

The logo for NERC (North American Electric Reliability Corporation) features the letters "NERC" in a bold, black, sans-serif font. A horizontal blue bar is positioned directly beneath the letters.

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Reliability Standards Development Plan: 2011–2013

Regional Reliability Standards Development Projects

to ensure
the reliability of the
bulk power system

February 28, 2011

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Regional Project Overviews

This document contains an overview for each of the currently opened or planned Regional Reliability Standards development projects. Each project overview includes the project number, title, list of affected reliability standards, and hyperlinks to associated portions of the NERC standards web pages along with a brief description of the project.

With the exception of regional standards developed in support of continent-wide standards, regional entities may independently initiate regional standards development and forward such standards to NERC for review and approval.

Regional Projects Possibly Requiring Coordination with NERC Continent-wide Projects

In this section, four regional reliability standards development projects are described. These four regional projects are:

Project 2007-01-RE — Underfrequency Load Shedding

Project 2007-05-RE — Balancing Authority Controls

Project 2007-11-RE — Disturbance Monitoring

Project 2008-04-RE — Protection Systems

These projects are being coordinated with NERC's continent-wide standards projects as described in the *Reliability Standards Development Plan*. In general, the standard drafting team of the NERC continent-wide project working with industry stakeholders shall propose which requirements should be continent-wide and which should be included in regional standards. Further, the timing of these regional projects is driven to large degree by the timeline of the corresponding continent-wide project.

Additional information is found in the individual projects that follow.

2007-01-RE — Underfrequency Load Shedding — Regional Standards Development

Standards Involved:

Eight regional reliability standards (one for each of the eight regions) identifying regional requirements in support of the following continent-wide standards:

PRC-006 — Development and Documentation of Regional Reliability Organizations' Underfrequency Load Shedding Programs

PRC-007 — Assuring Consistency with Regional UFLS Programs

PRC-009 — UFLS Performance Following an Underfrequency Event

Research Needed:

None

Brief Description:

This is a continuation of the corresponding project in Volume II of this work plan. Depending on the findings and determinations of the NERC standard draft team for Project 2007-01 Underfrequency Load Shedding (NERC UFLS SDT), it is anticipated that each region may be required to develop a regional standard that supports the continent-wide standard(s) developed for underfrequency load shedding.

PRC-006 is one of the few reliability standards identified by the Regional Reliability Standards Working Group as a standard that has some requirements that may need to be defined by each regional entity in a regional standard.

The NERC UFLS SDT will work with stakeholders to review PRC-006 and each of the current regional programs developed in accordance with that standard, including any other associated programs and/or requirements related to and contained with the UFLS program documentation.

The NERC UFLS SDT working with industry stakeholders shall propose which requirements should be continent-wide requirements and which requirements should be included in regional standards.

PRC-007 and PRC-009 have some 'fill-in-the-blank' characteristics, as identified in the Regional Reliability Standards Working Group work plan, which need to be removed. These standards shall be included with PRC-006 for consideration as one or more revised standards as necessary for consistency and clarity of overall program requirements and any other associated programs and/or requirements that affect or impact the UFLS program.

Standard Development Status:

See [NERC Project 2007-01 UFLS](#)

Milestone Timeline:

See [NERC UFLS SDT schedule](#)

Related Links:

[NERC Regional Reliability Standards Under Development](#)

[Florida Reliability Coordinating Council \(FRCC\)](#)

[Midwest Reliability Organization \(MRO\)](#)

[Northeast Power Coordinating Council \(NPCC\)](#)

[ReliabilityFirst Corporation \(RFC\)](#)

[SERC Reliability Corporation \(SERC\)](#)

[Southwest Power Pool, Inc. \(SPP\)](#)

[Texas Regional Entity \(Texas RE\)](#)

[Western Electricity Coordinating Council \(WECC\)](#)

2007-05-RE — Balancing Authority Controls — Regional Standards Development

Standards Involved:

Eight regional reliability standards (one for each of the eight regions) identifying regional requirements in support of the following continent-wide standard:

BAL-002 — Disturbance Control Performance

Research Needed:

None

Brief Description:

This is a continuation of the corresponding project in Volume II of this work plan. Depending on the findings and determinations of the NERC standard draft team for Project 2007-05 Balancing Authority Controls (NERC BAC SDT), it is anticipated that each region may be required to develop a regional standard that supports the continent-wide standard(s) developed for disturbance control performance.

