

**Compliance Questionnaire and**

**Reliability Standard Audit Worksheet**

**MOD-028-2 — Area Interchange Methodology**

**Registered Entity:**  *(Must be completed by the Compliance Enforcement Authority)*

**NCR Number:**  *(Must be completed by the Compliance Enforcement Authority)*

**Applicable Function(s):**

Each **TOP** that uses the Area Interchange Methodology to calculate Total Transfer Capabilities (TTCs) for ATC Paths.

Each **TSP** that uses the Area Interchange Methodology to calculate Available Transfer Capabilities (ATCs) for ATC Paths.

**Auditors:**

**Disclaimer**

NERC developed this Reliability Standard Audit Worksheet (RSAW) language in order to facilitate NERC’s and the Regional Entities’ assessment of a registered entity’s compliance with this Reliability Standard. The NERC RSAW language is written to specific versions of each NERC Reliability Standard. Entities using this RSAW should choose the version of the RSAW applicable to the Reliability Standard being assessed. While the information included in this RSAW provides some of the methodology that NERC has elected to use to assess compliance with the requirements of the Reliability Standard, this document should not be treated as a substitute for the Reliability Standard or viewed as additional Reliability Standard requirements. In all cases, the Regional Entity should rely on the language contained in the Reliability Standard itself, and not on the language contained in this RSAW, to determine compliance with the Reliability Standard. NERC’s Reliability Standards can be found on NERC’s website. Additionally, NERC Reliability Standards are updated frequently, and this RSAW may not necessarily be updated with the same frequency. Therefore, it is imperative that entities treat this RSAW as a reference document only, and not as a substitute or replacement for the Reliability Standard. It is the responsibility of the registered entity to verify its compliance with the latest approved version of the Reliability Standards, by the applicable governmental authority, relevant to its registration status.

The NERC RSAW language contained within this document provides a non‑exclusive list, for informational purposes only, of examples of the types of evidence a registered entity may produce or may be asked to produce to demonstrate compliance with the Reliability Standard. A registered entity’s adherence to the examples contained within this RSAW does not necessarily constitute compliance with the applicable Reliability Standard, and NERC and the Regional Entity using this RSAW reserves the right to request additional evidence from the registered entity that is not included in this RSAW. Additionally, this RSAW includes excerpts from FERC Orders and other regulatory references. The FERC Order cites are provided for ease of reference only, and this document does not necessarily include all applicable Order provisions. In the event of a discrepancy between FERC Orders, and the language included in this document, FERC Orders shall prevail.

# Subject Matter Experts

Identify your company’s subject matter expert(s) responsible for this Reliability Standard. Include the person's title, organization, and the requirement(s) for which they are responsible. Include additional sheets if necessary.

**Response: *(Registered Entity Response Required)***

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# Reliability Standard Language

**MOD-028-2 — Available Transmission Capability**

**Purpose:**

To increase consistency and reliability in the development and documentation of Transfer Capability calculations for short-term use performed by entities using Area Interchange Methodology to support analysis and system operations.

**NERC BOT Approval Date: 2/9/2012**

**FERC Approval Date: 7/18/2013**

**Reliability Standard Enforcement Date in the United States: 10/01/2013**

**Question:** As a TOP, do you use the Area Interchange Methodology to Calculate the TTC for ATC paths? As a TSP, do you use the Area Interchange Methodology to Calculate ATC Paths?

If the answer is no, this standard does not apply.

***(Registered Entity Response Required)***

**Requirements:**

1. Each Transmission Service Provider shall include in its Available Transfer Capability Implementation Document (ATCID), at a minimum, the following information relative to its methodology for determining Total Transfer Capability (TTC): *[Violation Risk Factor: Lower] [Time Horizon: Operations Planning]*
   1. Information describing how the selected methodology has been implemented, in such detail that, given the same information used by the Transmission Operator, the results of the TTC calculations can be validated.
   2. A description of the manner in which the Transmission Operator will account for Interchange Schedules in the calculation of TTC.
   3. Any contractual obligations for allocation of TTC.
   4. A description of the manner in which Contingencies are identified for use in the TTC process.
   5. The following information on how source and sink for transmission service is accounted for in ATC calculations including:
      1. Define if the source used for Available Transfer Capability (ATC) calculations is obtained from the source field or the Point of Receipt (POR) field of the transmission reservation
      2. Define if the sink used for ATC calculations is obtained from the sink field or the Point of Delivery (POD) field of the transmission reservation
      3. The source/sink or POR/POD identification and mapping to the model.
      4. If the Transmission Service Provider’s ATC calculation process involves a grouping of generation, the ATCID must identify how these generators participate in the group.

