Joint Reliability Coordination Agreement
Among And Between
Midwest Independent Transmission System Operator, Inc.,
PJM Interconnection, L.L.C., And
Tennessee Valley Authority

Date: April 22, 2005

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This Joint Reliability Coordination Agreement ("Agreement") dated this 22nd day of April, 2005, among and between the following parties:

> Midwest Independent Transmission System Operator, Inc. ("MIDWEST ISO"), a Delaware non-stock corporation having a place of business at 701 City Center Drive, Carmel, Indiana 46032
>
> PJM Interconnection, L.L.C. ("PJM") a Delaware limited liability company having a place of business at 955 Jefferson Avenue, Valley Forge Corporate Center, Norristown, Pennsylvania 19403
>
> Tennessee Valley Authority ("TVA"), a corporate entity existing under the Tennessee Valley Authority Act, 16 U.S.C. §§ 831-831ee.

ARTICLE ONE
RECITALS

1. MIDWEST ISO is the regional transmission organization that provides operating and reliability functions in portions of the Midwest States and Canadian Provinces. MIDWEST ISO administers an open access tariff for transmission and related services on its grid, and is developing processes and systems to operate markets to facilitate trading of day-ahead and real-time energy, and financially firm transmission rights;

2. PJM is the regional transmission organization that provides operating and reliability functions in portions of the mid-Atlantic and Midwest States. PJM also administers an open access tariff for transmission and related services on its grid, and independently operates markets for day-ahead and real-time energy, and financially firm transmission rights;

3. TVA is a transmission provider that provides operating and reliability functions in the TVA Reliability Coordinator area, and administers Transmission Service Guidelines for open access transmission and related services on its system. TVA is not subject to regulation by the Federal Energy Regulatory Commission as a "public utility" under the Federal Power Act;

4. The Federal Energy Regulatory Commission has ordered each regional transmission organization to develop mechanisms to address inter-regional coordination;

5. On May 20, 2004, the Parties entered into a Data Exchange Agreement Among and Between Tennessee Valley Authority, the Midwest Independent Transmission System Operator, Inc., and PJM Interconnection, L.L.C., providing for exchanges of certain data and

information in furtherance of inter-regional coordination, the reliability of their systems, and in the case of the regional transmission organizations, efficient market operations;

6. In accordance with Good Utility Practice, the Parties seek to establish or confirm other arrangements and protocols in furtherance of the reliability of their systems and efficient market operations, as provided under the terms and conditions of this Agreement, and to incorporate into this Agreement the data and information exchange to which they previously agreed as revised herein;

NOW, THEREFORE, for good and valuable consideration including the Parties' mutual reliance upon the covenants contained herein, the Parties agree as follows:

ARTICLE TWO
ABBREVIATIONS, ACRONYMS, AND DEFINITIONS

2.1 Abbreviations and Acronyms.

2.1.1 "ATC" shall mean Available Transfer Capability.

2.1.2 "AFC" shall mean Available Flowgate Capability.

2.1.3 "CBM" shall mean Capacity Benefit Margin.

2.1.4 "CF" shall mean a Coordinated Flowgate.

2.1.5 "CIM" shall mean Common Information Model.

2.1.6 "CMP" shall mean the Congestion Management Process.

2.1.7 "CRTPS" shall mean the Coordinated Regional Transmission Planning Study.

2.1.8 "EFOR" shall mean Equivalent Forced Outage Rate.

2.1.9 "EMS" shall mean the respective Energy Management Systems utilized by the Parties to manage the flow of energy within their Regions.

2.1.10 "FERC" shall mean the Federal Energy Regulatory Commission or any successor agency thereto.

2.1.11 "FTP" shall mean the standardized file transfer protocol for data exchange.

2.1.12 "ICCP", "ISN", and "ICCP/ISN" shall mean those common communication protocols adopted to standardize information exchange.

2.1.13 "IDC" shall mean the NERC Interchange Distribution Calculator used for identifying and requesting congestion management relief.

2.1.14 "IRL" shall mean Interconnected Reliability Limit.

2.1.15 "ISN" shall have the meaning referred to in the reference to ICCP.

2.1.16 **"**JOA" shall mean the Joint Operating Agreement Between The Midwest Independent Transmission System Operator, Inc. and PJM Interconnection, L.L.C., as it may be amended, supplemented, or restated from time to time.

2.1.17 "JPC" shall mean the Joint Planning Committee.

2.1.18 "MMWG" shall mean the NERC working group that is charged with multi-regional modeling.

2.1.19 "MVAR" shall mean megavolt amp of reactive power.

2.1.20 "NERC" shall mean the North American Electricity Reliability Council or successor organization.

2.1.21 "OASIS" shall mean the Open Access Same-Time Information System required by FERC for the posting of market and transmission data on the Internet.

2.1.22 "OATT" shall mean the applicable open access transmission tariff.

2.1.23 "OC" shall refer to the Operating Committee under this Agreement.

2.1.24 "PMAX" shall mean the maximum generator real power output reported in MWs on a seasonal basis.

2.1.25 "PMIN" shall mean the minimum generator real power output reported in MWs on a seasonal basis.

2.1.26 "QMAX" shall mean the maximum generator reactive power output reported in MVARs at full real power output of the unit.

2.1.27 "QMIN" shall mean the minimum generator reactive power output reported in MVARs at full real power output of the unit.

2.1.28 "RC" shall mean Reliability Coordinator.

2.1.29 "RCF" shall mean a Reciprocal Coordinated Flowgate.

2.1.30 "RCIS" shall mean the Reliability Coordinator Information System.

2.1.31 "RTO" refers to Regional Transmission Organization as defined in FERC's Order No. 2000, or to MIDWEST ISO and/or PJM, as applicable.

2.1.32 "SCADA" refers to a supervisory control and data acquisition system.

2.1.33 "SDX System" shall mean the system used by NERC to exchange system data.

2.1.34 "SOL" shall mean System Operating Limit.

2.1.35 "TLR" shall mean the NERC Transmission Loading Relief Procedures used in the Eastern Interconnection as specified in NERC Operating Policies.

2.1.36 "TRM" shall mean Transmission Reliability Margin.

2.1.37 "TTC" shall mean Total Transfer Capability.

2.2 **Definitions.** Any undefined, capitalized term used in this Agreement that is not defined in this Section shall have the meaning given in the preamble of this Agreement or the CMP, and if not defined in the preamble or CMP, shall have the meaning given under industry custom, and where applicable, in accordance with Good Utility Practice.

2.2.1 "a & b multipliers" shall mean the multipliers that are applied to TRM in the planning horizon and in the operating horizon to determine non-firm AFC/ATC. The "a" multiplier is applied to TRM in the planning horizon to determine non-firm AFC/ATC. The "b" multiplier is applied to TRM in the operating horizon to determine non-firm AFC/ATC. The "a & b" multipliers can vary between 0 and 1, inclusive. They are determined by individual transmission providers based on network reliability considerations.

2.2.2 "Agreement" shall have the meaning stated in the preamble.

2.2.3 "Allocation" shall mean a calculated share of capability on a Reciprocal Coordinated Flowgate to be used by Reciprocal Entities when coordinating AFC, transmission sales, and dispatch of generation resources.

2.2.4 "Available Flowgate Capability" shall have the meaning stated in Section 5.1.7.1.

2.2.5 "Available Flowgate Rating" shall mean the maximum amount of power that can flow across the applicable interface without overloading (either on an actual or contingency basis) any element of the Flowgate. The Flowgate rating is in units of megawatts. If the Flowgate is voltage or stability limited, a megawatt proxy is determined to ensure adequate voltages and stability condition.

2.2.6 "Available Transfer Capability" shall mean the Total Transfer Capability less the projected loading across the interface, less TRM and CBM.

2.2.7 "Confidential Information" shall have the meaning stated in Section 15.1.

2.2.8 "Congestion Management Process" means the Congestion Management Process document attached hereto as Attachment 1 and incorporated herein, as it may be amended, revised, or restated from time to time.

2.2.9 "Control Area(s)" shall mean an electric power system or combination of electric power systems to which a common automatic generation control scheme is applied.

2.2.10 "Coordinated Flowgate" shall have the meaning stated in Section 6.1.2.1.

2.2.11 "Coordinated Operations" means all activities that will be undertaken by the Parties pursuant to this Agreement.

2.2.12 **"**Coordinated Regional Transmission Planning Study" shall have the meaning stated in Section 9.3.4.

2.2.13 "Effective Date" shall have the meaning stated in Section 14.1.

2.2.14 "Firm Flow" shall mean the estimated impacts of firm Network and Point-to-Point service on a particular Coordinated Flowgate.

2.2.15 "Firm Flow Limit" shall mean the maximum value of Firm Flows an entity can have on a Coordinated Flowgate or Reciprocal Coordinated Flowgate, as applicable, as calculated under the CMP.

2.2.16 "Flowgate" shall mean a representative modeling of facilities or groups of facilities that may act as potential constraint points on the regional system.

2.2.17 "Good Utility Practice" shall mean any of the practices, methods, and acts engaged in or approved of by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods, and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety, and expedition. Good Utility Practice is not intended to be limited to the optimum practice, method, or act to the exclusion of all others, but rather to be acceptable practices, methods, and acts generally accepted in the region.

2.2.18 "Governmental Authority" shall mean any federal, state, regional, local, or foreign court, tribunal, government, governmental agency, military, governmental or regulatory body (including any stock exchange, automated quotation system, or self-regulatory body), or authority over the transmission and/or generation facilities of a Party or the Parties, but shall exclude TVA in its capacity as a Party under this Agreement but shall not exclude TVA in any other capacity.

2.2.19 "Intellectual Property" shall mean (i) ideas, designs, concepts, techniques, inventions, discoveries, or improvements, regardless of patentability, but including without limitation patents, patent applications, mask works, trade secrets, and know-how; (ii) works of authorship, regardless of copyright ability, including copyrights, and any moral rights recognized by law; and (iii) any other similar rights, in each case on a worldwide basis.

2.2.20 "Interconnected Reliability Limit" shall mean the value (such as MW, MVAR, Amperes, Frequency, or Volts) derived from, or a subset of, the System Operating Limits, which if exceeded, could expose a widespread area of the bulk electrical system to instability, uncontrolled separation(s) or cascading outages.

2.2.21 "Joint Planning Committee" shall have the meaning referred to in Section 9.1.

2.2.22 **“**Market-Based Operating Entity” shall mean an Operating Entity that operates a security constrained, bid-based economic dispatch bounded by a clearly defined market area.

2.2.23 “Market Flows” shall mean the calculated energy flows on a specified Flowgate as a result of dispatch of generating resources within a Market Based Operating Entity’s market (excluding tagged transactions).

2.2.24 “Network Upgrades” shall mean those facilities located beyond the point of interconnection of the generating facility to the transmission grid.

2.2.25 “Notice” shall have the meaning stated in Section 16.11.

2.2.26 “Operating Committee” shall have the meaning stated in Section 3.3.

2.2.27 “Operating Entity” shall mean an entity that operates and controls a portion of the bulk transmission system with the goal of ensuring reliable energy interchange between generators, loads, and other operating entities.

2.2.28 “Party” or “Parties” refers to each party to this Agreement or all, as applicable.

2.2.29 “Reciprocal Coordinated Flowgate” shall have the meaning stated in Section 6.1.2.2.

2.2.30 “Reciprocal Coordination Agreement” shall mean an agreement between Operating Entities to implement the reciprocal coordination procedures defined in the CMP.

2.2.31 **“**Reciprocal Entity” shall mean an Operating Entity that coordinates the future-looking management of Flowgate capability in accordance with a Reciprocal Coordination Agreement.

2.2.32 **“**RCF Base Usage” shall mean the long-term firm and network service usage of RCFs.