BAL-002 is one of the few reliability standards identified by the Regional Reliability Standards Working Group (RRSWG) as a standard that has some requirements that may need to be defined by each regional entity in a regional standard. In particular, its October 2006 report, the RRSWG suggested the following related to BAL-002:

- In the long-term, regional reliability standards should be developed in support of North American standard BAL-002.
- Each regional entity should create a regional standard specifying its Contingency Reserve policy.

The continent-wide BAL-002 should be modified to:

- Address FERC's May 11 comments and revise R2 to remove reference to "sub-Regional Reliability Organization or Reserve Sharing Group".

The NERC BAC SDT will work with stakeholders to review BAL-002 and each of the current regional programs developed in accordance with that standard, including any other associated programs and/or requirements related to and contained with the BAC program documentation.

The NERC BAC SDT shall determine which requirements should be continent-wide requirements and which requirements should be included in regional standards.

Standards Development Status:

See [NERC Project 2007-05 Balancing Authority Controls](#)

Milestone Timeline:

See [NERC BAC SDT schedule](#)

Related Links:

[NERC Regional Reliability Standards Under Development](#)

[Florida Reliability Coordinating Council \(FRCC\)](#)

[Midwest Reliability Organization \(MRO\)](#)

[Northeast Power Coordinating Council \(NPCC\)](#)

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[Texas Regional Entity \(Texas RE\)](#)

[Western Electricity Coordinating Council \(WECC\)](#)

2007-11-RE — Disturbance Monitoring — Regional Standards Development

Standards Involved:

Eight regional reliability standards (one for each of the eight regions) identifying regional requirements in support of the following continent-wide standard:

PRC-002 — Define and Document Disturbance Monitoring Equipment Requirements

Research Needed:

None

Brief Description:

This is a continuation of the corresponding project in Volume II of this work plan. Depending on the findings and determinations of the NERC standard draft team for Project 2007-11 Disturbance Monitoring (NERC DM SDT), it is anticipated that each region may be required to develop a regional standard that supports the continent-wide standard(s) developed for disturbance monitoring.

PRC-002 is one of the few reliability standards identified by the Regional Reliability Standards Working Group (RRSWG) as a standard that has some requirements that may need to be defined by each regional entity in a regional standard. In particular, in its October 2006 report the RRSWG suggested the following related to PRC-002:

- In the long-term, this should be a Regional Reliability Standard. As written, it is a requirement for each RRO to develop a comprehensive set of requirements for DME and can be enforced that way.
- PRC-002 is directly related to PRC-018. PRC-018 requires the functional entities to comply with the requirements developed by each RRO. Any references to each other embedded in the requirements of the two standards need verified.
- The regions need to develop and submit regional standards.

The NERC DM SDT will work with stakeholders to review PRC-002 and each of the current regional programs developed in accordance with that standard, including any other associated programs and/or requirements related to and contained with the DM program documentation.

The NERC DM SDT working with industry stakeholders shall propose which requirements should be continent-wide requirements and which requirements should be included in regional standards.

Standards Development Status:

See [NERC Project 2007-11 Disturbance Monitoring](#).

Milestone Timeline:

See [NERC DM SDT schedule](#).

Related Links:

[NERC Regional Reliability Standards Under Development](#)

[Florida Reliability Coordinating Council \(FRCC\)](#)

[Midwest Reliability Organization \(MRO\)](#)

[Northeast Power Coordinating Council \(NPCC\)](#)

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[Western Electricity Coordinating Council \(WECC\)](#)

2008-04-RE — Protection Systems — Regional Standards Development

Standards Involved:

Eight regional reliability standards (one for each of the eight regions) identifying regional requirements in support of the following continent-wide standard:

PRC-012 — Special Protection System Review Procedure

Research Needed:

None

Brief Description:

This is a continuation of the corresponding project in Volume II of this work plan. Depending on the findings and determinations of the NERC standard draft team for Project 2008-04 Protection Systems (NERC PS SDT), it is anticipated that each region may be required to develop a regional standard that supports the continent-wide standard(s) developed for special protection systems/schemes.