**Question: (R1.5.4)** Does the TSP’s ATC calculation process involve a grouping of generation? If yes, provide evidence the ATCID identifies how these generators participate in the group.

(***Registered Entity Response Required)***

**Describe, in narrative form, how you meet compliance with this requirement:**

***(Registered Entity Response Required)***

# R1 Supporting Evidence and Documentation

**Response: *(Registered Entity Response Required)***

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***This section must be completed by the Compliance Enforcement Authority.***

**Compliance Assessment Approach Specific to MOD-028-2 R1**

\_\_\_ Review the ATCID;

\_\_\_ Verify the entity, at a minimum, has included the following information relative for determining its methodology for determining TTC:

\_\_\_ The information provided describes how the selected methodology has been implemented so that given the same information the TOP can validate the TTC.

\_\_\_ The methodology describes how the TOP will account for Interchange Schedules in the calculation of the TTC.

\_\_\_ The methodology identifies any contractual obligations for the allocation of TTC.

\_\_\_ The methodology describes how Contingencies are identified for use in the TTC process.

\_\_\_ The methodology includes information on how source and sink for transmission service is accounted for in ATC calculations:

\_\_\_ Determine whether the source used for ATC is obtained from the:

\_\_\_ Source field in the transmission reservation.

(or)

\_\_\_ POR field in the transmission reservation.

\_\_\_ Determine if the sink used for ATC calculation is obtained from the:

\_\_\_ Sink field in the transmission reservation.

(or)

\_\_\_ POD field in the transmission reservation.

\_\_\_ Verify the methodology identifies either of the following and is mapped to the model:

\_\_\_ Source/Sink

(or)

\_\_\_ POR/POD

\_\_\_ Verify the ATCID identifies how the generators participate in the group if the response to the applicability question for R1.5.4 was Yes.

**Detailed notes:**

1. When calculating TTC for ATC Paths, the Transmission Operator shall use a Transmission model that contains all of the following: *[Violation Risk Factor: Lower] [Time Horizon: Operations Planning]*
   1. Modeling data and topology of its Reliability Coordinator’s area of responsibility. Equivalent representation of radial lines and facilities 161 kV or below is allowed.
   2. Modeling data and topology (or equivalent representation) for immediately adjacent and beyond Reliability Coordination areas.
   3. Facility Ratings specified by the Generator Owners and Transmission Owners.

**Describe, in narrative form, how you meet compliance with this requirement:**

***(Registered Entity Response Required)***

# R2 Supporting Evidence and Documentation

**Response: *(Registered Entity Response Required)***

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**Compliance Assessment Approach Specific to MOD-028-2 R2**

\_\_\_ Verify when calculating the TTC for ATC paths, the TOP utilized a Transmission model that contained the following:

\_\_\_ Modeling data and topology of its RC’s area of responsibility.

\_\_\_ Modeling data and topology for immediately adjacent and beyond RC Coordination areas.

\_\_\_ Facility ratings specified by the GOs and TOs.

**Detailed notes:**

1. When calculating TTCs for ATC Paths, the Transmission Operator shall include the following data for the Transmission Service Provider’s area. The Transmission Operator shall also include the following data associated with Facilities that are explicitly represented in the Transmission model, as provided by adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
   1. For TTCs, use the following (as well as any other values and additional parameters as specified in the ATCID):
      1. Expected generation and Transmission outages, additions, and retirements, included as specified in the ATCID.
      2. A daily or hourly load forecast for TTCs used in current-day and next-day ATC calculations.
      3. A daily load forecast for TTCs used in ATC calculations for days two through 31.
      4. A monthly load forecast for TTCs used in ATC calculations for months two through 13 months TTCs.
      5. Unit commitment and dispatch order, to include all designated network resources and other resources that are committed or have the legal obligation to run, (within or out of economic dispatch) as they are expected to run.

