



This document includes or references all applicable documentation that demonstrates Corn Belt's compliance with the requirements of the NERC standards for an ATC Implementation Document¹.

Corn Belt is a NERC registered Transmission Service Provider and Transmission Operator, and also a member of the Mid-Continent Area Power Pool (MAPP) and observes the *MAPP Policies and Procedures for Transmission Operations*. Corn Belt's OASIS site is located at <http://www.oatioasis.com/CBPC/index.html>.

Corn Belt utilizes the MAPP MTA, which is an OATI WebTrans system specifically modified to accommodate MAPP's requirements for processing of MAPP Member's transmission service request evaluations, and for performing AFC and ATC calculations on the MAPP Member's transmission system for posting on the MAPP Member's OASIS.

Corn Belt obtains Reliability Coordination Services from the MISO, as its Reliability Coordinator for its transmission facilities located in the Eastern Interconnection.

Corn Belt has included the following transmission facilities in the Integrated System (IS) as Basin Electric Power Cooperative leased facilities:

- Wisdom to Osgood 161 kV transmission line – 30.64 miles
- Osgood to Burt 161 kV transmission line – 29.79 miles
- Burt to Hancock 161 kV transmission line – 33.70 miles
- Wisdom to Buena Vista 161 kV transmission line – 32.77 miles
- Buena Vista to Sac County 161 kV transmission line – 9.66 miles
- Hope to Webster 161 kV transmission line – 12.39 miles
- Burt to Hope 161 kV transmission line – 34.61 miles
- Hope substation (161 kV portion only)
- Wisdom substation (161 kV portion only)
- Burt substation (161 kV portion only)
- Osgood substation (161 kV portion only)
- Webster substation (161 kV portion only)
- Hancock substation (161 kV portion only)

Interconnection and transmission service requests utilizing these facilities will need to be submitted to Western, as the IS administrator, pursuant to Western's OATT and LGIP/SGIP, starting on September 1, 2009 at 0000 (CDT). Corn Belt continues to administer its own tariff on the remaining Corn Belt facilities in Western's WAUE Balancing Authority Area on September 1, 2009, and therefore interconnection and transmission service requests on those other Corn Belt facilities will continue to be submitted to Corn Belt.

1. Background

The NERC MOD Standards MOD-001-1 Available Transmission System Capability and MOD-030-02 Flowgate Methodology describe the requirements and details for an Available Transfer Capability Implementation Document (ATCID). NERC MOD Standard MOD-001-1 was NERC Adopted on August 26, 2008 and FERC approved on November 24, 2009 and requires the Transmission Service Provider to prepare and keep current a ATCID that includes processes, procedures, and assumptions used in the determination of Available Flowgate Capability (AFC) and Available

¹ Based on NERC MOD Standards MOD-001-1 "Available Transmission System Capability" and MOD-030-2 "Flowgate Methodology", NERC Adopted August 26, 2008; FERC Approved 11/24/2009

Transfer Capability (ATC) for each Path or Flowgate. NERC MOD Standard MOD-030-02 was NERC Adopted on February 10, 2009 and FERC approved on November 24, 2009 and requires the Transmission Service Provider to include additional information regarding Flowgates in the ATCID. All citations included are from NERC Standards MOD-001-1 and MOD-030-02 with italics added, unless otherwise noted.

The following MOD Standards references require information to be included in the ATCID.

