

**Compliance Questionnaire and**

**Reliability Standard Audit Worksheet**

**FAC-014-2 — Establish and Communicate System Operating Limits**

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

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

**Applicable Function(s): RC, PA, TP, TOP**

**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 at <http://www.nerc.com/page.php?cid=2|20>. 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. Insert additional lines if necessary.

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

|  |  |  |  |
| --- | --- | --- | --- |
| **SME Name** | **Title** | **Organization** | **Requirement** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

# Reliability Standard Language

**FAC-014-2 — Establish and Communicate System Operating Limits**

**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.

**Applicability:**

Reliability Coordinator

Planning Authority

Transmission Planner

Transmission Operator

**NERC BOT Approval Date: 6/24/2008**

**FERC Approval Date: 3/20/2009**

**Reliability Standard Enforcement Date in the United States: 4/29/2009**

**Requirements:**

1. The Reliability Coordinator shall ensure that SOLs, including Interconnection Reliability Operating Limits (IROLs), for its Reliability Coordinator Area are established and that the SOLs (including Interconnection Reliability Operating Limits) are consistent with its SOL Methodology.

**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)***

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Provide the following:**  **Document Title and/or File Name, Page & Section, Date & Version** | | |
| **Title** | | **Date** | **Version** | |
|  | |  |  | |
|  | |  |  | |
|  | |  |  | |
| *Audit Team: Additional Evidence Reviewed:* | |  |  | |
|  | |  |  | |
|  | |  |  | |
|  | |  |  | |

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

**Compliance Assessment Approach Specific to FAC-014-2 R1**

\_\_\_Verify the RC has ensured that SOLs, including IROLs, for its RC Area were established and that the SOLs (including IROLs) were consistent with its SOL Methodology

**Auditors Detailed notes:**

**Additional Evidence Reviewed:**

|  |  |  |
| --- | --- | --- |
| **Title** | **Date** | **Version** |
|  |  |  |
|  |  |  |
|  |  |  |

1. The Transmission Operator shall establish SOLs (as directed by its Reliability Coordinator) for its portion of the Reliability Coordinator Area that are consistent with its Reliability Coordinator’s SOL Methodology.

**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)***

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Provide the following:**  **Document Title and/or File Name, Page & Section, Date & Version** | | |
| **Title** | | **Date** | **Version** | |
|  | |  |  | |
|  | |  |  | |
|  | |  |  | |
| *Audit Team: Additional Evidence Reviewed:* | |  |  | |
|  | |  |  | |
|  | |  |  | |
|  | |  |  | |

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

**Compliance Assessment Approach Specific to FAC-014-2 R2**

\_\_\_Verify the TOP has established SOLs (as directed by its RC) for its portion of the RC Area that were consistent with its RC’s SOL Methodology.

**Detailed Notes:**

**Additional Evidence Reviewed:**

|  |  |  |
| --- | --- | --- |
| **Title** | **Date** | **Version** |
|  |  |  |
|  |  |  |
|  |  |  |

1. The Planning Authority shall establish SOLs, including IROLs, for its Planning Authority Area that are consistent with its SOL Methodology.

**Describe, in narrative form, how you meet compliance with this requirement: *(Registered Entity Response Required)***

# R3 Supporting Evidence and Documentation

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

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Provide the following:**  **Document Title and/or File Name, Page & Section, Date & Version** | | |
| **Title** | | **Date** | **Version** | |
|  | |  |  | |
|  | |  |  | |
|  | |  |  | |
| *Audit Team: Additional Evidence Reviewed:* | |  |  | |
|  | |  |  | |
|  | |  |  | |
|  | |  |  | |

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

**Compliance Assessment Approach Specific to FAC-014-2 R3**

\_\_\_Verify the PA has established SOLs, including IROLs, for its PA Area that were consistent with its SOL Methodology.

**Auditors Detailed notes:**

**Additional Evidence Reviewed:**

|  |  |  |
| --- | --- | --- |
| **Title** | **Date** | **Version** |
|  |  |  |
|  |  |  |
|  |  |  |

1. The Transmission Planner shall establish SOLs, including IROLs, for its Transmission Planning Area that are consistent with its Planning Authority’s SOL Methodology.