**Describe, in narrative form, how you meet compliance with this requirement:**

***(Registered Entity Response Required)***

**Question:** Do you have any coordination agreements with other Transmission Service Providers? If yes, provide a list of TSPs you have coordination agreements with.

***(Registered Entity Response Required)***

# R3 Supporting Evidence and Documentation

**Response: *(Registered Entity Response Required)***

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**Compliance Assessment Approach Specific to MOD-028-2 R3**

\_\_\_ (R3.1) Verify the TOP, when calculating the TTC’s for ATC Paths, includes the following data in the Transmission model for the TSP’s area, adjacent TSPs and any other TSPs with coordinating agreements:

\_\_\_ (R3.1.1) Expected generation and transmission outages, additions and retirements included as specified in the ATCID.

\_\_\_ (R3.1.2) A daily or hourly load forecast for TTCs used in current-day and next-day ATC calculations

\_\_\_ (R3.1.3) Daily load forecasts for TTCs used in ATC calculations for days two through 31.

\_\_\_ (R3.1.4) Monthly load forecasts for TTCs used in ATC calculations for months two through 13 TTCs.

\_\_\_ (R3.1.5) Unit commitment and dispatch orders:

\_\_\_ include all designated network resources.

\_\_\_ include other resources which are committed or have legal obligations to run.

**Detailed notes:**

1. When calculating TTCs for ATC Paths, the Transmission Operator shall meet all of the following conditions: *[Violation Risk Factor: Lower] [Time Horizon: Operations Planning]*
   1. Use all Contingencies meeting the criteria described in the ATCID.
   2. Respect any contractual allocations of TTC.
   3. Include, for each time period, the Firm Transmission Service expected to be scheduled as specified in the ATCID (filtered to reduce or eliminate duplicate impacts from transactions using Transmission service from multiple Transmission Service Providers) for the Transmission Service Provider, all adjacent Transmission Service Providers, and any Transmission Service Providers with which coordination agreements have been executed modeling the source and sink as follows:
      * If the source, as specified in the ATCID, has been identified in the reservation and it is discretely modeled in the Transmission Service Provider’s Transmission model, use the discretely modeled point as the source.
      * If the source, as specified in the ATCID, has been identified in the reservation and the point can be mapped to an “equivalence” or “aggregate representation” in the Transmission Service Provider’s Transmission model, use the modeled equivalence or aggregate as the source.
      * If the source, as specified in the ATCID, has been identified in the reservation and the point cannot be mapped to a discretely modeled point, an “equivalence,” or an “aggregate representation” in the Transmission Service Provider’s Transmission model, use the immediately adjacent Balancing Authority associated with the Transmission Service Provider from which the power is to be received as the source.
      * If the source, as specified in the ATCID, has not been identified in the reservation, use the immediately adjacent Balancing Authority associated with the Transmission Service Provider from which the power is to be received as the source.
      * If the sink, as specified in the ATCID, has been identified in the reservation and it is discretely modeled in the Transmission Service Provider’s Transmission model, use the discretely modeled point shall as the sink.
      * If the sink, as specified in the ATCID, has been identified in the reservation and the point can be mapped to an “equivalence” or “aggregate representation” in the Transmission Service Provider’s Transmission model, use the modeled equivalence or aggregate as the sink.
      * If the sink, as specified in the ATCID, has been identified in the reservation and the point cannot be mapped to a discretely modeled point, an “equivalence,” or an “aggregate representation” in the Transmission Service Provider’s Transmission model, use the immediately adjacent Balancing Authority associated with the Transmission Service Provider to which the power is to be delivered as the sink.
      * If the sink, as specified in the ATCID, has not been identified in the reservation, use the immediately adjacent Balancing Authority associated with the Transmission Service Provider to which the power is being delivered as the sink.

**Describe, in narrative form, how you meet compliance with this requirement:**

***(Registered Entity Response Required)***

**Question:** What method(s) do you use to model the source/sink for your Transmission model? (refer to bullets in R4.3)

***(Registered Entity Response Required)***

# R4 Supporting Evidence and Documentation

**Response: *(Registered Entity Response Required***

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***This section must be completed by the Compliance Enforcement Authority.***

**Compliance Assessment Approach Specific to MOD-028-2 R4**

\_\_\_ Verify the TOP, when calculating the TTC’s for ATC Paths, the TOP met the following conditions:

\_\_\_ All Contingencies described in the ATCID were used.