Std	Rqmt	Item
MOD-001-1	R2	Information describing the time frames for AFC calculations.
MOD-001-1	R3	Have an ATCID.
MOD-001-1	R3.1	Information describing how the selected methodology (or methodologies) has been implemented.
MOD-001-1	R3.2	Description of the manner in which the TSP will account for counterflows.
MOD-001-1	R3.2.1	How confirmed Transmission reservations, expected Interchange and internal counterflows are addressed in firm and non-firm ATC or AFC calculations.
MOD-001-1	R3.2.2	Rationale for counterflow accounting specified in R3.2.
MOD-001-1	R3.3	Identity of the TOs and TSPs from which the TSP receives data for use in calculating ATC or AFC.
MOD-001-1	R3.4	Identity of the TSPs and TOs to which the TSP provides data for use in calculating transfer or Flowgate capability.
MOD-001-1	R3.5	A description of the allocation processes used for: Flowgate capability across multiple line/paths, owners, and TSPs for congestion management and seams coordination.
MOD-001-1	R3.6	A description of how generation and transmission outages are considered in transfer or Flowgate capability calculations, including R3.6.1, R3.6.2, and R3.6.3.
MOD-001-1	R3.6.1	The criteria used to determine when an outage that is in effect part of a day impacts a daily calculation.
MOD-001-1	R3.6.2	The criteria used to determine when an outage that is in effect part of a month impacts a monthly calculation.
MOD-001-1	R3.6.3	How outages from other TSPs that cannot be mapped to the Transmission model used to calculate transfer or Flowgate capability are addressed.
MOD-001-1	R6	Defines TTC
MOD-001-1	R7	Describes the assumptions used to calculate AFC
MOD-001-1	R8	Recalculations of ATC
MOD-030-02	R1.	TSP to include info for R1.1 thru R1.2.4
MOD-030-02	R1.1	Criteria used by the TOP to identify sets of Transmission Facilities as Flowgates
MOD-030-02	R1.2	How source and sink for transmission service is accounted for in AFC calculations
MOD-030-02	R1.2.1	Define if source is obtained from POR
MOD-030-02	R1.2.2	Define if sink is obtained from POD
MOD-030-02	R1.2.3	Source/sink or POR/POD identification and mapping to the model
MOD-030-02	R1.2.4	AFC process involves a grouping of generators; therefore, identify how these generators participate in the group.
MOD-030-02	R5.2	Include in the transmission model expected generation and Transmission outages, additions, and retirements within the scope of the model as specified in the ATCID and in effect during the applicable period of the AFC calculation for the Transmission Service Provider's area, all adjacent Transmission Service Providers, and any Transmission Service Providers with which coordination

		agreements have been executed.
MOD-030-02	R6.1.2	Unit commitment and Dispatch Order, to include all designated network resources and other resources that are committed or have the legal obligation to run as specified in the TSP's ATCID.

Std	Rqmt	Item
MOD-030-02	R6.2.2	Unit commitment and Dispatch Order, to include all designated network resources and other resources that are committed or have the legal obligation to run as specified in the TSP's ATCID.
MOD-030-02	R8	When calculating firm AFC for a Flowgate for a specified period, the Transmission Service Provider shall use the following algorithm (subject to allocation processes described in the ATCID): [<i>Violation Risk Factor: To Be Determined</i>] [<i>Time Horizon: Operations Planning</i>] $AFCF = TFC - ETCFi - CBMi - TRMi + PostbacksFi + counterflowsFi$ (see response to MOD-001 R3.5)
MOD-030-02	R9	Allocation processes for congestion management and seams are not used for Non-Firm (see response to MOD-001 R3.5)

Table 1 – Requirements to be included in ATCID

2. Available Transfer Capability Implementation Document (ATCID)

(MOD-001-1 R2). Each Transmission Service Provider shall calculate ATC or AFC values as listed below using the methodology or methodologies selected by its Transmission Operator(s):

R2.1. Hourly values for at least the next 48 hours.

R2.2. Daily values for at least the next 31 calendar days.

R2.3. Monthly values for at least the next 12 months (months 2-13).

2.1. Corn Belt utilizes the MAPP MTA, which is a flow-based OATI webTrans system specifically modified to accommodate MAPP's requirements for processing of MAPP member's transmission service request evaluations. It is also used for performing AFC and ATC calculations on the MAPP member's transmission system for posting on the MAPP member's OASIS. The MAPP MTA calculates AFC values for hourly values, daily values, and monthly values.

(MOD-001-1 R2.1). The MAPP MTA calculates hourly values from the current hour to hour 48.

(MOD-001-1 R2.2). The MAPP MTA calculates daily values from day 2 – day 365.

(MOD-001-1 R2.3). The MAPP MTA calculates monthly values from month 2 – month 24.

