



# Transmission Reliability Margin Implementation Document (TRMID)

Duke Energy Florida (DEF)

Effective: 04/09/2015

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This document is intended to include or reference all applicable documentation that demonstrates DEF's compliance with NERC standard MOD-008 for TRMID documentation. Duke Energy is the sole Transmission Operator and Transmission Provider for the Duke Energy Balancing Authority Area.

## Standard MOD-008-1 — TRM Calculation Methodology

**R1. Each Transmission Operator shall prepare and keep current a TRM Implementation Document (TRMID) that includes, as a minimum, the following information:**

**R1.1. Identification of (on each of its respective ATC Paths or Flowgates) each of the following components of uncertainty if used in establishing TRM, and a description of how that component is used to establish a TRM value:**

- Aggregate Load forecast.
- Load distribution uncertainty.
- Forecast uncertainty in Transmission system topology (including, but not limited to, forced or unplanned outages and maintenance outages).
- Allowances for parallel path (loop flow) impacts.
- Allowances for simultaneous path interactions.
- Variations in generation dispatch (including, but not limited to, forced or unplanned outages, maintenance outages and location of future generation).
- Short-term System Operator response (Operating Reserve actions).
- Reserve sharing requirements.
- Inertial response and frequency bias.

**R1.2. The description of the method used to allocate TRM across ATC Paths or Flowgates.**

**R1.3. The identification of the TRM calculation used for the following time periods:**

- Same day and real-time.
- Day-ahead and pre-schedule.
- Beyond day-ahead and pre-schedule, up to thirteen months ahead.



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### Intraregional TRM Methodology (FRCC Region)

*Use of TRM: DEF subtracts TRM which is the sum of the three TRM components described below from TTC for all firm transmission postings in all of the time periods listed above for import, export and wheel paths. DEF does not subtract TRM for Transmission Service internal to the DEF Balancing Authority Area. DEF calculates TRM on a per segment basis and DEF ATC paths have multiple FCITC and static segments associated with them. The segment that has the lowest value for a particular path is utilized in the ATC formulas. The TRM associated with the segment that has the lowest value is utilized in the ATC formulas.*

***DEF's per segment TRM is made up of the sum of three components described below. For the case where SOCO (SERC) is the POR a forth component is also added to the TRM per the Interregional TRM Methodology (FRCC - SERC) described below.***

- 1.) *DEF's TRM is based in part upon the short-term operating reserve requirements in accordance with NERC standard MOD-008. DEF is a member of the FRCC Reserve Sharing Group. The operating reserve requirements of DEF and its neighboring interconnected systems in Florida are defined by the FRCC Operating Reserve Policy. FRCC operating reserves are maintained at a level equal to or greater than the loss of generation that would result from the largest single contingency. Each reserve group member is required to maintain their share of operating reserves based on a formula related to peak hour net energy for load and the capability of its largest unit in gross MW. DEF's TRM provides for DEF to reliably call for and provide required operating Reserves.*



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*This static TRM component is applied to FCITC segments that are calculated within The OATI TTC Calculator Software and also static segments such as the sum of tieline facilities limits that are not calculated within the OATI TTC Calculator Software.*

- 2.) *The OATI TTC Calculator Software also calculates a TRM component based on the facility ratings provided by the Transmission Providers. DEF as the Transmission Planner does not utilize this feature of the engine for DEF owned facilities, however if another Transmission Provider's facility is the FCITC limiting facility DEF observes this TRM component. The OATI TTC Calculator Software calculates a FCITC for the B and C facility rating as specified by each Transmission Provider. TRM component 2 is the result of FCITC (c) – FCITC(b), and in the case of a facility with rating C = B which is the case for DEF owned facilities , this TRM component = 0. This is an application of the Allowances for parallel path (loop flow) impacts component of uncertainty described in MOD-008 to observe loop flow caused on other Transmission Provider's facilities. This TRM component is applied only to segments that are calculated within The OATI TTC Calculator Software.*
  
- 3.) *The OATI TTC Calculator Software also calculates a TRM component that is due to forecast uncertainty in Transmission system topology (including, but not limited to, forced or unplanned outages and maintenance outages). DEF utilizes certain switching actions following unplanned outages and simulates this in ITC calculations by including the switching with the associated contingency during the calculations..The OATI TTC Calculator Software calculates a TRM component based on the difference of FCITC values with and without the switching for each contingency that has a switching action associated with it. The switching is not certain and cannot be relied on for every instance because of unplanned system topology and forced outages. This TRM component is applied only to segments that are calculated within The OATI TTC Calculator Software*

### Interregional TRM Methodology (FRCC - SERC)

*The TRM value adopted for the FRCC/SERC Inter-Regional interface is based on the Control Performance metric specified in Requirement 2 of the BAL-001-0 Reliability Standard which is*



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referred to as L10. A FRCC BA's ACE translates directly to variations in the SO/FL interface flows; therefore, since all Florida BA could be drawing their L 10 values simultaneously the TRM for the SO/FL interface is set at the sum of the L10 values for all of the Balancing Areas (BA) within the FRCC Region. This is an application of the Short-term System Operator Response component of uncertainty described in MOD-008 since it deals with operator actions in balancing generation. This TRM value is apportioned between Florida Power and Light, JEA and Duke Energy of Florida in accordance with their allocation arrangements.

### Release of TRM

DEF does not allow TRM to be sold on a firm basis, but does allow for TRM to be sold on a non-firm basis. TRM may be utilized by Load Serving Entities in the DEF Balancing Authority area under the following conditions; (1) Presence of a disturbance (loss of firm resource) resulting in an operating reserve call, and (2) Declaration of an Energy Emergency Alert (EEA) due to insufficient resources.

- R2. Each Transmission Operator shall only use the components of uncertainty from R1.1 to establish TRM, and shall not include any of the components of Capacity Benefit Margin (CBM). Transmission capacity set aside for reserve sharing agreements can be included in TRM.

*Currently there is no need for a CBM on the DEF system since the past and current CBM reservation is zero. Thus DEF does not use CBM as a component of uncertainty to establish its TRM.*

- R3. Each Transmission Operator shall make available its TRMID, and if requested, underlying documentation (if any) used to determine TRM, in the format used by the Transmission Operator, to any of the following who make a written request no more than 30 calendar days after receiving the request.



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- Transmission Service Providers
- Reliability Coordinators
- Planning Coordinators
- Transmission Planner
- Transmission Operators

*DEF Transmission Operator will make available its TRMID by posting it on the publically accessible OASIS and if requested, DEF will make available the underlying TRM documentation to the entities listed above within the 30 day time frame.*

4. **Each Transmission Operator that maintains TRM shall establish TRM values in accordance with the TRMID at least once every 13 months.**

*DEF establishes TRM values in accordance with its TRMID approximately every 7 days.*

- R5. **The Transmission Operator that maintains TRM shall provide the TRM values to its Transmission Service Provider(s) and Transmission Planner(s) no more than seven calendar days after a TRM value is initially established or subsequently changed.**

*Duke Energy posts TRM values on the DEF OASIS for TRM components 1 and 4 within 7 days of a change. DEF provides access to Webtran program for the Transmission Service Provider and Transmission Planner to view TRM components 2 and 3 which are updated at least every 7 days.*

Rev #	Date of Revision	Description of Changes to Document
0	4/1/2011	TRMID Implementation
1	11/2/2012	Update to methodology descriptions
2	03/13/2013	Update to methodology descriptions and revised R5.
3	04/09/2015	Updated Company Name



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