2.2.33 “Region” shall mean the Control Areas and transmission facilities with respect to which a Party serves as a transmission provider or Reliability Coordinator under NERC policies and procedures.

2.2.34 “Reliability Coordinator” shall mean, with respect to a Control Area, an entity approved by NERC to be responsible for reliability for one or more Control Areas, and which has undertaken such responsibility for the applicable Control Area.

2.2.35 “SCADA Data” shall mean the electric system security data that is used to monitor the electrical state of facilities, as specified in NERC policies and procedures.

2.2.36 "Scheduled Outages" shall mean the planned unavailability of transmission and/or generation facilities dispatched by a Party, as described in Article Seven of this Agreement, and do not include forced or other unplanned outages.

2.2.37 "System Operating Limit" shall mean the value (such as MW, MVAR, Amperes, Frequency, or Volts) that satisfies the most limiting of the prescribed operating criteria for a specified system configuration to ensure operation within acceptable reliability criteria.

2.2.38 "Third Party" refers to any entity other than a Party to this Agreement.

2.2.39 "Total Transfer Capability" shall mean the amount of electric energy that can be transferred over applicable transmission facilities in a reliable manner, generally the applicable rating of the applicable transmission facility.

2.2.40 **"**Transmission Reliability Margin" shall mean that amount of transmission transfer capability necessary to ensure that the interconnected transmission network is secure under a reasonable range of uncertainties in system conditions.

2.2.41 "Transmission Service Guidelines" shall mean the TVA Transmission Service Guidelines, as amended, revised, or restated from time to time.

2.2.42 "Voltage and Reactive Power Coordination Procedures" shall have the meaning given under Article Eleven.

2.3 Rules of Construction.

2.3.1 No Interpretation Against Drafter. Each Party participated in the drafting of this Agreement and each Party agrees that no rule of construction or interpretation against the drafter shall be applied to the construction or the interpretation of this Agreement.

2.3.2 Incorporation of Preamble and Recitals. The Preamble and Recitals of this Agreement are incorporated into the terms and conditions of this Agreement and made a part thereof.

2.3.3 Rules of Interpretation. Defined terms in the singular shall include the plural and vice versa, and the masculine, feminine, or neuter gender shall include all genders. Whenever the words "include," "includes," or "including" are used in this Agreement, they are not limiting and have the meaning as if followed by the words "without limitation." The word "Section" refers to the applicable section of this Agreement and, unless otherwise stated, includes all subsections thereof. The word "Article" refers to articles of this Agreement.

2.3.4 NERC Policies and Procedures. All activities under this Agreement shall be conducted in a manner that meets or exceeds the applicable NERC policies or procedures, as such policies and procedures may be revised from time to time.

2.3.5 Geographic Scope. Each Party will perform this Agreement with respect to each Control Area for which the Party serves as transmission provider, and with respect to each Control Area for which it serves as Reliability Coordinator, provided that a Party shall be required to perform this Agreement with respect to a Control Area for which it serves as Reliability Coordinator only to the extent that the applicable agreement under which it serves in that capacity permits such performance.

ARTICLE THREE
OVERVIEW, ADMINISTRATION, AND RELATIONSHIP WITH OTHER AGREEMENTS

3.1 Overview and Scope of this Agreement. Subject to Section 3.2, this Agreement provides the following:

3.1.1 Two separate arrangements for certain exchanges of information and the implementation of reliability and efficiency protocols: (a) between TVA and MIDWEST ISO; and (b) between TVA and PJM.

3.1.2 The equitable and economical management of congestion on (a) Flowgates affected by flows of TVA and either or both MIDWEST ISO or PJM, or (b) in order to encourage and facilitate wide-spread use of the congestion management procedures by Third Parties, on Flowgates affected by the flows of any Party and any Third Party that, by executing a Reciprocal Coordination Agreement, binds itself to the congestion management procedures of this Agreement.

3.1.3 Certain arrangements among all of the Parties for coordination of their systems.

3.1.4 Certain arrangements among all of the Parties for administration of this Agreement.

3.2 Relationship Between This Agreement And The Joint Operating Agreement. Notwithstanding any provision of this Agreement, this Agreement does not govern arrangements solely between MIDWEST ISO and PJM; such arrangements are governed under the Joint Operating Agreement Between The Midwest Independent Transmission System Operator, Inc. and PJM Interconnection, L.L.C. ("JOA"), as amended from time to time. No part of this Agreement shall be construed to amend or replace any part of the JOA. In the event of any conflict between this Agreement and the JOA with respect to any undertakings or agreements between MIDWEST ISO and PJM under the JOA, the JOA shall control. Nothing in this Agreement shall cause any part of the JOA to be binding upon TVA.

3.3 Establishment and Functions of Operating Committee. To administer the arrangements under this Agreement, the Parties shall establish an Operating Committee ("OC").

3.3.1 The OC shall have the following duties and responsibilities:

3.3.1.1 Determine the date(s) for implementing the various parts of this Agreement in accordance with Section 14.1;

3.3.1.2 Meet no less than once quarterly to address any issues associated with this Agreement that a Party may raise and to determine whether any changes to this Agreement, or procedures employed under this Agreement, would enhance reliability, efficiency, or economy;

3.3.1.3 Conduct additional meetings upon Notice given by any Party, provided that the Notice specifies the reason(s) for the requested meeting;

3.3.1.4 Conduct dispute resolution in accordance with Article Twelve of this Agreement;

3.3.1.5 Initiate process reviews at the request of any Party for activities undertaken in the performance of this Agreement;

3.3.1.6 In its discretion, monitor, evaluate, and collaboratively seek to improve the congestion management process under the CMP; and

3.3.1.7 In its discretion, take other actions, including the establishment of subcommittees and/or task forces, to address any issues that the OC deems necessary in the implementation of this Agreement.

3.3.2 Operating Committee Representatives. Upon execution of this Agreement, each Party shall designate a primary and alternate representative to the OC and shall inform the other Parties of its designated representatives by Notice. A Party may change its designated OC representatives at any time, provided that timely Notice is given to the other Parties. Each designated OC representative shall have the authority to make decisions on issues that arise during the performance of this Agreement. The costs and expenses associated with each Party's designated OC representatives shall be the responsibility of the designating Party.

3.3.3 Limitations Upon Authority of Operating Committee. Any decision to implement new arrangements or protocols under this Agreement that any Party determines, in its sole discretion, would enhance its costs of performance materially, must be by unanimous consent of the three Parties' OC representatives. With respect to any other matter, unanimous agreement among the three Parties' OC representatives shall not be required; however, the representatives of MIDWEST ISO and PJM shall not have the authority to impose any decision on TVA with respect to any matter without TVA's consent.

3.4 Data Exchange Methodologies. In implementing the data exchange requirements of the JOA and the Data Exchange Agreement, the Parties have variously developed certain methodologies for the compilation, formatting, transmitting, and integration of the data that is also the subject of this Agreement. The Parties agree to use, to the extent possible, the previously developed methodologies for exchanging the data set forth in Article Four. If the use of such a previously developed methodology is impracticable, the Parties agree to negotiate in good faith to develop a substitute methodology for that data that will minimize the cost of developing new data exchange methodologies for all Parties.

3.5 **Relationship With Data Exchange Agreement.** As of the Effective Date, this Agreement shall replace and supersede the Data Exchange Agreement Among and Between Tennessee Valley Authority, the Midwest Independent Transmission System Operator, Inc. and PJM Interconnection, L.L.C., dated on or about May 20, 2004, and such agreement shall be deemed terminated.

3.6 **Ongoing Review and Revisions.** The Parties have agreed to the terms and conditions of this Agreement as their respective systems exist and are contemplated as of the Effective Date. The Parties expect that these systems and technology applicable to those systems and to the collection and exchange of data will change from time to time throughout the term of this Agreement, including changes to the boundaries of a Party in its capacity as an RTO, changes to the boundaries of, or identities of, Control Areas for which a Party serves as Reliability Coordinator, and changes to the Control Areas included in the security constrained, bid-based economic dispatch markets administered by PJM and MIDWEST ISO. The Parties agree that the objectives of this Agreement can be fulfilled only if the Parties, from time to time, review and, as appropriate, revise the requirements stated herein in response to changes, including deleting, adding, or revising requirements and protocols. Each Party shall negotiate in good faith in response to such revisions the other Parties may propose from time to time. Nothing in this Agreement, however, shall require any Party to reach agreement with respect to any such changes, or to purchase, install, or otherwise implement new equipment, software, or devices, or functions except as required to perform this Agreement.

ARTICLE FOUR
EXCHANGE OF INFORMATION AND DATA

4.1 **Exchange of Operating Data.** The Parties will exchange the following types of data and information: (a) Real-Time and Projected Operating Data; (b) SCADA Data; (c) EMS Models; (d) Operations Planning Data; and (e) Planning Information and Models. The frequency of exchange will be as stated with respect to specific exchanges provided under this Article or, if no frequency is stated, then the frequency shall be as necessary or appropriate to support the purpose of the exchange or otherwise in accordance with Good Utility Practice. The Operating Committee will determine various commencement dates for the exchange of information hereunder. Nothing in this Agreement shall require a Party to provide or exchange information that it does not possess or cannot obtain.

To facilitate the exchange of all such data, each Party will designate to each other Party's Vice President of Operations, a contact to be available twenty-four (24) hours each day, seven (7) days per week, and an alternate contact to act in the absence or unavailability of the primary contact, to respond to any inquiries. With respect to each contact and alternate, each Party shall provide the name, telephone number, e-mail address, and fax number. Each Party may change a designee from time to time by Notice to the other Party's Vice President of Operations.

The Parties agree to exchange data in a timely manner consistent with existing defined formats or such other formats to which the Parties may agree. If any required data exchange format has not been agreed upon as of the Effective Date, or if a Party determines that an agreed format should be revised, a Party shall give Notice of the need for an agreed format or revision and the Parties will jointly seek to complete development of the format within thirty (30) days of such Notice.

Each Party shall provide the data with respect to all of its transmission customers, and as applicable, all entities that participate in the markets it administers, during the term of the Agreement.

4.1.1 Real-Time and Projected Operating Data.

4.1.1.1 The Parties shall exchange the following information:

(a) Real–time operating information:

(i) Generation status of the units in each Party's Region;
(ii) Transmission line status;
(iii) Real-time loads;
(iv) Scheduled use of reservations;
(v) TLR information, including calculation of Market Flows;
(vi) Redispatch information, including the next most economical generation block to decrement/increment; and
(vii) Real-time constraints.

(b) Projected operating information:

(i) Unit commitment/merit order;
(ii) Maintenance schedules;
(iii) Forced outage rates;
(iv) Firm purchase and sales;
(v) Independent power producer information including current operating level, projected operating levels, Scheduled Outage start and end dates;
(vi) The planned and actual operational start-up dates for any permanently added, removed, or significantly altered transmission segments; and
(vii) The planned and actual start-up testing and operational start-up dates for any permanently added, removed, or significantly altered generation units.

4.1.1.2 The Parties agree that various components of the data exchanged under Section 4.1, including data exchanged under § 4.1.1.1 (b)(iii) (forced outage rates), § 4.1.4.5(e) (equivalent forced outage rates), § 4.1.4.10 (a) (generation Scheduled Outages) , 4.1.4.10(c) (notifications of short term forced outages), and data exchanged under § 5.1.1 (18 month schedule for

Scheduled Outages), are Confidential Information and that, in addition to the protections of Confidential Information provided under Article Fifteen:

(a) The Party receiving the Confidential Information shall treat the information in the same confidential manner as its governing documents require it treat the confidential information of its own members and market participants.