(MOD-001-1 R3). Each Transmission Service Provider shall prepare and keep current an Available Transfer Capability Implementation Document (ATCID) that includes, at a minimum, the following information:

M3. The Transmission Service Provider shall provide its current ATCID that contains all the information specified in R3. (R3)

Corn Belt's Available Transfer Capability Implementation Document (ATCID) documentation is contained in this document and is reviewed at least annually. Corn Belt's ATCID is available in its entirety under the ATC Information folder on its public OASIS website at <http://www.oatioasis.com/CBPC/index.html>.

The ATCID document is also available at the following direct link:
<http://www.oatioasis.com/woa/docs/CBPC/CBPCdocs/ATCID.pdf>

2.2. Description of Flowgate Methodology:

(MOD-001-1 R3.1). Information describing how the selected methodology (or methodologies) has been implemented, in such detail that, given the same information used by the Transmission Service Provider, the results of the ATC or AFC calculations can be validated.

Corn Belt has selected to apply the Flowgate Methodology, as described in NERC MOD-030-02, as the calculation methodology for AFC and ATC. The information describing how the Flowgate Methodology has been implemented by Corn Belt is contained in the algorithms for AFC and ATC Firm and Non-Firm Calculations. These algorithms and components used are consistent with those described in the NERC MOD-030. The inputs are listed below and a process flow overview including more details is located at: http://toinfo.oasis.mapp.org/oasisinfo/afc_calculation.pdf

1. Software tools and MAPP MTA inputs:
 - a. WebTrans (MAPP MTA hosted by MAPP) software for ATC/AFC calculations available from OATI <https://www.mmta.oati.com/>. All inputs to the MAPP MTA are described in detail in the *MAPP Policies and Procedures for Transmission Operations*, which can be found at the MAPP OASIS Information Page at <http://toinfo.oasis.mapp.org/oasisinfo/>.
2. Corn Belt Inputs to MAPP MTA:
 - a. Input data associated with Corn Belt's Flowgates in use
 - i. Flowgate monitored/contingency elements and related files.
 - ii. Flowgate definition parameters, as described in the of MAPP Policies and Procedures - Appendix F section 5.2 located on MAPP's OASIS under Business Practices at the following link: <http://toinfo.oasis.mapp.org/oasisinfo/>
 - iii. Flowgate ATC/AFC components
 - b. Input files- POR/POD, Source/Sink and path definitions.
 - c. Dynamic input files
 - i. Corn Belt Tag information for Corn Belt reservations that have NERC E-tags and are scheduled to flow.

Corn Belt Algorithms for AFC and ATC Calculations

The Corn Belt Algorithms for AFC and ATC Firm and Non-Firm Calculations are located under the ATC Information folder on MAPP's OASIS website at http://toinfo.oasis.mapp.org/oasisinfo/afc_calculation.pdf

2.3. Accounting for Counterflow:

(MOD-001-1 R3.2) A description of the manner in which the Transmission Service Provider will account for counterflows including:

R3.2.1. How confirmed Transmission reservations, expected Interchange, and internal counterflow are addressed in firm and non-firm ATC or AFC calculations.

R3.2.2. A rationale for that accounting specified in R3.2.

(MOD-001-1 R3.2) *The description of the manner in which Corn Belt as TSP accounts for counterflows on a Flowgate by including a percentage of each reservation in confirmed and accepted status in the opposite direction.*

(MOD-001-1 R3.2.1) *The description of how confirmed and accepted Transmission reservations, expected Interchange and internal counterflow are addressed in firm and non-firm ATC or AFC calculations is included below:*

1. Firm reservations impact on firm reservations in the opposite direction
2. Firm reservations impact on non-firm reservations in the opposite direction
3. Non-Firm reservations impact on non-firm reservations in the opposite direction

The Flowgate Definition File for Corn Belt's flowgates used in ATC and AFC calculations contains the specific percentages of counterflows assigned for a Flowgate. The Flowgate Definition File is located in MAPP Policies and Procedures - Appendix F on MAPP's OASIS under Business Practices at the following link: <http://toinfo.oasis.mapp.org/oasisinfo/>. The expected Interchange and internal counterflows are addressed by the MAPP MTA in the determination of the ETC values utilized in the AFC calculations as described in detail in Appendix F of the *MAPP Policies and Procedures for Transmission Operations*, which can be found at the MAPP OASIS Information Page at <http://toinfo.oasis.mapp.org/oasisinfo/>.