PRC-012 is one of the few reliability standards identified by the Regional Reliability Standards Working Group (RRSWG) as a standard that has some requirements that may need to be defined by each regional entity in a regional standard.

The NERC PS SDT will work with stakeholders to review PRC-012 and each of the current regional programs developed in accordance with that standard, including any other associated programs and/or requirements related to and contained with the special protection system program documentation.

The NERC PS SDT working with industry stakeholders shall propose which requirements should be continent-wide requirements and which requirements should be included in regional standards.

Standards Development Status:

This project has not yet started.

Milestone Timeline:

The timeline for this project has not yet been established.

Related Links:

[NERC Regional Reliability Standards Under Development](#)

[Florida Reliability Coordinating Council \(FRCC\)](#)

[Midwest Reliability Organization \(MRO\)](#)

[Northeast Power Coordinating Council \(NPCC\)](#)

[ReliabilityFirst Corporation \(RFC\)](#)

[SERC Reliability Corporation \(SERC\)](#)

[Southwest Power Pool, Inc. \(SPP\)](#)

[Texas Regional Entity \(Texas RE\)](#)

[Western Electricity Coordinating Council \(WECC\)](#)



Florida Reliability Coordinating Council (FRCC) Regional Reliability Standards Development Projects

PRC-002-FRCC-01 — Definition of FRCC Regional Disturbance Monitoring and Reporting Requirements — FRCC

Standards Involved:

PRC-002-FRCC-01 — Definition of FRCC Regional Disturbance Monitoring and Reporting Requirements — FRCC

Research Needed:

None

Brief Description:

FRCC plans to convert the existing handbook document, “FRCC Requirements for Disturbance Monitoring Equipment”, revision dated June, 2006 into a new regional reliability standard, that complies with the requirements of NERC Reliability Standard, PRC-002-1 — “Define Regional Disturbance Monitoring and Reporting Requirements”.

Standards Development Status:

See [FRCC Definition of FRCC Regional Disturbance Monitoring and Reporting Requirements](#)

Related Links:

See [Florida Reliability Coordinating Council \(FRCC\) Standards Under Development](#) page.

PRC-003-FRCC-01 — Misoperation of Protection Systems — FRCC

Standards Involved:

PRC-003 — FRCC-01 — Analysis of Misoperations of Transmission and Generation Protection Systems — FRCC

Research Needed:

None

Brief Description:

FRCC plans to convert the existing handbook document, “FRCC Requirements for Analysis of Protection Mis-operations & Corrective Actions Reporting”, revision dated October 2003 into a new regional reliability standard, that complies with the requirements of NERC Reliability Standard, PRC-003-1 — “Regional Procedure for Analysis of Mis-operations of Transmission and Generation Protection Systems”.

Standards Development Status:

See [FRCC Regional Procedure for Analysis of Mis-operations of Transmission and Generation Protection Systems](#).

Related Links:

See [Florida Reliability Coordinating Council \(FRCC\) Standards Under Development](#) page.

PRC-006-FRCC-01 — FRCC Automatic Underfrequency Load Shedding Program

Standards Involved:

PRC-006-FRCC-01 — FRCC Automatic Underfrequency Load Shedding Program

Research Needed:

None

Brief Description:

FRCC has developed a regional standard to provide last resort system preservation measures by implementing an Underfrequency Load Shedding (UFLS) program.

Standards Development Status:

See [FRCC Automatic Underfrequency Load Shedding Program](#)

Related Links:

See [Florida Reliability Coordinating Council \(FRCC\) Standards Under Development](#) page.

PRC-024-FRCC-01 — Generator Performance During Frequency and Voltage Excursions — FRCC

Standards Involved:

PRC-024 — FRCC-01 — Generator Performance during Frequency and Voltage Excursions — FRCC

Research Needed:

None

Brief Description:

FRCC is developing a standard to establish “ride through” requirements for generators in the FRCC Region with respect to temporary grid voltage or frequency deviations from their normal range.

Standards Development Status:

See FRCC [Regional Generator Performance During Frequency and Voltage Excursions](#).