\_\_\_ The contractual allocations of TTC were respected.

\_\_\_ The Firm Transmission Service expected to be scheduled as specified in the ATCID

\_\_\_ For the TSP.

\_\_\_ For all adjacent TSPs.

(and)

\_\_\_ Any TSP which coordination agreements have been executed modeling the source and

sink as follows:

\_\_\_ Verify the TSP used the discretely modeled point in the TSPs in the reservation as the source, if identified in the TSPs Transmission model, as the source.

\_\_\_ The TSP used the modeled equivalence or aggregate representation in the reservation, if identified in the TSPs Transmission model, as the source.

\_\_\_ The TSP used the immediately adjacent BA as the source if the identified source in the reservation cannot be mapped to a discretely modeled point, an equivalence or an aggregated representation in the TSPs Transmission model.

\_\_\_ Verify the TSP used the immediately adjacent BA as the source if the source has not been identified in the reservation.

\_\_\_ Verify the TSP used the discretely modeled point in the TSPs in the reservation as the sink, if identified in the TSPs Transmission model, as the sink.

\_\_\_ The TSP used the modeled equivalence or aggregate representation in the reservation, if identified in the TSPs Transmission model, as the sink.

\_\_\_ Verify the TSP used the immediately adjacent BA as the sink, if the identified sink in the reservation cannot be mapped to a discretely modeled point, an equivalence or an aggregated representation in the TSPs Transmission model.

\_\_\_ Verify the TSP used the immediately adjacent BA as the sink if the sink has not been identified in the reservation.

**Detailed notes:**

1. Each Transmission Operator shall establish TTC for each ATC Path as defined below: *[Violation Risk Factor: Lower] [Time Horizon: Operations Planning]*
   1. At least once within the seven calendar days prior to the specified period for TTCs used in hourly and daily ATC calculations.
   2. At least once per calendar month for TTCs used in monthly ATC calculations.
   3. Within 24 hours of the unexpected outage of a 500 kV or higher transmission Facility or a transformer with a low-side voltage of 200 kV or higher for TTCs in effect during the anticipated duration of the outage, provided such outage is expected to last 24 hours or longer.

**Question: R5.3** Did the TOP have an unexpected outage of a 500 kV or higher transmission facility or a transformer with a low-side voltage of 200 kV or higher which is expected to last 24 hours or longer?

If yes, provide evidence of compliance of establishment of TTC.

(***Registered Entity Response Required)***

**Describe, in narrative form, how you meet compliance with this requirement:**

***(Registered Entity Response Required)***

# R5 Supporting Evidence and Documentation

**Response: *(Registered Entity Response Required)***

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***This section must be completed by the Compliance Enforcement Authority.***

**Compliance Assessment Approach Specific to MOD-028-2 R5**

\_\_\_ Verify the TOP established TTCs for each ATC path as defined below:

\_\_\_ The TOP established TTCs at least once within 7 calendar days prior to the specified period for TTCs used in the hourly and daily ATC calculations.

\_\_\_ The TOP established TTCs once per calendar month for TTCs used in the monthly ATC calculations

\_\_\_ Verify the TOP established TTCs within 24 hours to be in effect during the anticipated duration of the outage if the answer to the applicability question for R5.3 was Yes.

**Detailed notes:**

1. Each Transmission Operator shall establish TTC for each ATC Path using the following process: *[Violation Risk Factor: Lower] [Time Horizon: Operations Planning]*
   1. Determine the incremental Transfer Capability for each ATC Path by increasing generation and/or decreasing load within the source Balancing Authority area and decreasing generation and/or increasing load within the sink Balancing Authority area until either:

* A System Operating Limit is reached on the Transmission Service Provider’s system, or
* A SOL is reached on any other adjacent system in the Transmission model that is not on the study path and the distribution factor is 5% or greater[[1]](#footnote-1).
  1. If the limit in step R6.1 cannot be reached by adjusting any combination of load or generation, then set the incremental Transfer Capability by the results of the case where the maximum adjustments were applied.
  2. Use (as the TTC) the lesser of:
* The sum of the incremental Transfer Capability and the impacts of Firm Transmission Services, as specified in the Transmission Service Provider’s ATCID, that were included in the study model, or
* The sum of Facility Ratings of all ties comprising the ATC Path.
  1. For ATC Paths whose capacity uses jointly-owned or allocated Facilities, limit TTC for each Transmission Service Provider so the TTC does not exceed each Transmission Service Provider’s contractual rights.