(MOD-001-1 R3.2.2) *Corn Belt as TSP uses the following rationale for the accounting to set the specific percentages for counterflows on Corn Belt's Flowgates:*

1. Counterflow for impact of Firm and Non-Firm reservations has been set at the default or other specific value as determined by gathering data on historic usage.
2. Counterflow from expected Interchange and the impact of transactions creating internal counterflows is 100% due to including these in the ETC calculations performed by the MAPP MTA and which are then used in AFC calculations.

2.4. Identity of Parties from which Corn Belt Receives Data:

(MOD-001-1 R3.3) *The identity of the Transmission Operators and Transmission Service Providers from which the Transmission Service Provider receives data for use in calculating ATC or AFC.*

Corn Belt receives data via the MAPP MTA from the Transmission Service Providers and Transmission Operators as listed in Table 2 below.

Entity	Functional Area
Midwest ISO (MISO)	Transmission Service Provider
PJM	Transmission Service Provider
Southwest Power Pool (SPP)	Transmission Service Provider

Table 2: Entity Data- from which Corn Belt receives data and to which Corn Belt provides data via the MAPP MTA

Corn Belt receives most of the data through an indirect means by MAPP having access to FTP sites created by the Coordinating Entities. Corn Belt has a coordination agreement (Attachment KK-2) with MISO² for exchange of this specific information and data. The data

² Attachment KK-2 of the MISO Transmission and Energy Markets Tariff (TEMT), Issued by T. Graham Edwards March 4, 2008, Effective June 1, 2008

is imported into the MAPP MTA for use in calculating the ATC/AFC values. The Agreement includes the details of data exchanges.

The MAPP MTA also accesses data from the NERC System Data Exchange (SDX) as part of the data exchanges in these Agreements, which is one of the methods used by TSP's and TOP's to exchange load forecast and outage data.

Corn Belt and MAPP also receives base case modeling data from various groups, and from other MAPP Transmission Owners/Operators associated with development of transmission load flow models which may be used as or used to derive the base case model used in Corn Belt's AFC calculation and the MAPP MTA. These groups include MMWG, ERAG, and IDC.

2.5. Identity of Parties to which Corn Belt Provides Data:

(MOD-001-1 R.3.4) The identity of the Transmission Service Providers and Transmission Operators to which it provides data for use in calculating transfer or Flowgate capability.

Corn Belt provides data to the Transmission Service Providers and Transmission Operators as listed in the Table 2 above through the MAPP MTA.

The MAPP MTA provides for exchanges of most of the information and data via a secure FTP site that is only accessible by the Coordinating Entities by permission granted by MAPP, and described in detail in Appendix F of the *MAPP Policies and Procedures for Transmission Operations*, which can be found at the MAPP OASIS Information Page at <http://toinfo.oasis.mapp.org/oasisinfo/>.

Corn Belt schedules generation outages through its agreement with BEPC as generator operator. To schedule a same-day generator outage, or for a forced generator outage Corn Belt contacts WAPA directly as the BA. WAPA as the BA provides the generator and transmission outage data to the NERC System Data Exchange (SDX) as part of the data exchanges in these Agreements, which is one of the methods used by TSP's and TOP's to exchange load forecast and outage data.

Corn Belt also provides base case modeling data to various groups and to other MAPP Transmission Operators/Owners associated with development of transmission load flow models which may be used as or used to derive the base case model used in Corn Belt's AFC calculation. These groups include MMWG, ERAG, and IDC.

Corn Belt also provides telemetered real-time data to the MISO in its current role as Corn Belt's Reliability Coordinator for Corn Belt's transmission system facilities in the Eastern Interconnection.