Related Links:

See [Florida Reliability Coordinating Council \(FRCC\) Standards Under Development](#) page.



Midwest Reliability Organization (MRO) Regional Reliability Standards Development Projects

See [Midwest Reliability Organization \(MRO\)](#) Standards Under Development page.



Northeast Power Coordinating Council (NPCC) Regional Reliability Standards Development Projects

At this time, NPCC will be developing at least four regional standards projects as required to support reliability objectives and as may be required to support their associated continent-wide NERC reliability standards identified in the first part of this volume. NPCC will develop the initial four regional standards in conjunction with, and as set forth by the schedules associated with the continent-wide standards, or schedules set forth by FERC, or our members.

In conjunction with this effort, a project is underway to translate the NPCC Criteria into “Directories” to demonstrate consistency with the NERC Reliability Standards. These Directories will utilize the applicable NERC Functional Model language, contain reference to related NERC standards, clearly identify applicability and utilize NERC glossary terms and when no term is available, use NPCC defined terms. These Directories are updated and submitted to NERC periodically to satisfy the NERC requirement as outlined in the Rules of Procedure to maintain a catalog of regional criteria. The Directories may be viewed on the “Regional Documents” section of the NPCC website or accessed through a link on the NERC website.

PRC-006-NPCC-01 — Automatic Underfrequency Load Shedding Program — NPCC

Standards Involved:

PRC-006-NPCC-01 — Automatic Underfrequency Load Shedding Program — NPCC

Research Needed:

None

Brief Description:

This Standard will provide the detailed requirements and measures to automatically provide system preservation by implementing an automatic underfrequency load shedding program to respond to system underfrequency events. The Standard will also emphasize the need for coordination amongst the NPCC region’s members, and those areas outside the NPCC footprint, and provide direction for refinements of underfrequency systems already in place. The standard will address issues that smaller entities may have due to reduced amounts of distribution feeders.

The Standard will ensure that all requirements will be identified to ensure compliance with relevant NERC standards.

The NPCC regional UFLS standard shall apply to Balancing Authority Areas “BA Areas” that are both synchronous and asynchronous to the eastern interconnection. BA Areas that are asynchronous (e.g. Quebec) will develop UFLS parameters with a different technical basis and requirements.

Standards Development Status:

NPCC posted the standard for ballot in Jan. 2011. NERC posted the standard for 45-day comment period in Jan. 2011. NERC performed a joint review of the standard with NPCC in Dec. 2010.

Related Links:

See Northeast Power Coordinating Council’s NPCC “[Regional Standards Open Process](#)” page.

PRC-012-NPCC-01 — Special Protection Systems — NPCC

Standards Involved:

PRC-012-NPCC-01 — Special Protection Systems — NPCC

Research Needed:

None

Brief Description:

The proposed Standard will describe the requirements for the design of Special Protection Systems, and the technical criteria required to support its implementation. The Standard will also identify the need for close coordination among various parties to ensure that the Special Protection Systems are implemented correctly, and triggers and resulting actions are made known and communicated in an on-line database.

Standards Development Status:

The NPCC Regional Standards Committee has approved the Regional Standards Authorization Request, RSAR, drafting will begin in accordance with NPCC's, FERC filed and approved Regional Standards Development Procedure. NPCC is targeting member approval of the standard by December 2011 and submission to NERC and FERC targeted for 2012.

Related Links:

See Northeast Power Coordinating Council's NPCC "[Standards Under Development](#)" page.

PRC-002-NPCC-01 — Disturbance Monitoring — NPCC

Standards Involved:

PRC-002-NPCC-01 — Disturbance Monitoring— NPCC

Research Needed:

None

Brief Description:

The Standard will establish the technical requirements for disturbance monitoring equipment, including:

- System operating parameters that are to be measured and recorded
- How to determine/select a preferred location of this equipment
- Installation and equipment minimum technical requirements
- Data communication requirements
- Analysis tools

Criteria for facility owner requirements for reporting disturbance data will also be defined.

Standards Development Status:

The NPCC Regional Standards Committee has approved the Regional Standards Authorization Request, RSAR, drafting was completed, and PRC-002-NPCC-01 approved by the NPCC membership Jan. 6, 2010. The NPCC Board of Directors approval was secured Feb. 9, 2010. The PRC-002-NPCC-01 package is with NERC for approval, and FERC Approval is targeted for the first quarter of 2011.

