coordinated System Plan shall designate the share of the Project Cost to be allocated to each RTO based on the relative contribution of the combined Load of each RTO to loading on the constrained facility requiring the need for the CBBRP. The loading contribution will be pre-determined using a joint RTO planning model developed and agreed to by the planning staffs of both RTOs. This model will form the basecase from which reliability needs on the combined systems will be determined for the Coordinated System Plan. The model, adjusted for the conditions driving the upgrade needs, will be used to calculate the DFAX for cost allocation purposes for each RTO, using a source of the aggregate of RTO generation (network resources) for each RTO to a sink of all Loads within that RTO. The DFAX is the appropriate distribution factor for the condition causing the upgrade; OTDF for contingency condition flow criteria violations, and PTDF for normal condition flow criteria violations. The DFAX calculation determines the MW flow impact attributable to each RTO on the constraint requiring the transmission system to be upgraded. The total load of each RTO for the condition modeled is multiplied by the DFAX associated with that RTO to determine the respective MW flow contribution of that RTO to the constraint. The RTOs will quantify the relative impact due to PJM's system and the relative impact due to the Midwest ISO's system and then will allocate between PJM and the Midwest ISO the load contributions to the reliability constraint on the system by calculating the relative impacts caused by each RTO. This methodology will determine the extent to which each RTO contributes to the need for a reliability upgrade consistent with the Coordinated System Plan modeling that determined the need for the upgrade. The Midwest ISO total load impacts will be allocated to the Midwest ISO and the PJM total load impacts will be allocated to PJM. PJM and the Midwest ISO will then reallocate their shares internally in accordance with their respective tariffs. By calculating the impacts in this manner, the RTOs will ensure that the relative contribution of each RTO (including both the aggravating and benefiting contributions of generation and load patterns within each RTO) to the need for a particular upgrade, is appropriately captured in the ensuing allocations, and that the allocation is consistent with the Coordinated System Plan

Comment [HC139]: MISO makes extensive changes to cost allocation based on their avoided cost proposal for reliability and public policy. MISO represents that Economic projects remain the same.

modeling that determined the need for the upgrade.

b. Method for Non-Thermal Constraints:

The JRPC will establish an interface, comprised of a number of transmission facilities, to serve as a surrogate for allocation of cost responsibility for non-thermal constraints. The interface will be established such that the aggregate flow on the interface best represents the non-thermal constraint which the CBBRP is proposed to alleviate. Allocation of cost responsibility for the non-thermal constraint will be determined by applying the procedures described in this Section to the interface serving as a surrogate for the constraint.

9.4.4.2

Cost Allocation for Cross-Border Market Efficiency Projects

For CBMEP's that meet all of the qualifications in section 9.4.4.1.2, the applicable project costs shall be allocated to the respective RTOs in proportion to the net present value of the total benefits calculated for each RTO pursuant to Section 9.4.4.1.2.1.a.

9.4.4.3 Determination of Cross-Border Cost Allocation Share Outside of Coordinated System Plan:

Either RTO may request that a project be tested against the cross-border cost allocation criteria during the interim periods between periodic formal releases of the Coordinated System Plan. The RTOs will conduct reviews between the formal cycles on at least an annual basis. Such tests will be performed on the best available joint planning model, as determined by the JRPC.

The joint planning model will be a minimum 5-year horizon case, modeling peak summer conditions, and will be developed by February of each year. It will be based on the current RTEP basecase for PJM and the current MTEP basecase for the Midwest ISO. The basecase developed by each RTO will be based on documented procedures, which, in turn, will guide the development of the joint RTO planning model. Any disputes that arise will be resolved through the dispute resolution procedures documented in Article XIV. Each year the model will be updated by the RTOs to include changes to long term firm transmission service, load forecast, topology changes, generation additions/retirements and any other relevant system changes that may have occurred since the previous years' basecase development. The joint RTO planning model will be available to any member of PJM or the Midwest ISO.

9.4.4.4 Cost Recovery of Cross-Border Allocation Shares:

The cost recovery of any share of cost of a border project allocated to either RTO shall be recovered by each RTO according to the applicable tariff provisions of the RTO to which such cost recovery is allocated.

9.4.4.5 Transmission Owners Filing Rights:

Comment [HCI40]: CBBRP and Public Policy ISSUES UNDER DISCUSSION by PJM Transmission Owners

Nothing in this Section 9.4 shall affect or limit any Transmission Owners filing rights under Section 205 of the Federal Power Act as set forth in the applicable Tariffs and applicable agreements.

9.4.4.6 Amendments:

The RTOs shall amend Article IX of this Agreement in accordance with the applicable tariffs and/or agreements.

9.5 Agreement to Enforce Duties to Construct and Own.

To obtain Network Upgrades under this Article IX, PJM will enforce obligations to construct and own or finance enhancements or additions to transmission facilities in accordance with the Transmission Owners Agreement, PJM Interconnection, L.L.C. First Revised Rate Schedule FERC No. 29, the West Transmission Owners Agreement, PJM Interconnection, L.L.C. Rate Schedule FERC No. 33, as either may be amended or restated from time to time, and Midwest ISO will enforce obligations to construct enhancements or additions to transmission facilities in accordance with the Agreement of Transmission Facilities Owners To Organize The Midwest Independent Transmission System Operator, Inc., A Delaware Non-Stock Corporation, Midwest ISO FERC Electric Tariff, First Revised Rate Schedule No. 1, as it may be amended or restated from time to time.

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