**Describe, in narrative form, how you meet compliance with this requirement:**

***(Registered Entity Response Required)***

**Question: R6.4** Do any ATC Paths use jointly-owned or allocated facilities? If Yes, identify the ATC Paths.

***(Registered Entity Response Required)***

# R6 Supporting Evidence and Documentation

**Response: *(Registered Entity Response Required)***

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**Compliance Assessment Approach Specific to MOD-028-2 R6**

\_\_\_ Verify the TOP used the following process to establish TTC for each ATC Path:

\_\_\_ The TOP determined the incremental Transfer Capability for each ATC Path by:

\_\_\_ Increasing generation and/or decreasing load within the source BA

\_\_\_ Decreasing generation and/or increasing load within the sink BA

Until:

\_\_\_ A SOL is reached on the TSP’s system

(or)

\_\_\_ A SOL is reached on any other adjacent system in the Transmission model that is not on the study path and the distribution factor is 5% or greater.

\_\_\_ If the TOP could not reach the limits in 6.1, verify the TOP set the incremental Transfer Capability to the results of the case where the maximum adjustments were applied.

\_\_\_ The TOP used (as the TTC) the lesser of:

\_\_\_ The sum of the incremental Transfer Capability and the impacts of Firm Transmission Services, as specified in the TSPs ATCID, that were included in the study model

(or)

\_\_\_ The sum of Facility Ratings of all ties comprising the ATC Path.

\_\_\_ If the answer to the applicability question for R6.4 is Yes, verify the TTC limited for each TSP does not exceed each TSP’s contractual rights

**Detailed notes:**

1. The Transmission Operator shall provide the Transmission Service Provider of that ATC Path with the most current value for TTC for that ATC Path no more than: *[Violation Risk Factor: Lower] [Time Horizon: Operations Planning]*
   1. One calendar day after its determination for TTCs used in hourly and daily ATC calculations.
   2. Seven calendar days after its determination for TTCs used in monthly ATC calculations.

**Describe, in narrative form, how you meet compliance with this requirement:**

***(Registered Entity Response Required)***

# R7 Supporting Evidence and Documentation

**Response: *(Registered Entity Response Required)***

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***This section must be completed by the Compliance Enforcement Authority.***

**Compliance Assessment Approach Specific to MOD-028-2 R7**

\_\_\_ Verify the TOP provided the TSP the most current value for TTC for that ATC Path no more than:

\_\_\_ One calendar day after its determination for TTCs used in hourly and daily ATC calculations.

\_\_\_ Seven calendar days after its determination for TTCs used in monthly ATC calculations.

**Detailed notes:**

1. When calculating Existing Transmission Commitments (ETCs) for firm commitments (ETCF) for all time periods for an ATC Path the Transmission Service Provider shall use the following algorithm: *[Violation Risk Factor: Lower] [Time Horizon: Operations Planning]*

ETCF = NITSF + GFF + PTPF + RORF + OSF

**Where:**

**NITSF** is the firm capacity set aside for Network Integration Transmission Service (including the capacity used to serve bundled load within the Transmission Service Provider’s area with external sources) on ATC Paths that serve as interfaces with other Balancing Authorities.

**GFF** is the firm capacity set aside for Grandfathered Firm Transmission Service and contracts for energy and/or Transmission Service, where executed prior to the effective date of a Transmission Service Provider’s Open Access Transmission Tariff or safe harbor tariff on ATC Paths that serve as interfaces with other Balancing Authorities.

**PTPF** is the firm capacity reserved for confirmed Point-to-Point Transmission Service.

**RORF** is the capacity reserved for roll-over rights for Firm Transmission Service contracts granting Transmission Customers the right of first refusal to take or continue to take Transmission Service when the Transmission Customer’s Transmission Service contract expires or is eligible for renewal.

**OSF** is the firm capacity reserved for any other service(s), contract(s), or agreement(s) not specified above using Firm Transmission Service, including any other firm adjustments to reflect impacts from other ATC Paths of the Transmission Service Provider as specified in the ATCID.

**Describe, in narrative form, how you meet compliance with this requirement:**

***(Registered Entity Response Required)***

# R8 Supporting Evidence and Documentation

**Response: *(Registered Entity Response Required)***

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***This section must be completed by the Compliance Enforcement Authority.***

**Compliance Assessment Approach Specific to MOD-028-2 R8**

\_\_\_ Verify the TSP used the following algorithm when calculating Existing Transmission Commitments for all time periods:

ETCF = NITSF + GFF + PTPF + RORF + OSF

**Detailed notes:**

**Additional Evidence Reviewed:**

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1. When calculating ETC for non-firm commitments (ETCNF) for all time periods for an ATC Path the Transmission Service Provider shall use the following algorithm: [Violation Risk Factor: Lower] [Time Horizon: Operations Planning]

ETCNF = NITSNF + GFNF + PTPNF + OSNF

**Where:**

**NITSNF** is the non-firm capacity set aside for Network Integration Transmission Service (i.e., secondary service , including the capacity used to serve bundled load within the Transmission Service Provider’s area with external sources) reserved on ATC Paths that serve as interfaces with other Balancing Authorities.

**GFNF** is the non-firm capacity reserved for Grandfathered Non-Firm Transmission Service and contracts for energy and/or Transmission Service, where executed prior to the effective date of a Transmission Service Provider’s Open Access Transmission Tariff or safe harbor tariff on ATC Paths that serve as interfaces with other Balancing Authorities.

**PTPNF** is non-firm capacity reserved for confirmed Point-to-Point Transmission Service.

**OSNF** is the non-firm capacity reserved for any other service(s), contract(s), or agreement(s) not specified above using Non-Firm Transmission Service, including any other firm adjustments to reflect impacts from other ATC Paths of the Transmission Service Provider as specified in the ATCID.

**Describe, in narrative form, how you meet compliance with this requirement:**

***(Registered Entity Response Required)***

# R9 Supporting Evidence and Documentation

**Response: *(Registered Entity Response Required)***

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***This section must be completed by the Compliance Enforcement Authority.***

**Compliance Assessment Approach Specific to MOD-028-2 R9**

\_\_\_ Verify the TSP used the following algorithm for all time periods when calculating Existing Transmission for non firm Commitments:

ETCNF = NITSNF + GFNF + PTPNF + OSNF

**Detailed notes:**

1. When calculating firm ATC for an ATC Path for a specified period, the Transmission Service Provider shall utilize the following algorithm: *[Violation Risk Factor: Lower] [Time Horizon: Operations Planning]*

ATCF = TTC – ETCF – CBM – TRM + PostbacksF + counterflowsF

**Where:**

**ATCF** is the firm Available Transfer Capability for the ATC Path for that period.

**TTC** is the Total Transfer Capability of the ATC Path for that period.

**ETCF** is the sum of existing firm Transmission commitments for the ATC Path during that period.

**CBM** is the Capacity Benefit Margin for the ATC Path during that period.

**TRM** is the Transmission Reliability Margin for the ATC Path during that period.

**PostbacksF­** are changes to firm ATC due to a change in the use of Transmission Service for that period, as defined in Business Practices.

**counterflowsF** are adjustments to firm ATC as determined by the Transmission Service Provider and specified in the ATCID.

**Describe, in narrative form, how you meet compliance with this requirement:**

***(Registered Entity Response Required)***

# R10 Supporting Evidence and Documentation

**Response: *(Registered Entity Response Required)***

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|  | **Provide the following:**  **Document Title and/or File Name, Page & Section, Date & Version** | | |
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| *Audit Team: Additional Evidence Reviewed:* | |  |  | |
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***This section must be completed by the Compliance Enforcement Authority.***

**Compliance Assessment Approach Specific to MOD-028-2 R10**

\_\_\_ Verify the TSP used the following algorithm when calculating firm ATC for an ATC Path for a specific period:

ATCF = TTC – ETCF – CBM – TRM + PostbacksF + counterflowsF

**Detailed notes:**

1. When calculating non-firm ATC for a ATC Path for a specified period, the Transmission Service Provider shall use the following algorithm: *[Violation Risk Factor: Lower] [Time Horizon: Operations Planning]*