Related Links:

See Northeast Power Coordinating Council's NPCC "[Regional Standards Under Development](#)" page.



Reliability *First* Corporation (RFC) Regional Reliability Standards Development Projects

MOD-025-RFC-01 — Verification and Data Reporting of Gen Gross and Net Reactive Power Capability — RFC

Standards Involved:

MOD-025-RFC-01 — Verification and Data Reporting of Gen Gross and Net Reactive Power Capability — RFC

Research Needed:

None

Brief Description:

RFC plans to develop a regional standard to ensure accurate information on generator gross and net Reactive (MVAR) Power capability is available for steady-state models used to assess Bulk Electric System reliability.

Standards Development Status:

See RFC [Verification and Data Reporting of Generator Gross and Net Reactive Power Capability](#)

Related Links:

See [ReliabilityFirst Corporation \(RFC\) Standards Under Development](#) page.

PRC-006-RFC-01 — Automatic Underfrequency Load Shedding Requirements — RFC

Standards Involved:

PRC-006-RFC-01 — Automatic Underfrequency Load Shedding Requirements — RFC

Research Needed:

None

Brief Description:

RFC is developing a regional standard to establish requirements for automatic underfrequency load shedding (UFLS) to support NERC Reliability Standard PRC-006.

Standards Development Status:

See RFC [Automatic Underfrequency Load Shedding Requirements](#).

Related Links:

See [ReliabilityFirst Corporation \(RFC\) Standards Under Development](#) page

PRC-012-RFC-01 — Special Protection System Requirements — RFC

Standards Involved:

PRC-012-RFC-01 — Special Protection System Requirements — RFC

Research Needed:

None

Brief Description:

RFC is developing a regional standard to establish requirements for the review, development and application of Special Protection Systems (SPS) in one RFC standard allowing the retirement of the associated legacy documents. The standard will ultimately be mandated by NERC in support of NERC PRC-012-1 as related to a review process as well as a unique RFC application criterion.

Standards Development Status:

See RFC [Special Protection System Requirements Standard](#).

Related Links:

See [ReliabilityFirst Corporation \(RFC\) Standards Under Development](#) page



SERC Reliability Corporation (SERC) Regional Reliability Standards Development Projects

SERC has no additional regional standards planned at this time beyond the four regional standards projects required to support their associated continent-wide NERC reliability standards identified in first part of this volume. SERC will develop these four regional standards in conjunction with, and as set forth by the schedules associated with, the continent-wide standards.

PRC-006-SERC-01 — Underfrequency Load Shedding Program — SERC

Standards Involved:

PRC-006-SERC-01 — Underfrequency Load Shedding Program — SERC

Research Needed:

None

Brief Description:

This standard will provide the measures to automatically provide system preservation by implementing an automatic underfrequency load shedding (UFLS) program to respond to system underfrequency events. The standard will also emphasize the need for coordination amongst the entities within the SERC footprint, and with those areas outside the SERC footprint. The standard requirements will be consistent with the proposed NERC PRC-006-1 continent-wide standard, and other relevant NERC standards.

Standards Development Status:

The SERC Standards Committee accepted the SAR to develop a SERC UFLS Regional Reliability Standard on February 27, 2008 and assigned to the SERC Engineering Committee (EC). It was approved by the EC Executive Committee on April 25, 2008 and a standard draft team (or Responsible SERC Subgroup—RSS) was appointed on June 19, 2008. Draft- 1 of the standard was posted for comments on September 19, 2008; Draft-2 was posted for comments on November 21, 2008; Draft-3 was posted for information on February 9, 2009; and Draft-3a was posted for comments on September 15, 2009. Draft-4 of the standard was posted for a 15-day pre-ballot review period on October 27, 2009, with the ballot open from November 13-23, 2009. Ballot results were 48.5% of weighted sector votes were for approval (minimum of 66.7% required) therefore, the standard was not approved. On December 18, 2009 the EC Executive Committee voted to “send the draft standard back to the drafting team to repeat Step 8 (review comments and revise draft as appropriate).”