(b) The receiving Party shall not release the producing Party's Confidential Information until expiration of the time period controlling the producing Party's disclosure of the same information, as such period is described in the producing Party's governing documents from time to time. As of the Effective Date, this period is six (6) months with respect to bid or pricing data, and seven (7) calendar days for transmission data after the event ends.

(c) All other prerequisites applicable to the producing Party's release of such Confidential Information have been satisfied as determined by the producing Party.

4.1.2 Exchange of SCADA Data. With reference to NERC Policy No. 4, Appendix 4B, "Electric System Security Data," (Control Area data exchange) and NERC Policy No. 4B, "Reliability Coordination – Operational Security Information" (Reliability Coordinator data exchange):

4.1.2.1 The Parties shall exchange requested transmission power flows, measured bus voltages, and breaker equipment statuses of their bulk transmission facilities via ICCP or ISN.

4.1.2.2 Each Party shall accommodate, as soon as practical, another Party's request for additional ICCP/ISN bulk transmission data points, but in any event, no more than one (1) week after the request has been submitted.

4.1.2.3 The Parties will comply with all governing confidentiality agreements executed by the Parties relating to ICCP/ISN data.

4.1.2.4 The Parties shall exchange SCADA data consisting of:

(a) Status measurements 69 kV and above (breaker statuses) (as available and required to observe for reliability as the respective Parties may determine);

(b) Analog measurements 69 kV and above (flows and voltages); (as available and required to observe for reliability as the respective Parties may determine);

(c) Generation point measurements, including generator output for each unit in MW and MVARS, as available;

(d) Load point measurements, including bus loads, and specific loads at each substation in MW and MVARS, as available;

(e) Control Area net interchange;

(f) Control Area total load;

(g) Control Area operating reserves; and

(h) Identification of other real-time data available through ICCP/ISN.

4.1.3 Models. The Parties will exchange their detailed EMS models once a year in CIM format, and shall exchange updates of the CIM files as new data becomes available. The annual exchange shall include the ICCP/ISN mapping files, identification of individual bus loads, seasonal equipment ratings, and one-line drawings that shall be used to expedite the model conversion process. The Parties shall also exchange updates that represent the incremental changes that have occurred to the EMS model since the most recent update.

4.1.4 Operations Planning Data. Upon the written request of a Party, a Party shall provide the information specified in this Section to the extent such information is available or can be obtained.

4.1.4.1 Flowgates. The Parties shall exchange the following information:

(a) Flowgate definitions including seasonal TTC, TRM, CBM, and a & b multipliers;

(b) Flowgates to be added on demand;

(c) List of Coordinated Flowgates and Reciprocal Coordinated Flowgates;

(d) List of Flowgates to recognize when selling point-to-point service (if different than the list of Coordinated Flowgates); and

(e) Firm and non-firm AFC for all Flowgates required under Section 4.1.4.1(c) and (d).

4.1.4.2 Transmission Service Reservations. The Parties shall exchange the following information:

(a) Daily list of all reservations, hourly increment of new reservations;

(b) List of reservations to exclude;

(c) Reservation and interchange schedules, as required to permit the accurate calculation of TTC and ATC/AFC values;

(d) Procedures and practices used to model intra-RTO reservations, reservations on external systems, and reservation netting; and

(e) List of reservations from OASIS that should not be considered in ATC/AFC calculations.

4.1.4.3 Available Flowgate Capability Data. Each Party shall meet a minimum periodicity for calculating and making available AFCs to the other Party. The minimum periodicity depends on the service being offered. Each Party shall provide the following AFC data to the other Party:

(a) Hourly for first seven (7) days posted at a minimum, once per hour;

(b) Daily for days eight (8) through thirty-one (31), posted at a minimum, once per day; and

(c) Monthly for months two (2) through eighteen (18), posted at a minimum, twice per month.

4.1.4.4 Load Forecast. The Parties shall exchange the following load forecast data and information:

(a) Hourly for next seven (7) days, daily for days eight (8) through thirty-one (31), and monthly for months two (2) through eighteen (18), submitted once a day;

(b) Identify the origin of the forecast (e.g., identity of RTO, RC, Control Area, etc.);

(c) Indicate whether this forecast includes transmission system losses, and if it does, indicate what the percent losses are;

(d) Identify non-conforming loads;

(e) Indicate how municipal entities, cooperatives, and other entity loads are treated. Indicate whether they are included in the forecast. If so, indicate the total load or net load after removing other entity generation; and

(f) Requirements under Section 5.1.6.

4.1.4.5 Generator Data. The Parties shall exchange the following generator data:

(a) Unit owner, bus location in model;

(b) Seasonal ratings, PMIN, PMAX, QMIN, QMAX;

(c) Station auxiliaries to extent gross generation has been reported;

(d) Regulated bus, target voltage and actual voltage; and

(e) EFOR.

4.1.4.6 Designated Network Resources. The Parties shall exchange the following Designated Network Resource data:

(a) Network Integration Transmission Service Specifications;

(b) Identification of generators that serve as Designated Network Resources;

(c) Indication of treatment as pseudo tie or dynamic/static schedules;

(d) Rules for sharing output between joint owners; and

(e) Transmission arrangements.

4.1.4.7 Control Area Net Interchange from Reservations and Tags. The Parties shall exchange the following data concerning Control Area net interchange from reservations and tags:

(a) Any grandfathered agreements that do not appear in OASIS; and

(b) If tags and reservations can not be used to develop Control Area or zone net interchange, then provide hourly unit commitment information for all generators in the Control Area/zone.

4.1.4.8 Dynamic Schedules. The Parties shall exchange the following data concerning dynamic schedules:

(a) List of dynamic schedules;

(b) Identification of the dynamic schedules are being used to move load into the Control Area or out of the Control Area;

(c) Identification of marginal generation zones; and

(d) Requirements under Section 5.1.11.

4.1.4.9 Controllable Devices. The Parties shall exchange the following controllable devices data:

(a) Phase shifters;

(b) DC lines; and

(c) Back-to-back AC/DC converters.

4.1.4.10 Generation and Transmission Scheduled and Forced Outages. The Parties shall exchange the following data concerning Scheduled Outages of generation and transmission, and forced outages:

(a) Scheduled Outages of generation resources that are planned or forecast, as soon as practicable, including all data specified in Section 5.1.1;

(b) Scheduled Outages of transmission resources that are planned or forecast, as soon as practicable, including all data specified in Section 5.1.3; and

(c) Notification of all forced outages of both generation and transmission resources, not to exceed 30 minutes after they are identified.

4.2 Cost of Data and Information Exchange. Each Party shall bear its own cost of providing the data and information to the other Parties as required under this Article Four and otherwise under this Agreement.

ARTICLE FIVE
TTC/ATC/AFC CALCULATIONS

5.1 TTC/ATC/AFC Protocols. As of the date of this Agreement, the Parties use the NERC SDX System to exchange the planned status of all generators rated greater than 50 MW, Scheduled Outages of all interconnections and other transmission facilities, and peak load forecasts subject to NERC SDX Data Exchange Requirements. This system has the capability to house daily data for the next seven (7) days, weekly data for the next month, and monthly data for the next year. The update frequency of the NERC SDX System is once a day. Reporting of forced outages and update of information on a basis more frequent than once a day will be completed using a separate data exchange system. Use of the NERC SDX, development of a separate data exchange system, and associated commitments under this Agreement, will assure the Parties’ ability to make reliable calculations efficiently.

5.1.1 Scheduled Outages of Generation Resources. Each Party shall provide the projected status of generation availability for a minimum of eighteen (18) months, or for a longer period if the information is available. The Parties will update this data no less than once daily for the full posting horizon and more often as required by system conditions. The data will include complete generation maintenance schedules and the most current available generator availability data, such that each Party is aware of each "return date" of a generator from a scheduled or forced outage. At all times, this exchange will include the status of generators rated greater than 50 MW. If the status of a particular generator of equal to or less than 50 MW is used within a Party's TTC/ATC/AFC calculation, the status of this unit shall also be supplied.

5.1.2 Generation Dispatch Order. As necessary to permit a Party to develop a reasonably accurate dispatch for any modeled condition, each Party will provide a typical generation dispatch order or the generation participation factors of all units on an affected Control Area basis. The generation dispatch order will be updated as required by changes in the status of the unit; however, a new generation dispatch order need not be provided more often than prior to each peak load season.

5.1.3 Scheduled Outages of Transmission Resources. Each Party will provide the projected status of Scheduled Outages of transmission facilities for a minimum of eighteen (18) months or more if available. This data shall be updated no less than once daily for the full posting horizon and more often as required by system conditions. The data will include current, accurate, and complete transmission facility maintenance schedules, including the "outage date" and "return date" of a transmission facility from a Scheduled Outage or forced outage. If the status of a particular transmission facility is critical to the determination of TTC and ATC/AFC of a Party, the status of this facility will also be provided.

5.1.4 Transmission Interchange Schedules and Reservations Schedules. Each Party will make available its reservation and interchange schedules, as required to permit accurate calculation of TTC and ATC/AFC values. Due to the high volume of this data, the Parties shall either post this data to a FTP site for downloading by the other Party as required by its own process and schedules, or shall request NERC to modify the IDC to allow for selected interrogation by the Parties.

5.1.5 Reservations.

5.1.5.1 Each Party will make available, on an FTP site, actual transmission reservation information for integration into each Party's TTC/ATC/AFC determination process.

5.1.5.2 Each Party will develop practices for modeling reservations, including external reservations, and netting practices for any allowance of counterflows created by reservations in electrically opposite directions. Each Party will provide the other Party with the procedures developed and implemented to model intra-RTO reservations, reservations on external parties, and reservation netting.

5.1.5.3 Each Party shall create, maintain, and exchange a list of reservations from its OASIS that should not be considered in ATC/AFC calculations. If a

Party does not include a reservation in its own evaluation, the reservation should be excluded in the other Party's analysis.

5.1.6 Load Data. The Parties will exchange peak load data for each period (*e.g.*, daily, weekly, and monthly) in accordance with NERC policies and procedures. Since, by definition, peak load values may only apply to one (1) hour of the period, additional assumptions must be made with respect to load level when not at peak load conditions. For the next seven (7) day horizon, the Parties shall either supply hourly load forecasts, or they shall supply daily peak load forecasts with a load profile. All load forecasts will be provided on a Control Area basis by the applicable transmission provider, RTO, RC, Control Area, or other applicable entity, including total distribution forecast by zones.

5.1.7 Calculated Firm and Non-firm Available Flowgate Capability.

5.1.7.1 "Available Flowgate Capability" ("AFC") is the Available Flowgate Rating, less the projected loading, TRM, and CBM. Firm AFC is calculated with only firm transmission service reservations (or interchange schedules) in the model, including recognition of all roll-over transmission service rights. Non-firm AFC is determined with firm and non-firm reservations (or interchange schedules) modeled.

5.1.7.2 Each Party will respect each other Party's Flowgates as follows. The Parties will utilize data provided under Section 4.1.4.1(e) to facilitate determinations whether transmission service reservations or interchange schedules will impact Flowgates to extents greater than applicable (firm or non-firm) AFC and will abide by the following procedures:

(a) Each Party will accept or reject transmission service requests based upon projected loadings and AFCs applicable to all Parties' Flowgates and all Reciprocal Coordinated Flowgates; and

(b) Each Party will limit approvals of transmission service reservations, including roll-over transmission service, so as to not exceed the lesser of the sum of the thermal or stability capabilities of the tie lines that interconnect the Parties, provided that firm transmission service customers with terms of one year or longer retain the rollover rights and reservation priority granted to them under the applicable Party's OATT or Transmission Service Guidelines, and further provided that if explicitly stated in the applicable service agreement, a Party may limit rollover rights for new long-term firm service if there is not enough AFC/ATC to accommodate rollover rights beyond the initial term.

5.1.8 Exchange of Available Flowgate Ratings. The Parties will exchange (seasonal, normal, and emergency) Available Flowgate Ratings as well as all limiting conditions (thermal, voltage, or stability). The Parties will update this information in a timely manner as required by changes on the transmission system; the Parties acknowledge that these ratings are currently fairly static values and do not currently require frequent updating. Voltage and stability limits need to be periodically manually updated.

5.1.9 Identification of Flowgates. Each Party shall consider in its TTC and ATC/AFC determination process all Flowgates that may initiate a TLR event. As determined in accordance with Section 3 of the CMP, Flowgates that have a response factor equal to or greater than the distribution factor cut-off must be included in the evaluating Party's model to the extent inclusion is practical.

5.1.10 Configuration/Facility Changes (for power system model updates).

5.1.10.1 Transmission configuration changes and generation additions (or retirements) are normally communicated via the NERC MMWG process. The TTC/ATC/AFC determination processes will require that, when changes occur to the transmission network, models used in the TTC/ATC/AFC calculation be updated as soon as practical. Within sixty (60) days after the Effective Date, the Parties will institute a process to ensure that all significant system changes of a neighbor are incorporated in each Party's TTC/ATC/AFC calculation model. Although this information and other detailed data are included in the MMWG cases, this data exchange mechanism will address major changes that should be included in the TTC/ATC/AFC calculation models in a more timely manner.

This type of data change will be similar to the "New Facilities" listings usually included in inter-regional reports; however, explicit modeling information will need to be supplied along with the listing. This data exchange will occur no less often than prior to each peak load season.

5.1.10.2 The Parties agree to exchange TTC/ATC/AFC calculation models of their transmission systems as soon as mechanisms can be established to facilitate this exchange.

5.1.11 Dynamic Schedule Flows. Each Party will provide the other Party with the actual amount and future projection of dynamic schedule flows. All dynamic schedule flows and tags will be submitted in accordance with NERC policy and procedures.

ARTICLE SIX
RECIPROCAL COORDINATION OF FLOWGATES

6.1 Reciprocal Coordination of Flowgates Operating Protocols.

6.1.1 Overview. This overview is background explanation and does not replace, and should not be construed to conflict with, the definitions and procedures set out in this Agreement, including the CMP. This Agreement, including the CMP it incorporates, provides procedures for management of congestion on Flowgates. Each Party shall identify certain Flowgates it administers as Coordinated Flowgates. These are Flowgates across which there are energy flows of one or more Parties, or of one or more Parties, and one or more Third Party Operating Entities, and the flows are of such magnitudes that congestion management under the CMP would enhance reliability.

Reciprocal Coordinated Flowgates are Coordinated Flowgates (and other Flowgates as the Parties may agree) that are subjected to more substantial management, including a formal allocation of Flowgate capability among Operating Entities and their agreement to respect that Allocation. Allocations are based on historical flow levels measured as of a specified "freeze date." These reciprocal coordination procedures, set forth in detail in the CMP, are intended to enhance reliability, and reduce the likelihood of TLR procedures.

In accordance with this Agreement and the CMP, the Parties will specify those CFs which also are RCFs, and the reciprocal coordination procedures of the CMP will apply to such RCFs. The Parties recognize that many Flowgates, both within and outside their respective systems, are affected not only by their own flows, but also by flows of other Operating Entities that are not parties to this Agreement. Allocations of Flowgate capability for these Flowgates can occur equitably, and system reliability can be enhanced, if congestion management includes Allocations among all affected entities. Therefore, under this Agreement, reciprocal coordination of Flowgates can include Third Party Operating Entities when the Third Parties execute a Reciprocal Coordination Agreement with one or more Parties. The CMP will apply to all Reciprocal Coordinated Flowgates the parties designate under the Reciprocal Coordination Agreement.

6.1.2 Definitions. As used in this Article and the CMP:

6.1.2.1 "Coordinated Flowgate" or "CF" shall mean a Flowgate impacted by the flows of a Party as determined by one of the four studies identified in CMP Section 3. A Coordinated Flowgate may be in the footprint of a Party or a Third Party.

6.1.2.2 "Reciprocal Coordinated Flowgate" or "RCF" shall mean a Flowgate that is subject to reciprocal coordination by Operating Entities, under either this Agreement (with respect to Parties only) or a Reciprocal Coordination Agreement between one or more Parties and one or more Third Party Operating Entities. A RCF is:

(1) A CF that is (a) (i) within the operational control of MIDWEST ISO or PJM, or (ii) subject to the supervision of TVA as Reliability Coordinator, and (b) affected by the transmission of energy by two or all Parties; or

(2) A CF that is (a) affected by the transmission of energy by one or more Parties and one or more Third Party Operating Entities, and (b) expressly made subject to CMP reciprocal coordination procedures under a Reciprocal Coordination Agreement between or among such Parties and Third Party Operating Entities; or

(3) A CF that is designated by agreement of all Parties as a RCF.

6.1.3 Obligations to Respect Capability Calculations Applicable to CFs and Allocations Applicable to RCFs. In order to coordinate congestion management proactively, each Party will respect each other Party's determinations of AFC/ATC and calculations of firmness (firm, non-firm, network, non-firm hourly) for real-time operations applicable to the other Party's CFs. Additionally, each Party will respect the Allocations defined by the Reciprocal Allocation Process set forth in the CMP. Due to the provisions of the Tennessee Valley Authority Act, notwithstanding any other provisions of this Agreement, TVA cannot be required to redispatch generation, to the extent that such redispatch involves the sale of energy, to MIDWEST ISO or PJM under any circumstances. Any redispatch provided by TVA shall be provided to eligible Third Parties under separate agreements.

6.1.4 Coordination Process for Reciprocal Coordinated Flowgates. The Parties will establish and finalize the process and timing for exchanging their respective ATC/AFC calculations, and Firm Flow calculations/allocations with respect to all RCFs. The process will allocate Flowgate capability on a future-looking basis, including the allocation of Firm and Non-Firm capability (Priority 7, 6, and 2) for use in both internal dispatch and sale of transmission service. The CMP sets forth the procedure for reciprocal coordination. For any controllable Flowgate, the historically determined Firm Flow on the Flowgate and any allocated rights to that Flowgate under this process are subject to the operating practices of the controllable device. The operating practices of the controllable device will be made available to each Party before a change is made. To the extent the controllable device is able to maintain the schedule across the controllable Flowgate, there are no parallel flows and a historical allocation based on parallel flows will not occur. In this instance, the use of the controllable Flowgate will be limited to entities that have arranged transmission service across the interface formed by the controllable device. To the extent the controllable device cannot maintain the schedule across the controllable Flowgate, there will be a historical allocation based on parallel flows.

6.1.5 Real-Time Operations Process. The Parties' capabilities and real time actions, and those of any Reciprocal Entities, shall be governed by and be in accordance with the CMP.

6.2 Costs Arising From Reciprocal Coordination of Flowgates. Each Party and Reciprocal Entity will bear its own costs, if any, of compliance with the CMP and this Article.

6.3 Transmission Capacity for Reserve Sharing. Each Party shall make transmission capacity available for reserve sharing by either redispatching its Flowgates or holding TRM for generation outages in the other Party's system. The Party responsible for making transmission capacity available for the reserve sharing obligation shall bear its own costs.

6.4 Maintaining Current Flowgate Models. For operations and planning purposes, each Party will maintain a detailed model of those portions of other Parties' systems with respect to which a Party is required to respect another Party's CFs, or with respect to which the Party has received Allocations. On an ongoing basis, each Party will populate its model with credible and current data.

6.5 Combining Contract Path Capacity. The Parties agree to the following approach to reduce or eliminate contract path capacity limits. If two or more Parties have separate contract paths to the same entity, the combined contract path capacities under all such contracts will be made available for use by all Parties to those contracts. Because this procedure is limited to combining contract path capacities that exist under contracts, it will not create, for any Party, any new contract paths, that is, paths that do not exist under a contract. Combining contract path capacity shall give no Party or Third Party any right to circumvent the restrictions set forth in the Federal Power Act, 16 U.S.C. § 824k.

6.6 Improvements; Adoption of Superior Provisions Concerning Allocation. The Parties will collaboratively seek to improve congestion management to enhance efficiency, reliability, cost effectiveness, and equity. If any two Parties enter into an agreement between themselves, or if a Party enters into an agreement with a Third Party, regarding an allocation process for Reciprocal Coordinated Flowgates, and that agreement contains allocation provisions that a Party reasonably deems to be more favorable to the Third Party than the Flowgate allocation provisions of Section 6 of the CMP, then, upon the request of such Party, Section 6 of the CMP shall be amended to incorporate such allocation provisions.

ARTICLE SEVEN
COORDINATION OF SCHEDULED OUTAGES

7.1 Operating Protocols for Coordinating Scheduled Outages. The Parties will jointly develop protocols for coordinating transmission and generation Scheduled Outages to ensure reliability. The Parties agree to the following with respect to transmission and generation Scheduled Outage coordination.

7.1.1 Exchange of Transmission and Generation Scheduled Outage Data. Upon a Party's request, the projected status of generation and transmission availability will be communicated among the Parties, subject to data confidentiality agreements. All available information regardless of scheduled date will be shared. The Parties shall exchange the most current information on proposed Scheduled Outage information and provide a timely response on potential impacts of proposed Scheduled Outages.

The Parties agree that this information will be shared promptly upon its availability, but no less than daily and more often as required by system conditions. The Parties shall jointly develop a common format for the exchange of this information. The information shall include: the owning Party's facility name; proposed Scheduled Outage start date and time; proposed facility return date and time; date and time when a response is needed from the impacted Party to modify the proposed schedule; and any other information that may be relevant to the reliability assessment.

Each Party will also provide information independently on approved and anticipated Scheduled Outages formatted as required for the NERC SDX System.

7.1.2 Evaluation and Coordination of Transmission and Generation Scheduled Outages. The Parties will utilize network applications to analyze planned critical facility maintenance to determine its effects on the reliability of the transmission system. Each Party's Scheduled Outage analysis will consider the impact of its critical Scheduled Outages on the other Party's system reliability, in addition to its own. The analysis will include, as a minimum: an evaluation of contingencies including potential real or reactive power concerns; voltage analysis; and real and reactive power reserve analysis.

On a daily basis, the operations staff of the Parties shall jointly discuss any Scheduled Outages to identify potential impacts. These discussions should include an indication of either concurrence with the Scheduled Outage or identify significant impact due to the Scheduled Outage as scheduled. No Party has the authority to cancel another Party's Scheduled Outage (except transmission facilities interconnecting the two Parties' transmission systems). However, the Parties will work together to resolve any identified Scheduled Outage conflicts. Consideration will be given to Scheduled Outage submittal times and Scheduled Outage criticality when addressing conflicts. If analysis of Scheduled Outages indicates unacceptable system conditions, the Parties will work with one another and the facility owner(s), as necessary, to provide remedial steps to be taken in advance of proposed maintenance. If an operating procedure cannot be developed, and a change to the proposed schedule is necessary based on significant impact, the Parties shall discuss the facts involved, and make every effort to effect the requested schedule change. If this change cannot be accommodated, the Party with the Scheduled Outage shall notify the impacted Party. A request to adjust a proposed Scheduled Outage date must include: identification of the facility(s) overloaded; and identify a similar time frame of more appropriate dates/times for the Scheduled Outage.

The Parties will notify each other of emergency maintenance and forced outages as soon as possible (but not to exceed 30 minutes) after such conditions are identified. The Parties will evaluate the impact of emergency and forced outages on the Parties' systems and work with one another to develop remedial steps as necessary.

Changes to Scheduled Outages, both before or after the work has started, may require additional review. Each Party will consider the impact of these changes on the other Party's system reliability, in addition to its own. The Parties will contact each other as soon as possible if these changes result in unacceptable system conditions, and will work with one another to develop remedial steps as necessary.

ARTICLE EIGHT
PRINCIPLES CONCERNING JOINT OPERATIONS IN EMERGENCIES

8.1 Emergency Operating Principles.

8.1.1 In the event an emergency condition is declared in accordance with a Party's published operating protocols, the Parties will coordinate respective actions to provide immediate relief until the declaring Party eliminates the declaration of emergency. The Parties will notify each other of emergency maintenance and forced outages as soon as possible after the conditions are known. The Parties will evaluate the impact of emergency and forced outages on the Parties' systems and coordinate to develop remedial steps as necessary or appropriate. If the emergency response allows for coordinating with the other Party before action must be taken, the normal procedures for action requests will be followed. The Parties will conduct joint annual emergency drills, and will ensure that all operating staff are trained and certified, if required, and will practice the joint emergency drills that include criteria for declaring an emergency, prioritizing action plans, staffing and responsibilities, and communications.

8.1.2 In furtherance of maintaining system stability, and providing prompt response to problems, the Parties agree that in situations where there is an actual IRL violation and/or the system is on the verge of imminent collapse, and when there exists an applicable emergency principles or operating guide, each Party will allow the affected Party to take immediate steps by modifying the normal procedures for action requests so that the Parties and affected operating entities can communicate and coordinate simultaneously via telephone conference call or other appropriate means. Subsequent to such departures from normal procedures, the requesting Party will prepare a lessons learned report and provide copies thereof to the other Parties and affected operating entities. The purpose of the lesson learned report is to assist in improving operations so that future operations will be more proactive; thereby, avoiding such abnormal communications/procedures.

8.1.3 The Parties will use all applicable emergency principles and operating guides. The Parties will work together and with the Control Areas with respect to which they serve as RTO or Reliability Coordinator, as applicable, to jointly develop and commit to additional emergency principles and operating guides as the need for such procedures arises.

8.1.4 TLR Level 6 may be implemented when, in the judgment of a Party, the system is in an emergency condition that is characterized by the potential, either imminently or for the next contingency, for system instability or cascading, or for equipment loading or voltages significantly beyond applicable operating limits, such that stability of the system cannot be assured, or to prevent a condition or situation that in the judgment of a Party is imminently likely to endanger life or property. In the event that either it becomes necessary for a Party to issue a TLR Level 6 for an area that is in close electrical proximity to any of the Parties' Regions, the affected Parties will either issue a TLR Level 6 or redispatch without declaring a TLR, and take action(s) in kind to address the situation that prompted the TLR. These actions may include:

(a) Curtailment of equivalent amounts of firm point-to-point transactions within the affected Parties;

(b) Redispatching of generation within the affected Parties; and

(c) Load shedding within the affected Parties.

8.1.5 In situations where an actual IRL violation exists, or for the next contingency would exist, and the transmission system is currently, or for the next contingency would be, on the verge of imminent collapse, and there is not an existing emergency principle or operating guide, each Party will receive, and subject to the next two sentences of this Section implement, the instruction of the affected Party, communicate the instruction to the affected entity within its own boundary, or utilize telephone conference call capabilities or other appropriate means of communication to allow simultaneous coordination/communication between the Parties and the affected entity. All occurrences of this kind may be reviewed by any or all Parties after the fact, but the instruction of the affected Party shall be implemented when issued, except a Party may delay implementation in instances where a Party concludes that the requested action will result in a more serious condition on the transmission system, or the requested action is imminently likely to endanger life or property. Financial considerations shall have no bearing on actions taken to prevent the collapse of the transmission system.

8.1.6 In a situation where an SOL violation exists within a Party's Region, or for the next contingency would exist, the Parties will work together as necessary, following Good Utility Practices, and take action in kind as required to address the situation.

8.1.7 To the extent a Party is a RC with respect to Control Areas, the Party will also coordinate in that capacity with the other Parties and, as may be provided under arrangements other than this Agreement, direct emergency action on the part of generation or transmission within such Control Areas to protect the reliability of the network. Each Party shall exercise such authority in accord with Good Utility Practice as required to resolve emergency conditions in another Party's Region of which it is aware and, in conjunction with any applicable stakeholder processes, will develop detailed emergency operating procedures.

8.1.7.1 Power System Restoration. Effective procedures for restoration of the network require coordination and communication at all levels of the Parties' organizations and with their membership. During power system restoration, the Parties will coordinate their actions with each other, as well as with other appropriate entities in order to restore the transmission system as safely and efficiently as possible. In order to enhance the effectiveness of actual restoration operations among the Parties, the Parties will conduct annual coordinated restoration drills. These drills will stress cooperation and communication so that the Parties are positioned to better assist each other mutually in an actual restoration.

8.1.7.2 Joint Voltage Stability Operating Protocol. Voltage stability or collapse problems have the potential to cause cascading outages and therefore must be closely coordinated to maintain reliable operations. The Parties will coordinate their operations in accordance with Good Utility Practice in order to maintain stable voltage profiles throughout their respective Regions. The Parties will coordinate their established daily voltage/reactive management plans. This coordination will serve to assure an adequate static and dynamic reactive supply under a credible range of system dispatch patterns across both Parties' systems and will assure the plans are complementary.

8.1.7.3 Operating the Most Conservative Result. When any one Party identifies an overload/emergency situation that may impact another Party's system and the affected Party's results/systems do not observe a similar situation, the Parties will operate to the most conservative result until the Parties can identify the reasons for these difference(s).

8.2 Costs of Compliance with Emergency Principles and Procedures. In accordance with each Party's OATT, Transmission Service Guidelines, or other agreements, each Party is to bear its own costs of compliance with this Article. Purchases of emergency energy by PJM under this Article in order to address the flow of MIDWEST ISO, or purchases of emergency energy by MIDWEST ISO under this Article in order to address the flow of PJM, shall occur in accordance with the JOA and not this Agreement. Nothing in this Agreement shall require a Party to purchase emergency energy if the Party cannot recover the costs under an OATT, its Transmission Service Guidelines, or other agreement or lawful arrangement. Notwithstanding any other provisions of this Agreement, MIDWEST ISO and PJM acknowledge that TVA cannot sell energy, including emergency energy, to any entity that is not an authorized purchaser under the Tennessee Valley Authority Act. Any such sale shall be provided to eligible Third Parties under separate agreements.

ARTICLE NINE
COORDINATED REGIONAL TRANSMISSION EXPANSION PLANNING

9.1 Joint Planning Committee. The OC shall form, as a subcommittee of the OC, a "Joint Planning Committee" ("JPC"). The JPC shall be, comprised of representatives of the Parties' respective staffs in numbers and functions to be identified from time to time. The JPC shall have a Chairman. The Chairman shall be responsible for: the scheduling of meetings; the preparation of agendas for meetings; the production of minutes of meetings; and for chairing JPC meetings. The Chairman shall serve a one-year calendar term, except that the term of the first Chairman shall commence on the Effective Date and terminate at the end of the calendar year of the Effective Date. The OC shall designate the first Chairman. Thereafter, the right to designate the Chairman shall rotate from Party to Party in the following order: MIDWEST ISO, PJM, and TVA. The JPC shall coordinate planning of the Parties' respective systems under this Agreement, including the following:

9.1.1 Prepare and document detailed procedures for the development of power system analysis models. At a minimum, and unless otherwise agreed, the JPC 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 JPC will coordinate the performance of a detailed review of the appropriateness of applicable power system models.

9.1.2 Conduct, on a regular basis, a Coordinated Regional Transmission Planning Study (CRTPS), as set forth in Section 9.3.4.

9.1.3 Coordinate planning activities under this Article Nine, including the exchange of data under this Article and developing necessary report and study protocols.

9.1.4 Maintain an Internet site and e-mail or other electronic lists for the communication of information related to the coordinated planning process.

9.1.5 Meet at least semi-annually to review and coordinate transmission planning activities.

9.1.6 Establish working groups as necessary to address specific issues, such as the review and development of the regional plans of each Party and localized seams issues.

9.1.7 Establish a schedule for the rotation of responsibility for data management, coordination of analysis activities, report preparation, and other activities.

9.1.8 Schedule and oversee an annual meeting of the Parties' system operations, market operations, and system planning personnel (such personnel as the Parties may designate for the meeting), to review issues associated with these functions that may impact long range planning and the coordination of planning between and among the systems.

9.2 Data and Information Exchange. Each Party shall provide the other Parties with the following data and information. Unless otherwise indicated, such data and information shall be provided annually.

9.2.1 Data required for the development of load flow cases, short-circuit cases, and stability cases, including ten year load forecasts, including all critical assumptions that are used in the development of these cases.

9.2.2 Fully detailed planning models (up to the next ten (10) years) (transmission assessment plans) on an annual basis and monthly updates that reflect system enhancement changes or other changes, as they occur.

9.2.3 The regional plan document produced by the Party, any long-term or short-term reliability assessment documents produced by the Party, and any operating assessment reports produced by the Party.

9.2.4 The status of expansion studies, system impact studies and generation interconnection studies, such that each Party has knowledge that a commitment has been made to a system enhancement as a result of any such studies.

9.2.5 Transmission system maps for the Party's bulk transmission system and lower voltage transmission system maps that are relevant to the coordination of planning between or among the systems.

9.2.6 Contingency lists for use in load flow and stability analyses, including lists of all single contingency events and multiple facility tower line contingencies, as well as breaker diagrams for the portions of the Party's transmission system that are relevant to the coordination of planning between or among the systems.

9.2.7 The timing of each planned enhancement, including estimated completion dates and project mobilization schedules, and indications of the likelihood a system enhancement will be completed and whether the system enhancement should be included in system expansion studies, system impact studies and generation interconnection studies, and all related applications for regulatory approval and the status thereof. This information shall be provided annually and from time to time upon changes in status.

9.2.8 Monthly identification of interconnection requests that have been received and any long-term firm transmission services that have been approved that may impact the operation of a Party's system in a manner that affects another Party's system.

9.2.9 Quarterly, the status of all interconnection requests that have been identified.

9.2.10 Information regarding long-term firm transmission services on all interfaces relevant to the coordination of planning between or among the systems.

9.2.11 Load flow and short-circuit data initially will be exchanged in PSS/E format. To the extent practical, the maintenance and exchange of power system modeling data will be implemented through databases. When feasible, transmission maps and breaker diagrams will be provided in an electronic format agreed upon by the Parties. Formats for the exchange of other data will be agreed upon by the Parties from time to time.

9.3 **Coordinated System Planning.** The Parties shall engage in coordinated system planning to identify expansions or enhancements to transmission system capability that may be needed to maintain reliability and/or improve operational performance. The Parties will coordinate any and all studies required to assure the reliable, efficient, and effective operation of the transmission systems. The Parties will conduct such coordinated planning as set forth below

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 necessary to fulfill its obligations under its applicable OATT, Transmission Service Guidelines, or as it otherwise shall deem appropriate. Such planning shall conform to applicable reliability requirements of NERC, applicable regional reliability councils, and any successor organizations thereto. Such planning shall also conform to any and all applicable requirements of Federal or State regulatory authorities. Each Party agrees to prepare a regional transmission planning report that documents the procedures, methodologies, and business rules utilized in preparing and completing the report. Each Party shall share its annual transmission planning reports and assessments with the other Parties, as well as any information that arises in the performance of such single party planning activities as is necessary or appropriate for effective coordination between the Parties on an ongoing basis.

9.3.2 **Analysis of Interconnection Requests.** In accordance with the procedures under which the Parties provide interconnection service, each Party will coordinate with the other Parties 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. Coordination of studies shall include the following:

9.3.2.1 Upon the posting to the OASIS of a request for interconnection, the Party receiving the request ("direct connect system") will determine whether the other Parties are potentially impacted. If another Party is potentially impacted, the direct connect system will notify such Party and convey the information provided in the posting.