2.6. Description of the Allocation Processes:

(MOD-001-1 R3.5) A description of the allocation processes listed below that are applicable to the Transmission Service Provider:

- *Processes used to allocate transfer or Flowgate capability among multiple lines or sub-paths within a larger ATC Path or Flowgate.*
- *Processes used to allocate transfer or Flowgate capabilities among multiple owners or users of an ATC Path or Flowgate.*
- *Processes used to allocate transfer or Flowgate capabilities between Transmission Service Providers to address issues such as forward looking congestion management and seams coordination.*

Corn Belt does not allocate transfer or Flowgate capability among multiple lines or sub-paths within a larger ATC Path or Flowgate.

Corn Belt as TSP has processes that are part of the FERC approved Congestion Management Process (CMP) that is used to allocate transfer or Flowgate capabilities between Transmission Service Providers to address issues such as forward-looking congestion management and seams coordination. The MAPP MTA implements the Congestion Management Process based upon Corn Belt's agreement with MISO (Attachment KK-2)³ allocates Flowgate capabilities between Corn Belt and the MISO, and also transmission service providers based upon reciprocity arrangements to the extent that these other transmission service providers have common Reciprocally Coordinated Flowgates with MAPP and/or the MISO. The Congestion Management Process appears in the CMP Master Document included as Attachment LL in MISO's Open Access Transmission Tariff.

Section 6 of the CMP Master Document thoroughly describes the application of Available Share of Total Flowgate Capability (ASTFC) to the transmission service process. The methodology is described in several sub-sections in the application of impact determination, allocations amongst the entities, and determination of what remains available for sale of service (ASTFC). Section 6.6 contains an example of an ASTFC calculation, and further describes how service is limited by either AFC or ASTFC as appropriate. AFC is calculated for all flowgates even if the sale of transmission service is limited by ASTFC. Specific Coordinating Agreements between the other potential reciprocal entities such as between MISO, PJM and SPP are available from those entities.

2.7. Description of How Outages are Considered

(MOD-001-1 R3.6) *A description of how generation and transmission outages are considered in transfer or Flowgate capability calculations, including:*

R3.6.1. *The criteria used to determine when an outage that is in effect part of a day impacts a daily calculation.*

R3.6.2. *The criteria used to determine when an outage that is in effect part of a month impacts a monthly calculation.*

R3.6.3. *How outages from other Transmission Service Providers that cannot be mapped to the Transmission model used to calculate transfer or Flowgate capability are addressed.*

(MOD-001-1 R3.6) Corn Belt considers the generation and transmission outage data as valid outages in transfer or Flowgate capability calculations as follows: Each hour, generation and transmission outages are downloaded from the NERC SDX by the MAPP MTA and considered valid outages and included in the AFC calculations.

(MOD-001-1 R3.6.1) – All valid internal and external generation and transmission outages active during any portion of the day and regardless of impacts are included in the daily AFC calculations.

(MOD-001-1 R3.6.2) - All valid internal and external generation and transmission outages active during any portion of the month and regardless of impacts are included in the monthly AFC calculations. The AFCs are calculated for the entire

³ Ibid.

Planning Horizon and the daily AFC results are aggregated and posted on a calendar month basis to meet posting requirements.

(MOD-001-1 R3.6.3) - Outages from other Transmission Service Providers that meet criteria under MOD-001-R3.6 above that cannot be mapped to the Transmission model are not used to calculate AFC or Flowgate capability. The MAPP MTA utilizes the current IDC model and outages from the NERC SDX. Therefore, if the outages cannot be mapped, the outages are not compatible with the topology or modeling in the current IDC model, and will need to be corrected either through a revised SDX posting of the outage, or updates to the base power flow models utilized for the IDC model. These incompatibilities will be noted to the appropriate modeling group for consideration during the next model update, as needed.

2.8. TTC Definition

(MOD-001-1 R6) *When calculating Total Transfer Capability (TTC) or Total Flowgate Capability (TFC) the Transmission Operator shall use assumptions no more limiting than those used in the planning of operations for the corresponding time period studied, providing such planning of operations has been performed for that time period.*

The TTC is defined as the seasonal emergency facility rating of the limiting facility. The seasonal emergency facility rating is determined in accordance with the Corn Belt's Transmission Facility Ratings Methodology.