Draft 7 of the proposed SERC Underfrequency Load Shedding (UFLS) regional reliability standard (PRC-006-SERC-01) was posted for a 30-day review period on February 24, 2011. The SERC UFLS standard drafting team (SDT) has updated the SERC UFLS draft standard in response to the comments included on the Draft 6 December 2010 ballot.

Related Links:

See the [SERC Reliability Corporation Standards](#) page



Southwest Power Pool, Inc. (SPP) Regional Reliability Standards Development Projects

PRC-006-SPP-01 — Automatic Underfrequency Load Shedding Program — SPP

Standards Involved:

PRC-006-SPP-01 — Automatic Underfrequency Load Shedding Program — SPP

Research Needed:

None

Brief Description:

The SPP Standard Drafting Team is in the process of developing the SPP regional standard for Underfrequency Load Shedding Program. The purpose of this Regional Standard is to develop, coordinate, and document requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency and assist recovery of frequency following underfrequency events.

Standards Development Status:

See SPP Standard Development Page

Related Links:

See [Southwest Power Pool's \(SPP\) Standards Under Development page](#)



Texas Reliability Entity (Texas RE) Regional Reliability Standards Development Projects

BAL-001-TRE-01 — Regional Variance for CPS2 — Texas RE

Standards Involved:

BAL-001-TRE-01 Regional Variance for CPS2 — Texas RE

Research Needed:

None

Brief Description:

A Texas RE standard drafting team is drafting a regional variance to R2 of BAL-001-0 that still meets the purpose of the standard: Maintain Interconnection steady-state frequency within defined limits by balancing real power demand and supply in real-time. ERCOT currently has a NERC waiver for the CPS2 method (11/21/02) described in R2. This regional variance will provide what ERCOT employs instead of CPS2 to achieve the overall purpose of the BAL standard.

This variance will be the modification that was ordered by FERC in Order 693: As with other new regional differences, the commission expects that the ERCOT regional difference will include Requirements, Measures, and VRFs and VSLs. This regional variance will incorporate Section 5.9 of the ERCOT Protocols (and the applicable Nodal Protocol) to accomplish this objective. This variance as currently drafted will apply to the Balancing Authority that is ERCOT, GOs and GOPs.

Standards Development Status:

See Texas Regional Entity (Texas RE) [Reliability Standards Tracking](#) Status

Related Links:

[SAR-003 Standard Drafting Team: Modification to ERCOT Waiver to R2 of BAL-001-0 CPS2](#)

PRC-006-TRE-01 — Development and Documentation of Regional UFLS Program — Texas RE

Standards Involved:

PRC-006-TRE-01 — Development and Documentation of Regional UFLS Program — Texas RE

Research Needed:

None

Brief Description:

A Texas RE standard drafting team is currently following, reviewing, and commenting upon the characteristics of the NERC UFLS continent-wide standard that is under development (Project 2007-01). Depending on the specific characteristics and requirements of the continent-wide standard, and if necessary, the team will develop a regional reliability standard with requirements for automatic UFLS programs that will require that UFLS programs arrest declining frequency and assist recovery of frequency following a frequency excursion.

Standards Development Status:

See Texas Regional Entity (Texas RE) [Reliability Standards Tracking](#) Status

Related Links:

[SAR-002 Standard Drafting Team: Development and Documentation of Regional UFLS Programs](#)

ERCOT Regional Variance to CIP-001-1

Standards Involved:

CIP-001-1 Sabotage Reporting

Research Needed:

None

Brief Description:

This proposed regional variance to NERC Standard CIP-001-1—Sabotage Reporting, will address a reliability gap identified by Texas RE by adding TO and GO to the types of functional entities that this standard applies to. As presently written, the continent-wide CIP-001-1 standard does not apply to TO and GO entities, which often construct and maintain electrical facilities that are essential to the reliability of the bulk power system. This proposal will ensure that all entities who have physical access and control over transmission and generation facilities are included in the applicability of CIP-001 in the ERCOT Region.