ATCNF = TTC – ETCF - ETCNF – CBMS – TRMU + PostbacksNF + counterflowsNF

**Where:**

**ATCNF** is the non-firm Available Transfer Capability for the ATC Path for that period.

**TTC** is the Total Transfer Capability of the ATC Path for that period.

**ETCF** is the sum of existing firm Transmission commitments for the ATC Path during that period.

**ETCNF** is the sum of existing non-firm Transmission commitments for the ATC Path during that period.

**CBMS** is the Capacity Benefit Margin for the ATC Path that has been scheduled without a separate reservation during that period.

**TRMU** is the Transmission Reliability Margin for the ATC Path that has not been released for sale (unreleased) as non-firm capacity by the Transmission Service Provider during that period.

**PostbacksNF**­ are changes to non-firm ATC due to a change in the use of Transmission Service for that period, as defined in Business Practices.

**counterflowsNF**are adjustments to non-firm ATC as determined by the Transmission Service Provider and specified in the ATCID.

**Describe, in narrative form, how you meet compliance with this requirement:**

***(Registered Entity Response Required)***

# R11 Supporting Evidence and Documentation

**Response: *(Registered Entity Response Required)***

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| *Audit Team: Additional Evidence Reviewed:* | |  |  | |
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***This section must be completed by the Compliance Enforcement Authority.***

**Compliance Assessment Approach Specific to MOD-028-2 R11**

\_\_\_ Verify the TSP used the following algorithm when calculating non-firm ATC for an ATC Path for a specific period:

ATCNF = TTC – ETCF - ETCNF – CBMS – TRMU + PostbacksNF + counterflowsNF

**Detailed notes:**

# Supplemental Information

If necessary, provide additional information here that demonstrates compliance with this Reliability Standard. The questions above, if any, may not be all inclusive of evidence required to show compliance. Additional narrative may be provided which displays evidence of compliance with this Reliability Standard.

**Entity** **Response: *(Registered Entity Response)***

# Compliance Findings Summary (to be filled out by auditor)

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| **Req.** | **NF** | **PV** | **OEA** | **NA** | **Statement** |
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**Excerpts from FERC Orders -- For Reference Purposes Only**

**Updated Through August 2010**

**MOD-028-1**

**Order No. 729**

**(November 24, 2009)**

171. The Commission finds that MOD-028-1 and MOD-029-1 fail to address the directive in Order No. 693 to specify how transmission service providers should determine which generators should be modeled in service when calculating available transfer capability.**101** Specifically, the Commission directed the ERO to develop a modification to the Reliability Standards to specify that base generation schedules used in the calculation of available transfer capability will reflect the modeling of all designated network resources and other resources that are committed to or have the legal obligation to run, as they are expected to run, and to address the effect on available transfer capability of designating and undesignating a network resource.

173. The Commission therefore directs the ERO, pursuant to section 215(d)(5) of the FPA and section 39.5(f) of our regulations, to develop a modification to MOD-028-1 and MOD-029-1 to specify that base generation schedules used in the calculation of available transfer capability will reflect the modeling of all designated network resources and other resources that are committed to or have the legal obligation to run, as they are expected to run, and to address the effect on available transfer capability of designating and undesignating a network resource.

231. The Commission understands sub-requirement R2.2 of MOD-028-1 to mean that, when calculating total transfer capability for available transfer capability paths, a transmission operator shall use a transmission model that includes relevant data from reliability coordination areas that are not adjacent. While we believe that the provision is reasonably clear, the Commission agrees that the term “and beyond” could be better explained. Accordingly, pursuant to section 215(d)(5) of the FPA and section 39.5(f) of our regulations, the Commission directs the ERO to develop a modification subrequirement R2.2 pursuant to its Reliability Standards development process to clarify the phrase “adjacent and beyond Reliability Coordination areas.”

234. The Commission believes that, as written, the time frames established in Requirement R5 are just and reasonable because they balance the need to reliably operate the grid with the burden on transmission operators to recalculate total transfer capability even when total transfer capability does not often change. Nevertheless, the Commission agrees that a graduated time frame for reposting could be reasonable in some situations. Accordingly, the ERO should consider this suggestion when making future modifications to the Reliability Standards.