9.3.2.2 If a potentially impacted Party determines that its system may be materially impacted by the interconnection, such Party will contact the direct connect system, and request participation in the applicable interconnection studies. The Parties will coordinate with respect to the nature of studies to be performed to test the impacts of the interconnection on the potentially impacted Party, who will perform the studies. The Parties will strive to minimize the costs associated with the coordinated study process.

9.3.2.3 Any coordinated studies will be performed in accordance with the study timeline requirements of the applicable generation interconnection procedures of the direct connect system. The potentially impacted Party will comply with this schedule.

9.3.2.4 The potentially impacted Party may participate in the coordinated study either by taking responsibility for performance of studies of its system, or by providing input to the studies to be performed by the direct connect system. The study cost estimates indicated in the study agreement between the direct connect system and the interconnection customer, will reflect the costs, and the associated roles of the study participants including the potentially impacted Party. The direct connect system will review the cost estimates submitted by all participants for reasonableness, based on expected levels of participation, and responsibilities in the study.

9.3.2.5 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, no later than thirty (30) days after receipt thereof, to the potentially impacted Party. Upon the reasonable request of a Party, the Parties will make their books and records available to the requesting Party pertaining to such requests for collection and receipt of collected amounts.

9.3.2.6 The direct connect system will identify any transmission infrastructure improvements required as a result of the proposed interconnection.

9.3.2.7 Construction and cost responsibility associated with any transmission infrastructure improvements required as a result of the proposed interconnection shall be accomplished under the terms of the applicable OATT, Transmission Service Guidelines, controlling agreements, and consistent with applicable Federal or State regulatory policy and applicable law.

9.3.2.8 Thermal and reactive impacts associated with circulation and other phenomena that result from interconnection and impact the systems of both Parties will be evaluated in the evaluation of specific requests associated with delivery service.

9.3.2.9 Each Party will maintain a separate interconnection queue. The JPC will maintain a composite listing of interconnection requests for all interconnection projects that have been identified as potentially impacting the systems of any Party. The JPC will post this listing on the Internet site maintained for the communication of information related to the coordinated system planning process.

9.3.3 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. Coordination of studies will include the following:

9.3.3.1 The Parties will coordinate the calculation of ATC values associated with the service, based on contingencies on the systems of each Party that may be impacted by the granting of the service.

9.3.3.2 Upon the posting to the OASIS of a request for service, the Party receiving the request will determine whether another Party is potentially impacted. If another Party is potentially impacted, the Party receiving the request will notify such Party and convey the information provided in the posting.

9.3.3.3 If the potentially impacted Party determines that its system may be materially impacted by granting the service, such Party will contact the Party receiving the request and request participation in the applicable 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. The Parties will strive to minimize the costs associated with the coordinated study process. The JPC will develop screening procedures to assist in the identification of service requests that may impact systems of the Parties other than the Party receiving the request.

9.3.3.4 Any coordinated studies will be performed in accordance with the study timeline requirements of the applicable transmission service procedures of the Party receiving the request. The potentially impacted Party will comply with this schedule.

9.3.3.5 The potentially impacted Party may participate in the coordinated study either by taking responsibility for performance of studies of its system, or by providing input to the studies to be performed by the Party receiving the request. 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 levels of participation and responsibilities in the study.

9.3.3.6 The Party receiving the request will collect from the transmission service customer, and forward to the potentially impacted Party, the costs incurred by the potentially impacted Parties associated with the performance of such studies.

9.3.3.7 The Party receiving the request will identify any transmission infrastructure improvements required as a result of the transmission service request.

9.3.3.8 Construction and cost responsibility associated with any transmission infrastructure improvements required as a result of the transmission service request shall be accomplished under the terms of the applicable OATT, Transmission Service Guidelines, controlling agreements, and consistent with applicable Federal or State regulatory policy and applicable law.

9.3.4 Coordinated Transmission Planning. Each Party agrees to assist in the conduct of the CRTPS as follows:

9.3.4.1 Every three years, the Parties shall conduct a CRTPS. Sensitivity analyses will be performed, as required, during the off years based on a review by the JPC of discrete reliability problems or operability issues that arise due to changing system conditions.

9.3.4.2 The CRTPS shall identify all reliability and expansion issues, and shall propose potential resolutions to be considered by the Parties.

9.3.4.3 Nothing in this Agreement shall obligate any Party in any way to construct, finance, operate, or otherwise support any transmission infrastructure improvements or other transmission-related projects identified in the CRTPS. Any decision to proceed with any transmission infrastructure improvements or other transmission-related projects identified in the CRTPS shall be set forth in a separate agreement executed by the Parties.

9.3.4.4 Nothing in this Agreement shall give any Party any rights to financial compensation due to the impact of another Party's transmission plans, including but not limited to its decisions whether or not to construct any transmission infrastructure improvements or other transmission-related projects identified in the CRTPS

9.3.4.5 Each Party will be responsible for providing the technical support required to complete the analysis for the CRTPS.

9.3.4.6 The JPC will develop the scope and procedure for the CRTPS. The scope of the CRTPS will include evaluations of the transmission systems against reliability criteria, operational performance criteria, and economic performance criteria applicable to each Party.

9.3.4.7 The Parties will use planning models that are developed in accordance with the procedures to be established by the JPC. Exchange of power flow models will be in a format that is acceptable to all Parties.

9.3.4.8 The CRTPS will initially evaluate the reliability of the combined transmission systems.

9.3.4.9 The performance of the combined transmission systems will be tested against agreed upon operational and economic criteria, where applicable, using the updated baseline model.

9.3.4.10 Economic criteria applicable to each Party will be developed by that Party.

9.3.5 Review and Approval Processes. To the extent applicable, each Party shall conduct the necessary stakeholder review and approval process associated with transmission system planning, as required by its OATT or Transmission Service Guidelines, governing agreements, and/or applicable Federal or State regulatory requirements.

ARTICLE TEN
JOINT CHECKOUT PROCEDURES

10.1 Scheduling Checkout Protocols.

10.1.1 Scheduling Protocols. Each Party will leverage technology to perform electronic approvals of schedules, and to perform electronic checkouts, in lieu of telephone calls. The Parties will follow the following scheduling protocols:

10.1.1.1 Each Party, acting as the scheduling agent for its respective Control Areas, will conduct all checkouts with first tier Control Areas. A first tier Control Area is any Control Area that is directly connected to any Party's members' Control Area or any Control Area operated by an independent transmission company.

10.1.1.2 The Parties will require all schedules to be tagged in accord with the NERC tagging standard. For reserve sharing and other emergency schedules that are not tagged, the Parties will enter manual schedules after the fact into their respective scheduling systems to facilitate checkout between the Parties.

10.1.1.3 When there is a scheduling conflict, the Parties will work in unison to modify the schedule as soon as practical. If there is a scheduling conflict that is identified before the schedule has started, then both Parties will make the correction in real-time and not wait until the quarter hour. If the schedule has already started and one Party identifies an error, then the Parties will make the correction at the earliest quarter hour increment. If a scheduling conflict cannot be resolved between the

Parties (but the source and sink have agreed to a MW value), then the Parties will both adjust their numbers to that same MW value. If source and sink are unable to agree to a MW value, then the previously tagged value will stand for both Parties.

10.1.1.4 For entities that do not use the respective Parties' electronic scheduling interfaces, the Parties will contact the non-member first-tier entities by telephone to perform checkouts.

10.1.1.5 The Parties will perform the following types of checkouts:

(a) Pre-schedule (Day-Ahead), daily between 1600 and 2000 hours.

(b) Hourly Before the Fact (Real-Time):

(i) Hourly before the fact checkout includes the verification of import and export totals, and is not limited to net scheduled interchange for Control Areas with the ability to determine such net scheduled interchange. At a future time, the Parties may checkout individual schedules;

(ii) Hourly checkout is performed starting at the half hour and ending at the ramp hour;

(iii) Intra-hour checkout/schedule confirmation will occur as required due to intra-hour scheduled changes.

(c) After the fact (day end) daily starting at 0100 hours.

(d) After the fact (monthly) on a daily month to date basis (usually via email), starting on the first business day of the following month and ending by the tenth (10^{th}) business day of that month.

10.1.1.6 The Parties will require that each of these checkouts be performed with first tier Control Areas. If a checkout discrepancy is discovered, the Parties will use the NERC tag to determine where the discrepancy exists. The Parties will require any entity that conducts business within its Region to checkout with the applicable Party using NERC tag numbers; a special naming convention used by that entity or other naming conventions given to schedules by other entities will not be permitted.

ARTICLE ELEVEN
VOLTAGE CONTROL AND REACTIVE POWER COORDINATION

11.1 Coordination Objectives. Each Party acknowledges that voltage control and reactive power coordination are essential to promote reliability. Therefore, the Parties establish procedures ("Voltage and Reactive Power Coordination Procedures") under this Article by which they shall conduct such coordination.

11.1.1 The Voltage and Reactive Power Coordination Procedures address the following components: (a) procedures to assist the Parties in maintaining a wide area view of interconnection conditions by enhancing the coordination of voltage and reactive levels throughout their respective footprints as transmission providers; (b) procedures to ensure the maintenance of sufficient reactive reserves to respond to scenarios of high load periods, loss of critical reactive resources, and unusually high transfers; and (c) procedures for sharing of data with other neighboring Reliability Coordinators for their analysis and coordinated operation.

11.1.2 The Parties will review the Voltage and Reactive Power Coordination Procedures from time to time to make revisions and enhancements as appropriate to accommodate additional capabilities or changes to industry reliability requirements.

11.2 **Specific Voltage and Reactive Power Coordination Procedures.** The Parties will utilize the following procedures to coordinate the use of voltage control equipment to maintain a reliable bulk power transmission system voltage profile on their respective systems.

11.2.1 Under normal conditions, each Party will coordinate with the owners of the transmission facilities subject to its control, and the Control Areas as necessary and feasible to supply its own reactive load and losses at all load levels.

11.2.2 Voltage schedule coordination is the responsibility of each Party. Generally, the voltage schedule is determined based on conditions in the proximity of generating stations and extra high voltage stations (230 KV facilities and above) with voltage regulating capabilities. Each Party works with its respective owners of transmission facilities and Control Areas to determine adequate and reliable voltage schedules considering actual and post-contingency conditions.

11.2.3 Each Party will establish voltage limits at critical locations within its own system and exchange this information with the other Parties. This information shall include: normal high voltage limits; normal low voltage limits; post-contingency emergency high voltage limits; and post-contingency emergency low voltage limits; and shall identify the voltage limit value (if available) at which load shedding will be implemented.

11.2.4 Each Party will maintain awareness of the voltage limits in the other Party’s area (where the EMS Model includes sufficient detail to permit this) and awareness of outages and potential contingencies that could result in violation of those voltage limits.

11.2.5 The Parties will clearly communicate the level of voltage support needed during pre- or post-contingency conditions requiring voltage and reactive power coordination.

11.2.6 Each Party shall maintain a list of actions that are available to be taken when voltage support is necessary to respond to anticipated or prevailing system conditions.

11.2.7 At least once each calendar quarter, the Parties will exchange voltage schedules and meet and confer to identify system conditions that could impact the schedules and determine adjustments to the schedules, consistent with reliability.

11.2.8 In conjunction with the coordination of Scheduled Outages addressed in Article Seven and the Parties' respective day-ahead reliability analysis processes, the Parties will coordinate the impact of outages and system conditions on the voltage/reactive profile. Coordination will include the following elements:

11.2.8.1 Each Party will review its forecasted loads, transfers, and all information on available generation and transmission reactive power sources at the beginning of each shift.

11.2.8.2 If no reactive problems are anticipated after the review, each Party will operate independently, in accordance with the above stated criteria and any individual system guidelines for the supply of the Party's reactive power requirements.

11.2.8.3 If a Party anticipates reactive problems after the review, it may request joint implementation of reactive support levels under these Voltage and Reactive Power Coordination Procedures, as it deems appropriate to the situation. When a Party calls for a particular level of support to be implemented under these procedures, it or the applicable Control Area must identify the time it will start adjusting its system, the support level it is implementing, and the voltage problem area.

11.2.8.4 If a Party experiences an actual low or high voltage condition after initial reactive support measures are taken, then the emergency reactive support level is implemented for the area experiencing the problem. The Party will also notify applicable Reliability Coordinators as soon as feasible. In addition, the Voltage and Reactive Power Coordination Procedures are to be consulted to determine if further action is necessary to correct an undesirable voltage situation.

11.2.9 The Parties will coordinate the use of voltage control equipment to maintain a reliable bulk power transmission system voltage profile on their systems and surrounding systems. The following procedures are intended to ensure that bulk systems voltage levels enhance system reliability.

11.2.9.1 Each Party has operational or functional control of reactive sources within its system, and will direct adjustments to voltage schedules at appropriate facilities.

(a) Each Party generally will adjust its voltage schedules to best utilize its resources for operation.

(b) If a Party anticipates voltage or reactive problems, it will inform the other Party (operations planning with respect to future day and Reliability Coordinator with respect to same day) of the situation, describe the conditions, and request voltage/reactive support under these Procedures. As a part of the request, the Party must identify the specific area where voltage/reactive support is requested, and provide an estimate of the magnitude and time duration of the request as well as the specific voltage and limit.

(c) The requesting Party will arrange a conference call between the affected Control Areas/transmission owners and the other Parties. The purpose of this call is to ensure that the situation is fully understood, and that an effective operating plan to address the situation has been developed.

(d) Each Party will implement or direct voltage schedule changes requested by the other Party, provided that a Party may decline a requested change if the change would result in equipment violations or reduce the effective operation of its facilities. A Party that declines a requested change must inform the requesting Party that the request cannot be granted and state the reason for denial.

11.2.10 Voltage/Reactive Transfer Limits.

11.2.10.1 Each Party may monitor power transfer on interfaces defined as a Flowgate used to control voltage collapse conditions. In cases where the potential for voltage collapse (or cascading) is identified, prompt voltage support, and generation adjustments are needed. Generation adjustment requests to avoid voltage collapse or cascading conditions must be clearly communicated and implemented promptly. Using these limits the Parties will implement the following real-time coordination:

(a) At 95% of Interface Limit:

(i) A Party, which observes the reading, shall contact the other Parties to discuss whether further analysis is required.

(ii) The Party, owning the applicable Flowgate, will notify other Reliability Coordinators via the Reliability Coordinator Information System (“RCIS”).

(iii) The Parties will conduct a conference call with the affected Control Areas to discuss reactive outputs and/or capabilities.

(iv) The applicable Party will take appropriate actions, which may include redispatching generation and directing schedule curtailments.

(b) Exceeding Interface Limit:

(i) The Party owning the applicable Flowgate will declare an emergency and inform other Reliability Coordinators of the emergency.

(ii) The applicable Party will take immediate action, which may include generation redispatch, ordering immediate schedule curtailments, and if required, load shedding.

11.2.10.2 Where feasible, and if the Parties' EMS models have sufficient detail, each Party will attempt to duplicate the other Parties' power transfer evaluation in order to provide backup limit calculation in the event that the primary Party is unable accurately to determine the appropriate reliability limits.

11.2.10.3 If a new power transfer interface is determined to exist, and detailed modeling does not exist for the interface, the Parties will coordinate to determine how their models need to be enhanced and to determine procedures for coordination in furtherance of the enhancement.

ARTICLE TWELVE
DISPUTE RESOLUTION PROCEDURES

12.1 Dispute Resolution Procedures. The Parties shall attempt in good faith to achieve consensus with respect to all matters arising under this Agreement and to use reasonable efforts through good faith discussion and negotiation to avoid and resolve disputes that could delay or impede a Party from receiving the benefits of this Agreement. These dispute resolution procedures apply to any dispute that arises from a Party's performance of, or failure to perform, this Agreement and which the applicable Parties are unable to resolve prior to invocation of these procedures. In the event a dispute arises solely between MIDWEST ISO and PJM, and that dispute also arises under the JOA, this Article shall not apply to the dispute and the dispute resolution provisions of the JOA shall apply.

12.1.1 Step One. In the event a dispute arises, a Party shall give Notice of the dispute to the other Party or Parties to the dispute. Within ten (10) days of such Notice, the OC shall meet and the Parties will attempt to resolve the Dispute by reasonable efforts through good faith discussion and negotiation. In addition to a Party's OC representative, a Party shall also be permitted to bring no more than two (2) additional individuals to OC meetings held under this Step One as subject matter experts; however, all such participants must be employees of the Party they represent. In addition, each Party may bring no more than two (2) attorneys.

12.1.2 Step Two. In the event the OC is unable to resolve the dispute under Step One within twenty (20) days of the giving of Notice as provided under Section 12.1.1, and only in such event, a Party shall be entitled to invoke Step Two. A Party may invoke Step Two by giving Notice thereof to the OC no later than thirty (30) days after the meeting of the OC under Step One. **IF A PARTY DOES NOT INVOKE STEP TWO WITHIN SUCH THIRTY (30)-DAY PERIOD, IT WILL BE DEEMED TO HAVE WAIVED ITS RIGHTS WITH RESPECT TO THE DISPUTE, AND SHALL BE PRECLUDED FROM PURSUING ITS RIGHTS OR DEFENDING UNDER STEP TWO OR STEP THREE.** In the event a Party invokes Step Two, the OC shall, in writing, and no later than five (5) days after receipt of the Notice, refer the dispute in writing for consideration to the officers of highest authority of the applicable Parties. Such officers shall meet in person no later than fourteen (14) days after such referral, and shall make a good faith effort to resolve the dispute. The Parties shall exchange written position papers concerning the dispute no later than forty-eight (48) hours in advance of such meeting. In the event the Parties fail to resolve the dispute under Step Two, any one of the disputing Parties shall be entitled to invoke Step Three.

12.1.3 Step Three. After completion of Steps One and Two, any Party to the dispute shall have the right to file, with respect to the dispute, an action only in the United States District Court for the District of Columbia, except as provided below, and each Party submits itself to the personal jurisdiction of such Court. The Parties agree that in any such action, each Party to the dispute will stipulate to have a United States Magistrate Judge conduct any and all proceedings in the litigation in accordance with 28 U.S.C. § 636(c), and Fed. R. Civ. P. 73, and shall waive any right to a trial of the dispute by jury. The decision of the Magistrate Judge shall be final and binding on the disputing Parties, and not subject to appeal, and any Party to the dispute may seek to enforce the decision, and any resulting order or judgment by judicial proceedings. In the event the United States District Court dismisses the action for lack of subject matter jurisdiction, and notwithstanding the foregoing, a Party may file an action in any court with jurisdiction in order to obtain a resolution of the dispute, and any right of any Party to the dispute to trial of the action by jury shall be waived.

12.1.4 Exceptions. In the event of disputes involving Confidential Information, infringement or ownership of Intellectual Property or rights pertaining thereto, or any dispute where a Party seeks temporary or preliminary injunctive relief to avoid alleged immediate and irreparable harm, the procedures stated in this Article shall apply, but shall not preclude a Party from seeking such temporary or preliminary injunctive relief. If a Party seeks such judicial relief but fails to obtain it, the Party seeking such relief shall pay the reasonable attorneys' fees and costs of the other Party or Parties incurred with respect to opposing such relief.

ARTICLE THIRTEEN
RETAINED RIGHTS OF PARTIES

13.1 Parties Entitled to Act Separately. This Agreement does not create or establish, and shall not be construed to create or establish, any partnership or joint venture between or among any of the Parties. This Agreement establishes terms and conditions solely of a contractual relationship, among independent entities, to facilitate the achievement of the joint objectives described in the Agreement. The contractual relationship established hereunder implies no duties or obligations among the Parties except as specified expressly herein. All obligations hereunder shall be subject to, and performed in a manner that complies with each Party's internal requirements; provided, however, this sentence shall not limit any payment obligation, or indemnity obligation under Section 16.3.

ARTICLE FOURTEEN
EFFECTIVE DATE, IMPLEMENTATION, TERM AND TERMINATION

14.1 Effective Date; Implementation. This Agreement shall become effective on the date it is executed by all Parties ("Effective Date"). All data exchange provided hereunder that, prior to the Effective Date, was occurring under the Data Exchange Agreement Among and Between Tennessee Valley Authority, the Midwest Independent Transmission System Operator, Inc., and PJM Interconnection, L.L.C., dated on or about May 20, 2004, shall continue without interruption. Commencing with the Effective Date, the Parties shall commence and continue efforts to implement other provisions of this Agreement on dates determined by the OC, which dates shall be the earliest dates reasonably feasible for all Parties but none of which are expected to be earlier than June 1, 2005.

14.2 Term. This Agreement shall continue in full force and effect for a term of ten (10) years, and shall continue year to year thereafter, unless terminated earlier in accordance with the provisions of this Agreement.

14.3 Right of a Party to Terminate.

14.3.1 TVA may terminate this Agreement with respect to MIDWEST ISO, PJM, or both, at any time upon not less than twelve (12) months' Notice to both MIDWEST ISO and PJM.

14.3.2 MIDWEST ISO may terminate this Agreement with respect to both PJM and TVA at any time upon not less than twelve (12) months' Notice to both PJM and TVA.

14.3.3 PJM may terminate this Agreement with respect to both MIDWEST ISO and TVA at any time upon not less than twelve (12) months' Notice to both MIDWEST ISO and TVA.

14.3.4 Any Party may terminate this Agreement in accordance with Section 14.4, 14.5, or 14.6.

14.4. Termination Due to Regulatory Action. In the event that FERC, or any person, takes any action to subject TVA or TVA's activities under this Agreement to FERC's jurisdiction under the Federal Power Act, any Party may terminate this Agreement upon thirty (30) days' Notice.

14.5 Termination Due To FERC Modification. The Parties subject to jurisdiction of the FERC under the Federal Power Act have concluded that this Agreement need not be filed with FERC under the Federal Power Act and its implementing regulations. To any extent that FERC, any other administrative or judicial body, or any other person requires this Agreement to be filed with FERC for acceptance and approval, any Party may terminate this Agreement upon thirty (30) days' Notice if FERC makes any modifications to the provisions of this Agreement.

14.6 Change in NERC. This Agreement is premised on the existence of NERC, and the applicability of NERC definitions, policies, and procedures. To the extent that NERC ceases to exist in its current form, and/or is replaced with an entity with authority for reliability over the transmission systems of the Parties, the Parties shall promptly meet to determine whether to revise this Agreement to reflect the new reliability entity and the Parties' obligations in light of the authority of the new reliability entity or to terminate this Agreement.

14.7 Survival. The applicable provisions of this Agreement shall continue in effect after any termination of this Agreement to provide for adjustments and payments under Article Twelve, dispute resolution, determination and enforcement of liability, and indemnification, arising from acts or events that occurred during the period this Agreement was in effect.

14.8 Post-Termination Cooperation. Following any termination of this Agreement, all Parties shall thereafter cooperate fully and work diligently in good faith to achieve an orderly resolution of all matters resulting from such termination.

ARTICLE FIFTEEN
CONFIDENTIAL INFORMATION

15.1 Definition. The term "Confidential Information" shall mean: (a) all data and information, whether furnished before or after the execution of this Agreement, whether oral, written, or recorded/electronic, and regardless of the manner in which it is furnished, that is marked "Confidential" or "Proprietary" or which under all of the circumstances should be treated as confidential or proprietary; (b) any data or information deemed confidential under some other form of confidentiality agreement or tariff provided to a Party by a generator; (c) all reports, summaries, compilations, analyses, notes, or any other data or information of a Party hereto which are based on, contain, or reflect any Confidential Information; (d) applicable material deemed Confidential Information pursuant to the PJM Data Confidentiality Regional Stakeholder Group; and (e) any data and information which, if disclosed by a transmission function employee of a utility regulated by the FERC to a market function employee of the same utility system, other than by public posting, would violate the FERC's Standards of Conduct set forth in 18 C.F.R. §§ 37.1-37.8 and the Parties' Standards of Conduct on file with the FERC for PJM and MIDWEST ISO and TVA's Standard of Conduct. The Parties agree that Confidential Information constitutes commercially sensitive, and proprietary trade secret information.

15.2 Protection. During the course of the Parties' performance under this Agreement, a Party may receive or become exposed to Confidential Information. Except as set forth herein, the Parties agree to keep in confidence, and not to copy, disclose, or distribute any Confidential Information or any part thereof, without the prior written permission of the issuing Party. In addition, each Party shall ensure that its employees, its agents, its subcontractors, and its subcontractors' employees, and agents to whom Confidential Information is given or exposed, agree to be bound by the terms and conditions contained herein. Each Party shall be liable for any breach of this Article by its employees, its agents, its subcontractors, and its subcontractors' employees and agents.

15.3 Scope. This obligation of confidentiality shall not extend to data and information that, at no fault of a recipient Party, is or was: (a) in the public domain or generally available or known to the public; (b) disclosed to a recipient by a non-Party who had a legal right to do so; (c) independently developed by a Party or known to such Party prior to its disclosure hereunder; and (d) which is required to be disclosed by subpoena, law, or other directive of a Governmental Authority.

15.4 Standard of Care. Each Party shall protect Confidential Information from disclosure, dissemination, or publication. Regardless of whether a Party is subject to the jurisdiction of the FERC under the Federal Power Act, and regardless of whether a Party is a RTO, each Party agrees to restrict access to all Confidential Information to only those persons authorized to view such information: (a) by the FERC's Standards of Conduct, 18 C.F.R. §§ 37.1-37.8 or, if more restrictive, (b) by such Party's board resolutions, tariff provisions, or other internal policies governing access to, and the sharing of, energy market or transmission system information.

15.5 Required Disclosure. If a Governmental Authority requests or requires a Party to disclose any Confidential Information, such Party shall provide the supplying Party with prompt Notice of such request or requirement so that the supplying Party may seek an appropriate protective order or other appropriate remedy or waive compliance with the provisions of this Agreement. Notwithstanding the absence of a protective order or a waiver, a Party shall disclose only such Confidential Information, which it is legally required to disclose. Each Party shall use reasonable efforts to obtain reliable assurances that confidential treatment will be accorded to Confidential Information required to be disclosed.

In response to any Freedom of Information Act (FOIA) request for information received from or relating to a Party which has been designated Confidential Information, TVA shall evaluate the request and determine the applicability of any FOIA exemptions. TVA shall consult with the affected Party regarding the applicability of the FOIA exemptions, including 5 U.S.C. § 552. Pursuant to its responsibilities under the FOIA, TVA must make the final determination regarding whether the information requested is legally exempt from disclosure under the FOIA, and shall notify the affected Party in advance of the release of any Confidential Information as part of the response to a FOIA request.

If a Party is required to disclose any Confidential Information (the Disclosing Party) under this Section, a Party supplying such Confidential Information (the Supplying Party) shall have the right to immediately suspend supplying such Confidential Information to the Disclosing Party. In that event, the Parties shall meet as soon as practicable in an effort to resolve any and all issues associated with the required disclosure of such Confidential Information, and the likelihood of additional disclosures of such Confidential Information. If the Parties are unable to resolve those issues within ten (10) days, notwithstanding Section 14.3, the Supplying Party shall have the right to terminate this Agreement immediately.

15.6 Return of Confidential Information. All Confidential Information provided by the supplying Party shall be returned by the receiving Parties to the supplying Party promptly upon request. Upon termination or expiration of this Agreement, a Party shall use reasonable efforts to destroy, erase, delete, or return to the supplying Party any and all written or electronic Confidential Information. In no event shall a receiving Party retain copies of any Confidential Information provided by a supplying Party.

15.7 Equitable Relief. Each Party acknowledges that remedies at law are inadequate to protect against breach of the covenants and agreements in this Article, and hereby in advance agrees, without prejudice to any rights to judicial relief that it may otherwise have, to the granting of equitable relief, including injunction, in the supplying Party's favor without proof of actual damages. In addition to the equitable relief referred to in this Section, a supplying Party shall only be entitled to recover from a receiving Party any and all gains wrongfully acquired, directly or indirectly, from a receiving Party's unauthorized disclosure of Confidential Information.

ARTICLE SIXTEEN
ADDITIONAL PROVISIONS

16.1 Unauthorized Transfer of Third-Party Intellectual Property. In the performance of this Agreement, no Party shall transfer to another Party any Intellectual Property, the use of which by another Party would constitute an infringement of the rights of any non-Party. In the event such transfer occurs, whether or not inadvertent, the transferring Party shall, promptly upon learning of the transfer, provide Notice to the receiving Party and upon receipt of such Notice the receiving Party shall take reasonable steps to avoid claims and mitigate losses.

16.2 Intellectual Property Developed Under This Agreement. If during the term of this Agreement, the Parties mutually develop any new Intellectual Property that is reduced to writing, the Parties shall negotiate in good faith concerning the ownership and licensing of such Intellectual Property.

16.3 Indemnification. Each Party will defend, indemnify, and hold the other Parties harmless from all actual losses, damages, liabilities, claims, expenses, causes of action, and judgments (collectively, "Losses"), brought or obtained by any non-Party against such Party, only to the extent that such Losses arise directly from:

(a) Gross negligence, recklessness, or willful misconduct of such Party or any of its agents or employees, in the performance of this Agreement, except to the extent the Losses arise (i) from gross negligence, recklessness, willful misconduct or breach of contract or law by another Party or such other Party's agents or employees, or (ii) as a consequence of strict liability imposed as a matter of law upon another Party, or such other Party's agents or employees;

(b) Any claim that such Party violated any copyright, patent, trademark, license, or other intellectual property right of a non-Party in the performance of this Agreement;

(c) Any claim arising from the transfer of Intellectual Property in violation of Section 16.1; or

(d) Any claim that such Party caused bodily injury to an employee of another Party due to gross negligence, recklessness, or willful conduct of such Party.

16.4 Limitation of Liability. Except as set forth in this Article: (a) no Party shall be liable to another Party, directly or indirectly, for any damages or losses of any kind sustained due to any failure to perform its obligations under this Agreement, unless such failure to perform was malicious or reckless; and (b) any liability of a Party to another Party shall be limited to direct damages, and no lost profits, damages to compensate for lost goodwill, consequential damages, or punitive damages shall be sought or awarded.

16.5 Permitted Assignments. This Agreement may not be assigned by any Party except: (a) with the written consent of the non-assigning Parties, which consent may be withheld in such Parties' absolute discretion; and (b) in the case of a merger, consolidation, sale, or spin-off of substantially all of a Party's assets. In the case of a merger, consolidation, sale, reorganization, or spin-off by a Party, such Party shall assure that the successor or purchaser adopts this Agreement, and the other Parties shall be deemed to have consented to such adoption.

16.6 Liability to Non-Parties. Nothing in this Agreement, whether express or implied, is intended to confer any rights or remedies under or by reason of this Agreement on any person or entity that is not a Party or a permitted successor or assign; provided, that nothing in this Section shall affect the rights or obligations of any Reciprocal Entity under a Reciprocal Coordination Agreement.

16.7 Force Majeure. No Party shall be in breach of this Agreement to the extent and during the period that such Party's performance is made impracticable by any unanticipated cause or causes beyond such Party's control, and without such Party's fault or negligence, which may include, but are not limited to, any act, omission, or circumstance occasioned by or in consequence of any act of God, labor dispute, act of the public enemy, war, insurrection, riot, fire, storm or flood, explosion, breakage or accident to machinery or equipment, or curtailment, order, regulation or restriction imposed by a Governmental Authority. Upon the occurrence of an event considered by a Party to constitute a *force majeure* event, such Party shall use reasonable efforts to endeavor to continue to perform its obligations as far as reasonably practicable and to remedy the event, provided that this Section shall not require any Party to settle any strike or labor dispute. A Party claiming a *force majeure* event shall notify the other Parties in writing immediately, and in no event later than forty-eight (48) hours after the occurrence of the *force majeure* event. The foregoing notwithstanding, the occurrence of a cause under this Section shall not excuse a Party from making any payment otherwise required under this Agreement.

16.8 Amendment. No amendment of or modification to this Agreement shall be made or become enforceable except by a written instrument duly executed by all of the Parties.

16.9 Headings. The headings used for the Articles and Sections of this Agreement are for convenience and reference purposes only, and shall not be construed to modify, expand, limit, or restrict the provisions of this Agreement.

16.10 Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be an original, but all of which together will constitute one instrument, binding upon the Parties hereto, notwithstanding that all Parties may not have executed the same counterpart.

16.11 Notices. A notice ("Notice") shall be effective only if in writing and delivered by: hand; reputable overnight courier; United States mail; or telefacsimile. Electronic mail is not effective Notice. Notice shall be deemed to have been given: (a) when delivered to the recipient by hand, overnight courier, or telefacsimile or (b) if delivered by United States mail, on the postmark date. Notice shall be addressed as follows:

PJM:

Jim Hinton
President, Southern Region
PJM Interconnection, L.L.C.
955 Jefferson Avenue
Valley Forge Corporate Center
Norristown, PA 19403-2497
Tel: (610) 666-4377
Fax: (610) 666-4281

MIDWEST ISO:

Stephen G. Kozey
Vice President and General Counsel
Midwest Independent Transmission System Operator, Inc.
701 City Center Drive
Carmel, IN 46032
Tel: (317) 249-5431
Fax: (317) 249-5912

William Phillips
Vice President, Interregional Coordination & Policy
Midwest Independent Transmission System Operator, Inc.
701 City Center Drive
Carmel, IN 46032
Tel: (317) 249-5420
Fax: (317) 249-5703

TVA: Terry Boston
Executive Vice President
Transmission/Power Supply Group
Tennessee Valley Authority
1101 Market Street, MR 3H
Chattanooga, TN 37402-2801
Tel: (423) 751-6000
Fax: (423) 751-8352

A Party may change its designated recipient of Notices, or its address, from time to time, by giving Notice of such change.

16.12 Governing Law. This Agreement and the rights and duties of the Parties relating to this Agreement shall be governed by and construed in accordance with the Federal laws of the United States of America, including but not limited to federal, and general contract law. Subject to Article Twelve (Dispute Resolution).

16.13 Prior Agreements; Entire Agreement. All prior agreements by or among all the Parties relating to the matters contemplated by this Agreement, whether written or oral, are superseded by this Agreement, and shall be of no further force or effect. For the avoidance of doubt, as provided under Section 3.2, this Agreement does not supersede the JOA.

MIDWEST INDEPENDENT TRANSMISSION SYSTEM OPERATOR, INC.
By:

____
James P. Torgerson
President and Chief Executive Officer

PJM INTERCONNECTION, LLC
By:

____
Phillip G. Harris
President and Chief Executive Officer

TENNESSEE VALLEY AUTHORITY
By:

____
Terry Boston
Executive Vice President
Transmission / Power Supply