**Describe, in narrative form, how you meet compliance with this requirement: *(Registered Entity Response Required)***

# R4 Supporting Evidence and Documentation

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

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Provide the following:**  **Document Title and/or File Name, Page & Section, Date & Version** | | |
| **Title** | | **Date** | **Version** | |
|  | |  |  | |
|  | |  |  | |
|  | |  |  | |
| *Audit Team: Additional Evidence Reviewed:* | |  |  | |
|  | |  |  | |
|  | |  |  | |
|  | |  |  | |

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

**Compliance Assessment Approach Specific to FAC-014-2 R4**

\_\_\_ Verify the TP has established SOLs, including IROLs, for its TP Area that were consistent with its PA’s SOL Methodology.

**Detailed Notes:**

**Additional Evidence Reviewed:**

|  |  |  |
| --- | --- | --- |
| **Title** | **Date** | **Version** |
|  |  |  |
|  |  |  |
|  |  |  |

1. 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:
   1. The Reliability Coordinator shall provide its SOLs (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 within its Reliability Coordinator Area. For each IROL, the Reliability Coordinator shall provide the following supporting information:
      1. Identification and status of the associated Facility (or group of Facilities) that is (are) critical to the derivation of the IROL.
      2. The value of the IROL and its associated Tv.
      3. The associated Contingency(ies).
      4. The type of limitation represented by the IROL (e.g., voltage collapse, angular stability).
   2. The Transmission Operator shall provide any SOLs it developed to its Reliability Coordinator and to the Transmission Service Providers that share its portion of the Reliability Coordinator Area.
   3. The Planning Authority shall provide its SOLs (including the subset of SOLs that are IROLs) to adjacent Planning Authorities, and to Transmission Planners, Transmission Service Providers, Transmission Operators and Reliability Coordinators that work within its Planning Authority Area.
   4. The Transmission Planner shall provide its SOLs (including the subset of SOLs that are IROLs) to its Planning Authority, Reliability Coordinators, Transmission Operators, and Transmission Service Providers that work within its Transmission Planning Area and to adjacent Transmission Planners.

**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)***

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Provide the following:**  **Document Title and/or File Name, Page & Section, Date & Version** | | |
| **Title** | | **Date** | **Version** | |
|  | |  |  | |
|  | |  |  | |
|  | |  |  | |
| *Audit Team: Additional Evidence Reviewed:* | |  |  | |
|  | |  |  | |
|  | |  |  | |
|  | |  |  | |

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

**Compliance Assessment Approach Specific to FAC-014-2 R5**

\_\_\_Verify the entity provided it’s SOLs and IROLs to those entities that have a reliability‑related need for those limits and provided a written request that included a schedule for delivery of those limits as follows:

\_\_\_Verify the RC provided its SOLs (including the subset of SOLs that are IROLs) to the following: adjacent RCs, RCs who indicate a reliability‑related need for those limits, TOPs within the RC Area, TPs within the RC Area, TSPs within the RC Area and PAs within its RC Area.

\_\_\_Verify that for each IROL, the RC provided the following supporting information:

\_\_\_Identification and status of the associated Facility (or group of Facilities) that is (are) critical to the derivation of the IROL.

\_\_\_\_ The value of the IROL and its associated Tv.

\_\_\_The associated Contingency(ies).

\_\_\_The type of limitation represented by the IROL (*e.g.*, voltage collapse, angular stability).

\_\_\_Verify the TOP provided any SOLs it developed to its RC and to the TSPs that share its portion of the RC Area.

\_\_\_Verify the PA provided its SOLs (including the subset of SOLs that are IROLs) to adjacent PAs, TPs within its PA Area, TSPs within its PA Area, TOPs within its PA Area and RCs within its PA Area.

\_\_\_Verify the TP provided its SOLs (including the subset of SOLs that are IROLs) to its PA within its TP Area, RCs within its TP Area, TOPs within its TP Area, TSPs within its TP Area and adjacent TPs.

**Auditors Detailed notes:**

**Additional Evidence Reviewed:**

|  |  |  |
| --- | --- | --- |
| **Title** | **Date** | **Version** |
|  |  |  |
|  |  |  |
|  |  |  |

1. The Planning Authority shall identify the subset of multiple contingencies (if any), from Reliability Standard TPL-003 which result in stability limits.
   1. The Planning Authority shall provide this list of multiple contingencies and the associated stability limits to the Reliability Coordinators that monitor the facilities associated with these contingencies and limits.
   2. If the Planning Authority does not identify any stability-related multiple contingencies, the Planning Authority shall so notify the Reliability Coordinator.