237. The Commission agrees that any distribution factor to be used should be clearly stated in the implementation document, and that to facilitate consistent and understandable results the distribution factors used in determining total transfer capability should be applied consistently. Accordingly, pursuant to section 215(d)(5) of the FPA and section 39.5(f) of our regulations, the Commission directs the ERO to develop a modification to MOD-028-1 pursuant to its Reliability Standards development process to address these two concerns.

**Order No. 729A**

**(May 5, 2010)**

20. In the Final Rule, the Commission did not intend to direct the ERO to necessarily develop a modification to Requirement R8 of MOD-028-1. The ERO may develop a modification to another appropriate requirement of MOD-028-1 to capture the additional specificity required regarding the effect of designating and undesignating a network resource on existing transmission commitments or, as Duke notes, any other relevant component of available transmission capacity. Nevertheless, any modification developed to fulfill this requirement must specify how transmission providers should model base generation dispatch in a consistent manner that includes all designated network resources and other resources that are committed to or have the legal obligation to run, as they are expected to run.

**Order No. 782**

**(July 18, 2013)**

14. Pursuant to section 215(d)(2) of the FPA, we approve Reliability Standard MOD-028-2 as just, reasonable, not unduly discriminatory or preferential, and in the public interest. The Commission also approves NERC’s proposed implementation plan, i.e., that the standard shall become effective on the first day of the first calendar quarter after Commission approval, and retirement of the currently-effective Reliability Standard MOD-028-1. NERC’s clarifying revision to Requirement R3.1.2 of MOD-028-2 allows a transmission operator the flexibility to choose either a daily or hourly load forecast when forecasting current-day and next-day TTC. This revision does not present reliability concerns.

15. In the NOPR, the Commission asked for comment on a potential market-related concern regarding whether a transmission operator using daily on-peak load forecasts in determining off-peak TTC for the current day could, either purposefully or inadvertently, suppress off-peak ATC used by generators that make off-peak sales, or other customers who purchase hourly service. In response to the NOPR, two entities submitted comments, both supporting Commission approval of MOD-028-2. Southern Company Services comments that the flexibility in Requirement R3.1 does not give rise to the potential for undue discrimination in ATC calculations. NERC states that the proposed modification to Reliability Standard MOD-028-2 clarifies the existing language and provides flexibility for operators to select a methodology that best fits their needs. NERC comments that it “expect[s] that entities will implement proposed Reliability Standard MOD-028-2 consistent with their existing legal obligations, i.e., pursuant to open access transmission tariffs, etc.” NERC adds that, “while it might be possible for an entity to use a load forecast assumption that is not applicable to the period being calculated, the Commission can mitigate such risks through complaints and the Commission’s market oversight authority.”

16. We are satisfied that the modification to Requirement R3.1 does not give rise to any immediate market-related concerns in the instant proceeding. No entity filed comments raising the concern that a transmission operator would use a load forecast assumption that is not applicable to the period being calculated. However, we agree with NERC that, consistent with Order No. 729, the risk of a transmission service provider using parameters and assumptions to skew its ATC values can be mitigated through complaints and market oversight authority. In addition, as NERC also acknowledges, transmission operators must implement the revised Reliability Standard MOD-028-2 in a manner consistent with their existing legal obligations, including their obligations under their open access transmission tariffs.

17. Accordingly, pursuant to FPA section 215(d)(2), we approve Reliability Standard MOD-028-2.

**Revision History**

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| --- | --- | --- | --- |
| **Version** | **Date** | **Reviewers** | **Revision Description** |
| 1 | July 2010 | RSAW WG | New Document. |
| 1 | September 2010 | NERC Legal & NERC Compliance | Added regulatory language & reviewed for formatting consistency. |
| 1 | December 2010 | QRSAW WG | Revised Findings Table modified Supporting Evidence tables. |
| 1 | January 2011 | Craig Struck | Reviewed for format consistency and content. |
| 1.1 | October 2013 | RSAW TF | Updated Compliance Assessment Approaches for R1, R3, and R5 based on Version 2 of Reliability Standard. Other minor format changes. |
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1. [↑](#footnote-ref-1)