2.9. AFC Calculations Assumptions

(MOD-001-1 R7) *When calculating ATC or AFC the Transmission Service Provider shall use assumptions no more limiting than those used in the planning of operations for the corresponding time period studied, providing such planning of operations has been performed for that time period.*

Corn Belt utilizes MAPP's requirements for adding or removing flowgates as outlined in MAPP Policies and Procedures Appendix F section 5.2.1 which can be found at the MAPP OASIS at <http://toinfo.oasis.mapp.org/oasisinfo/>.

2.10. Recalculations of ATC

(MOD-001-1 R8) *Each Transmission Service Provider that calculates ATC shall recalculate ATC at a minimum on the following frequency, unless none of the calculated values identified in the ATC equation have changed:*

R.8.1. Hourly values, once per hour, Transmission Service Providers are allowed up to 175 hours per calendar year during which calculations are not required to be performed, despite a change in a calculated value identified in the ATC equation.

R.8.2 Daily values, once per day.

R.8.3. Monthly values, once per week.

(MOD-001-1 R8.1) Corn Belt uses the MAPP MTA to calculate the hourly values once per hour.

(MOD-001-1 R8.2) Corn Belt uses the MAPP MTA to calculate the daily values twice per day.

(MOD-001-1 R8.3) Corn Belt uses the MAPP MTA to calculate the monthly values twice per day.

3. Flowgate Methodology MOD-030-2

3.1. Criteria to Identify Flowgates:

(MOD-030-2 R1) *The Transmission Service Provider shall include in its “Available Transfer Capability Implementation Document” (ATCID): [Violation Risk Factor: To Be Determined] [Time Horizon: Operations Planning]*

R1.1. *The criteria used by the Transmission Operator to identify sets of Transmission Facilities as Flowgates that are to be considered in Available Flowgate Capability (AFC) calculations.*

MAPPCOR with assistance from Corn Belt in compliance with MOD-030-02 performs a flowgate Identification Study which is used to identify CBPC transmission facilities to be included as flowgates in the AFC process. The study evaluates impacts on the CBPC transmission facilities by simulating transfers between CBPC and adjacent BAs.

For Outage Transfer Distribution Factor (“OTDF”) flowgates, the TTC is defined as the seasonal emergency facility rating of the limiting facility. The seasonal emergency facility rating is determined in accordance with the Corn Belt’s Transmission Facility Ratings Methodology (as posted on Corn Belt’s OASIS page).

For OTDF flowgates, the TTC is only dependent on the facility rating. Load levels, generation dispatch and planned and contingency outages are not considered in determining the TTC.

For Power Transfer Distribution Factor (“PTDF”) flowgates where the limiting phenomenon is stability related, the TTC is defined as the flow on the monitored facilities above which the limiting phenomenon no longer meets criteria.

For PTDF flowgates where the limiting phenomenon is stability related, in accordance with MAPP practice, load levels for the entire MAPP area are modeled at 100% and 85% of peak summer load for summer studies and 100% and 90% of peak winter loads for winter studies. Load levels internal to the stability limited NDEX and other non-Corn Belt owned interdependent northern MAPP flowgates are modeled according to MAPP practice for stability simulations. Such modeling of load levels is appropriate for stability simulations because load can be a damping influence on angular instability. Generators in the electrical vicinity of the stability issue are typically dispatched at their maximum outputs in order to provide for a high level of acceleration power to appropriately analyze angular instability. Planned and contingency outages are analyzed in accordance with Corn Belts Transmission Planning Criteria (as posted on Corn Belt’s OASIS).

For PTDF flowgates where the limiting phenomenon is voltage angle related, the TTC is dependent on the relative interaction between the voltage differential across an open breaker and the resultant generator shaft torque response relative to the maximum safe limits of the generator. Generation dispatch may be a significant factor with respect to the critical generator (in terms of the generator most sensitive to a delta power fluctuation in excess of its maximum safe shaft torque) and other generators electrically near the critical

generator. The critical generator is dispatched at its minimum dispatch level in the power flow simulations because that is the appropriate assumption for a delta power analysis. To the extent that other marginal generators (generators that may or may not be on-line in real-time due to their dispatch costs) are on-line in the base case models, such generators are either taken off-line or dispatched down to minimum output. This assumption results in the critical machine participating to a greater extent in the delta power analysis. Planned and contingency outages are not currently considered in determining the TTC for voltage angle related limitations.

For PTDF flowgates where the limiting phenomenon is thermal loading related, summer load levels are used in the determination of summer season TTC and winter load levels are used in the determination of winter TTC. Generation dispatch is not considered in determining the TTC. Planned and contingency outages of a monitored facility or another facility in the immediate vicinity of a monitored facility are considered in the determination of the TTC. Typically, the posted TTC is based on a system intact (no outages) assumption. During times of outages of facilities near the monitored facilities, the TTC is based on the outage condition.

For flowgates owned by other parties, Corn Belt as a Transmission Service Provider uses the limits provided by that party and uploaded to the MAPP MTA, subject to the terms of the AFC Coordination and Congestion Management Process sections of the applicable agreements between Transmission Service Provider and the other parties, and as outlined in the *MAPP Policies and Procedures for Transmission Operations*, which can be found at the MAPP OASIS Information Page at <http://toinfo.oasis.mapp.org/oasisinfo/>. Corn Belt currently has an agreement with the MISO (Attachment KK-2)⁴, which includes the AFC Coordination and Congestion Management Process, and that provides for reciprocal treatment of the Reciprocally Coordinated Flowgates with other applicable entities such as PJM, and SPP. The MAPP MTA reflects impacts of other entities' reservation impacts as noted in the *MAPP Policies and Procedures for Transmission Operations*, and based upon agreements between MAPP and the external entities.

3.2. Accounting for Source and Sink:

(MOD-030-2 R1.2). *The following information on how source and sink for transmission service is accounted for in AFC calculations including:*

- R1.2.1.** *Define if the source used for AFC calculations is obtained from the source field or the Point of Receipt (POR) field of the transmission reservation.*
- R1.2.2.** *Define if the sink used for AFC calculations is obtained from the sink field or the Point of Delivery (POD) field of the transmission reservation.*
- R1.2.3.** *The source/sink or POR/POD identification and mapping to the model.*
- R1.2.4.** *If the Transmission Service Provider's AFC calculation process involves a grouping of generators, the ATCID must identify how these generators participate in the group.*

(MOD-030-2 R1.2.1) Corn Belt defines that the source used for AFC calculations is obtained from the Source (SOURCE) field of the transmission reservation. The Point of Receipt (POR) field of the transmission reservation is also utilized by the MAPP MTA for the ATC calculation for contract paths, and for service entering the

⁴ Ibid.

MAPP Transmission System as described in Appendix F of the *MAPP Policies and Procedures for Transmission Operations*.

(MOD-030-2 R1.2.2) Corn Belt defines that the sink used for AFC calculations is obtained from the Sink (SINK) field of the transmission reservation. The Point of Delivery (POD) field of the transmission reservation is also utilized by the MAPP MTA for the ATC calculation for contract paths and for service leaving the MAPP Transmission System as described in Appendix F of the *MAPP Policies and Procedures for Transmission Operations*.

(MOD-030-2 R1.2.3) Transmission service reservations from Corn Belt's and non-Corn Belt OASIS sites are utilized for AFC and ATC calculations. The MAPP MTA downloads the transmission reservation information from neighboring transmission service providers every hour. These reservations are incorporated into the MAPP MTA processes conducted every hour that calculate AFCs. Once downloaded, the reservations are run through a reservation scrubber that filters out non-qualifying reservations. Further details of MAPP's filtering and mapping rules can be found in Appendix F in the latest version of the *MAPP Policies and Procedures for Transmission Operations*, which can be found at the MAPP OASIS Information Page at <http://toinfo.oasis.mapp.org/oasisinfo/>. The *MAPP Policies and Procedures for Transmission Operations* are listed under the "Business Practices" area. Corn Belt's source/sink identification and mapping to the model is documented on Corn Belt's OASIS page under the ATC Information link at <http://www.oatioasis.com/CBPC/index.html>.

(MOD-030-2 R1.2.4) Corn Belt's definitions used as Source/Sink in the AFC calculation process include individual and grouping of generators as part of the AFC calculation. Corn Belt's grouping of generators is documented on Corn Belt's OASIS page under the ATC Information link at <http://www.oatioasis.com/CBPC/index.html>.

(MOD-030-2 R5.) *When calculating AFCs, the Transmission Service Provider shall:*
[Violation Risk Factor: To Be Determined] [Time Horizon: Operations Planning]

R5.2. *Include in the transmission model expected generation and Transmission outages, additions, and retirements within the scope of the model as specified in the ATCID and in effect during the applicable period of the AFC calculation for the Transmission Service Provider's area, all adjacent Transmission Service Providers, and any Transmission Service Providers with which coordination agreements have been executed.*

(MOD-030-2 R5.2) – The MAPP MTA utilized by Corn Belt includes in the transmission model developed from the base case and utilized in the MAPP MTA for AFC calculations the expected generation and Transmission outages that are in effect during the applicable period of the AFC calculation for the Transmission Service Provider's area, all adjacent Transmission Service Providers, and any Transmission Service Providers with which coordination agreements have been executed. Outages from these Transmission Service Providers that meet criteria under MOD-001-R3.6 discussed above are included as appropriate.

The MAPP MTA utilizes the NERC IDC model and includes additions and retirements within the scope of the industry models received from the NERC MMWG, ERAG and subsequent IDC model builds, and IDC model monthly updates. These groups determine the appropriate additions and retirements of facilities in the coordinated models from which the MAPP MTA derives the base case used in AFC calculation. The scope of the model used is the MAPP footprint, adjacent areas

covered by Entities with which Corn Belt and other MAPP members have Coordinating Agreements.

(MOD-030-2 R6) *When calculating the impact of ETC for firm commitments (ETCFi) for all time periods for a Flowgate, the Transmission Service Provider shall sum the following: [Violation Risk Factor: To Be Determined] [Time Horizon: Operations Planning]*

R6.1. *The impact of firm Network Integration Transmission Service, including the impacts of generation to load, in the model referenced in R5.2 for the Transmission Service Provider's area, based on:*

R6.1.2. *Unit commitment and Dispatch Order, to include all designated network resources and other resources that are committed or have the legal obligation to run as specified in the Transmission Service Provider's ATCID.*

(MOD-030-2 R6.1.2) – Corn Belt as TSP includes in the WAPA unit commitment and Dispatch Order, all designated network resources and other resources that are committed or have the legal obligation to run in the IS transmission system. The MAPP MTA performs generation to load impact calculations in the determination of the AFCs on flowgates based upon the generation dispatch order files provided by Corn Belt for its resources. The generation dispatch order file is updated on an annual basis.

(MOD-030-2 R6) *When calculating the impact of ETC for firm commitments (ETCFi) for all time periods for a Flowgate, the Transmission Service Provider shall sum the following: [Violation Risk Factor: To Be Determined] [Time Horizon: Operations Planning]*

R6.2. *The impact of any firm Network Integration Transmission Service, including the impacts of generation to load in the model referenced in R5.2 and has a distribution factor equal to or greater than the percentage used to curtail in the Interconnection-wide congestion management procedure used by the Transmission Service Provider, for all adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed based on:*

R6.2.2. *Unit commitment and Dispatch Order, to include all designated network resources and other resources that are committed or have the legal obligation to run as specified in the Transmission Service Provider's ATCID.*

(MOD-030-2 R6.2.2) – Corn Belt as TSP includes in the WAPA unit commitment and Dispatch Order, all designated network resources and other resources that are committed or have the legal obligation to run in the IS transmission system. The MAPP MTA performs generation to load impact calculations in the determination of the AFCs on flowgates based upon the generation dispatch order files provided by Corn Belt for its resources. The generation dispatch order file is updated on an annual basis.

4. Questions- Contact

If you have any questions please contact:
Engineering and System Operations Department
Corn Belt Power Cooperative
1300 13th Street North
P.O. Box 508

Humboldt, IA 50548
(515) 332-2571