**Describe, in narrative form, how you meet compliance with this requirement: *(Registered Entity Response Required)***

# R6 Supporting Evidence and Documentation

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

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Provide the following:**  **Document Title and/or File Name, Page & Section, Date & Version** | | |
| **Title** | | **Date** | **Version** | |
|  | |  |  | |
|  | |  |  | |
|  | |  |  | |
| *Audit Team: Additional Evidence Reviewed:* | |  |  | |
|  | |  |  | |
|  | |  |  | |
|  | |  |  | |

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

**Compliance Assessment Approach Specific to FAC-014-2 R6**

\_\_\_ Verify the PA identified the subset of multiple contingencies (if any), from Reliability Standard TPL-003 which result in stability limits:

\_\_\_Verify the PA provided the list of multiple contingencies and the associated stability limits to the RCs that monitor the facilities associated with these contingencies and limits.

\_\_\_If the PA did not identify any stability-related multiple contingencies, the PA notified the RC.

**Auditors Detailed notes:**

**Additional Evidence Reviewed:**

|  |  |  |
| --- | --- | --- |
| **Title** | **Date** | **Version** |
|  |  |  |
|  |  |  |
|  |  |  |

# Supplemental Information

**Other ‑** The list of questions above is not all inclusive of evidence required to show compliance with the Reliability Standard. Provide additional information here**, as necessary that** demonstrates compliance with this Reliability Standard.

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

# 

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Req.** | **C** | **PV** | **NA** | **Statement** |
| **1** |  |  |  |  |
| **2** |  |  |  |  |
| **3** |  |  |  |  |
| **4** |  |  |  |  |
| **5** |  |  |  |  |
| **6** |  |  |  |  |

**Excerpts from FERC Orders -- For Reference Purposes Only**

**Updated Through September 1, 2010**

**FAC-014-2**

**Order 693**

**March 16, 2007**

P 1050. … The FAC series of standards contain the Reliability Standards that form the technical and procedural basis for calculating transfer capabilities. FAC-008-1 provides the basis for determining the thermal ratings of facilities while FAC-009-1 provides the basis for communicating those ratings. FAC-010-1 and FAC-011-1 provide the system operating limits methodologies for the planning and operational horizon respectively and FAC-014 provides for the communication of those ratings.

**Order 705**

**December 20, 2007**

P 83. The Commission agrees that it is appropriate in this instance to adopt NERC’s revised effective dates of July 1, 2008 for FAC-010-1, October 1, 2008 for FAC-011-1 and January 1, 2009 for FAC-014-1. Given that this Final Rule will not be effective until January 2008, it is reasonable to allow responsible entities in the United States adequate time to comply with these Reliability Standards.

P 84. As for Ontario IESO’s concerns with the different implementation dates in Ontario and the United States, we agree that effective dates should be coordinated if practicable. In these circumstances, however, we foresee no problems arising from the effective dates approved here.

P 164. The Commission agrees with NERC that the Requirements to follow a methodology when determining SOLs are included in FAC-014-1. However, as the Commission states above, FAC-010-1, Requirements R2.1-R2.2 establish the performance metrics of the SOL methodology used. Thus, if the planning authority’s methodology to develop SOLs does not meet the demonstrated performance metrics of these Requirements in a planning time horizon, then under emergency, abnormal, or restorative conditions, the Bulk-Power System would be at risk of instability, separation, or cascading failures.

P173. The Commission agrees with NERC that FAC-014-1, Requirement R5 is not aimed at the prevention and/or mitigation of IROLs, but rather the communication of SOL and IROL information. … a failure to notify adjacent entities of an actual or potential IROL creates a demonstrable risk because it impairs the ability of neighboring entities to effectively monitor the Bulk-Power System. In addition, the Commission believes that this Requirement applies to both real-time operations and the planning time frames, by ensuring that inter-dependent IROLs in adjacent footprints are duly considered in the planning time frame and timely remedial actions are taken in real-time operation.

**Revision History**

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Date** | **Reviewers** | **Revision Description** |
| 1 | October 2009 | RSAW Working Group | New Document. |
| 2 | July 2010 | RSAW Working Group | Completed Audit Approach for R1, R2, R3, R4, R6. |
| 2 | September 2010 | NERC Legal & NERC Compliance | Added regulatory language & reviewed for formatting consistency. |
| 2 | January 2011 | Craig Struck | Revised Findings Table modified Supporting Evidence tables. |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |