



## **Establish and Communicate System Operating Limits**

TAP-FAC-014 FOR COMPLIANCE WITH:

NERC FAC-014 Reliability Standards

Date: 5/24/2017

Revision 7

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**A) PURPOSE:**

To ensure that System Operating Limits (SOLs) used in the reliable planning and operation of the Bulk Electric System (BES) are determined based on an established methodology or methodologies.

**B) REFERENCES:**

NERC Reliability Standard FAC-014

**C) APPLICABILITY: RC, PA, TP, AND TO.**

**D) REGISTRATION STATUS: TO, TOP, TSP, TP, PA**

**E) PROCEDURE**

APGI-Tapoco is not a Reliability Coordinator; therefore Requirement, R1 is not applicable. APGI-Tapoco's Balancing Authority is Tennessee Value Authority (TVA).

**[FAC-014 R1]**

APGI – Tapoco, as a Transmission Operator, has established SOL's (as directed by its Reliability Coordinator, TVA) for its portion of the Reliability Coordinator Area that are consistent with its Reliability Coordinator's SOL Methodology.

APGI-Tapoco uses the TVA CTR internal portal to coordinate outages and exchange facility information. In addition, APGI-Tapoco dispatchers have a communication protocol with TVA. APGI-Tapoco shall use the methodology set forth by TVA, Reliability Coordinator. APGI-Tapoco has developed operation limits and has shared it with TVA and Smoky Mountain Transmission (SMT) via the TVA CTR portal. Access to the CTR portal is managed by TVA for its RC area.

**[FAC-014 R2]**

APGI – Tapoco, as a Planning Authority, shall establish SOL's, including IROLs, for its Planning Authority Area that are consistent with its SOL Methodology. APGI uses Siemens PSSE software to study the Tapoco system. The PSSE model contains system settings and neighboring utilities system settings. APGI ensures that SOLs are respected when solving the PSSE case. APGI-Tapoco has not identified SOLs or IROLs in its Planning Authority Area. APGI-Tapoco planning authority area consists of two three and one-half mile 161kV transmission lines connected to two 161kV busses used to serve the load of one industrial customer.

**[FAC-014 R3]**

APGI – Tapoco, as a Transmission Planner, shall establish SOL's, including IROLs, for its Planning Authority Area that are consistent with its SOL Methodology. APGI-Tapoco's SOLs are based on thermal limits, Facility Ratings, Transient Stability Ratings, Voltage Stability Ratings, and System Voltage Limit. APGI-Tapoco has not any identified any SOLs. APGI-Tapoco's IROLs methodology is based on the interchange of neighboring utilities. APGI-Tapoco has four ties with TVA, one of which is normally open, and three ties with Smoky Mountain Transmission (SMT). Through the studies of the system, APGI-Tapoco has not identified any IROLs.

**[FAC-014 R4]**

The Reliability Coordinator, Planning Authority, and Transmission Planner shall each provide its SOLs and IROLs to those entities that have a reliability-related need for those limits and provide a written request that includes a schedule for delivery of those limits as follows: **[FAC-014 R5]**

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The Reliability Coordinator shall provide its SOL (including the subset of SOLs that are IROLs) to adjacent Reliability Coordinators and Reliability Coordinators who indicate a reliability-related need for those limits, and to the Transmission Operators, Transmission Planners, Transmission Service Providers and Planning Authorities with its Reliability Coordinator area. For each IROL, the Reliability Coordinator shall provide the following supporting information: **[FAC-014 R5.1]**

Identification and status of the associated Facility (or group of Facilities) that is (are) critical to the derivation of the IROL. **[FAC-014 R5.1.1]**

The value of the IROL and its associated T<sub>v</sub>. **[FAC-014 R5.1.2]**

The associated Contingency(ies) **[FAC-014 R5.1.3]**

The type of limitation represented by the IROL (e.g., voltage collapse, angular stability) **[FAC-014 R5.1.4]**

APGI-Tapoco is not a Reliability Coordinator, but as a Planning Authority and Transmission Planner in the SERC region shall provide its SOLs and IROLs to those entities as described in R5. If APGI-Tapoco identifies any SOLs and IROLs then APGI shall provide these SOLs and IROLs to those entities that have a reliability-related need.

**[FAC-014 R5]**

APGI-Tapoco, as Transmission Operator, provides any SOL's it developed to its Reliability Coordinator, TVA. APGI-Tapoco is a member of the SERC Near-Term Study Group (NTSG) and Long-Term Study Group (LTSG). APGI-Tapoco supply updated models per the schedule of these groups to ensure the reliability of the BES and to prevent any cascading outages, instability, or uncontrolled separation that could adversely impact the BES.

**[FAC-014 R5.2]**

APGI – Tapoco, as a Planning Authority, provides its SOL's (including the subset of SOLs that are IROLs) to the required entities within the SERC studies groups mentioned above which include adjacent Planning Authorities, Transmission Planners, Transmission Service Providers, Transmission Operators and Reliability Coordinators that work within APGI-Tapoco's Planning Authority Area. **[FAC-014 R5.3]**

APGI-Tapoco, as a Planning Authority, provides its SOLs (including the subset of SOLs that are IROLs) to all entities in the SERC region through the SERC studies groups, NTSG and LTSG which include Tapoco's RC, TVA. Members of the SERC studies group include adjacent Planning Authorities, Transmission Planners, Transmission Service Providers, Transmission Operators and Reliability Coordinators that work within Tapoco Planning Authority Area.

**[FAC-014 R5.4]**

APGI – Tapoco, as a Planning Authority, did not identify any contingencies from Reliability Standard TPL-003, which would result in stability limits. APGI-Tapoco's system consists of two 161 kV lines and three miles of transmission lines.

**[FAC-014 R6]**

APGI-Tapoco, as a Planning Authority, shall provide this list of multiple contingencies and the associated stability limits to TVA that monitors the facilities associated with these contingencies and limits. APGI-Tapoco has a monthly call with TVA as part of the Reliability Coordinator

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Agreement. Additionally, APCI-Tapoco regularly monitors system conditions and coordinate with TVA. [FAC-014 R6.1]

APGI-Tapoco, as a Planning Authority, did not identify any stability-related multiple contingencies. APCI-Tapoco will notify TVA in any case where such contingencies are identified. APCI-Tapoco makes its models including its contingencies available to TVA by participating in the SERC NTSG and LTSG activities. [FAC-014 R6.2]

Note: APCI-Yadkin division was sold to Cube Hydro February 1, 2017. At this time, APCI-Tapoco division through a reverse Transmission System Agreement contracted Cube Hydro to be the APCI-Tapoco division transmission operator. Through the agreement Cube Hydro will continue the real-time operation of the remaining Tapoco transmission resource. Tapoco generation resources and their associated lines were sold November, 2012.

**Procedure Issued by:**



Matthew Fullerton, Power System Manager, APCI-Tapoco

5/24/2017  
Date

**DOCUMENT HISTORY**

Rev	Date	Reason	Compliance Contact	Subject Matter Expert
1	12/26/11	Original Procedure.	Sonny Patel	Randy Haynes
2	05/24/2012	Added title page, Header & footer and Cross reference NERC standard requirements.	Sonny Patel	Richard Jackson
3	05/03/2013	Richard Jackson Replaced by Tim Poole as a SME.	Sonny Patel	Tim Poole
4	12/30/2014	Annual Review- Changed SME to Khalid Osman from Tim Poole. Deleted references to FAC-010 on Page 2. Added additional information for R5 and R6, Stated APCI-Tapoco is not a RC and has no IROLs.	S. Shanahan	Khalid Osman
5	1/21/2015	Annual review updated for clarification purposes.	Susan Shanahan	Khalid Osman
6	9/1/2016	Annual review and approval	Susan Shanahan	Khalid Osman
7	5/24/2017	Annual review, change of procedure issue signature	Phil Bernick	Matthew Fullerton

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