In the absence of this proposed revision, there is no requirement that all TO and GO personnel must have procedures and training for recognizing and communicating sabotage events. There is also no present requirement for providing those personnel with sabotage response guidelines. When NERC Project 2009-01 Disturbance and Sabotage Reporting is completed and approved, which is expected to add TO and GO to entities subject to the CIP-001 requirements, this regional variance will be terminated.

The only changes to the standard are the addition of the TO and GO functions, and the removal of references to the Royal Canadian Mounted Police. When approved by FERC, the regional variance will only be applicable in the Texas RE Region, and it will be effective for one year from approval.

Standards Development Status:

See Texas Regional Entity (Texas RE) [Reliability Standards Tracking](#) Status

Related Links:

[SAR-008 ERCOT Regional Variance to CIP-001 Sabotage Reporting](#)

IRO-006-TRE-01 – Reliability Coordination Transmission Loading Relief

Standards Involved:

IRO-006-TRE-01 – Reliability Coordination Transmission Loading Relief

Research Needed:

None

Brief Description:

The Regional Reliability Standard proposed by this Standard Authorization Request (SAR) will support bulk power system reliability by providing enforceable requirements associated with the existing ERCOT congestion management procedures. This proposed Regional Standard addresses the FERC directive in Paragraph 964 of Order 693, where FERC found that the ERCOT transmission load relief procedures were superior to the national standard, and directed the ERO to provide Reliability Standards including Requirements, Measures and Levels of Non-Compliance corresponding to the ERCOT procedures for application in the ERCOT Region.

This SAR proposes a Regional Reliability Standard that complies with that directive. Five requirements are proposed that describe the obligations of the applicable entities in executing the existing congestion management procedures in the ERCOT Region, which are contained in Section 7 of the ERCOT Protocols (zonal).

Standards Development Status:

See Texas Regional Entity (Texas RE) [Reliability Standards Tracking](#) Status

Related Links:

[SAR-009 ERCOT Region Transmission Congestion Management](#)



Western Electricity Coordinating Council (WECC) Regional Reliability Standards Development Projects

VAR-001-WECC-1 — Voltage and Reactive Control — WECC

Standards Involved:

VAR-001-WECC-1 — Voltage and Reactive Control — WECC

Research Needed:

None

Brief Description:

The purpose of this standard is to ensure that voltage levels, reactive flows, and reactive resources are monitored, controlled, and maintained within limits in real time to protect equipment and the reliable operation of the Western Interconnection.

In the Western Interconnection, System Operating Limits for transmission paths in the Bulk Electric System assume that Automatic Voltage Regulators are in service to control voltage to support the transfer capability.

During the standard development process for VAR-002-WECC-1, it was identified that some WECC Transmission Operators did not provide voltage schedules to their Generator Operators. This is allowed because NERC VAR-001-1a requirement R4 allows Transmission Operators the option of providing either reactive power schedules or voltage schedules. The practice of providing reactive power or power factor schedules forces Generator Operators to manually adjust their automatic voltage regulator (AVR) voltage setting to a voltage setting that will provide the exact amount of reactive power directed by the Transmission Operator. Since the voltage on the transmission grid varies throughout the day, the Generator Operator is forced to continuously reset the voltage on the AVR. This is an unnecessary and distracting manual control burden on the Generator Operator.

NERC VAR-002 requires the Generator Operator to comply exactly with the voltage schedule or reactive power schedule directed by the Transmission Operator. If the Transmission Operator provides a voltage schedule, the AVR can automatically maintain compliance with the NERC requirement. If the Transmission Operator provides a reactive power schedule, rather than a voltage schedule, compliance with the schedule cannot depend on the automatic operation of the AVR. The VAR-002-WECC-1 standard prohibits the AVR from being switched to a constant reactive power mode of operation. Instead compliance becomes totally dependent on constant attention and readjustment by the Generator Operator. This significantly increases the risk of non-compliance for the Generator Operator.

Even more disturbing is the fact that this situation (the Transmission Operator specifying a constant reactive power output rather than a constant voltage level) defeats the intended purpose of the WECC VAR-002-WECC-1 standard; to prevent a voltage collapse. If the voltage does begin to collapse, the generator AVR— operating in constant voltage mode— will increase the reactive power output from the unit. That increase in reactive output means that the generator will no longer produce the amount of reactive power specified by the Transmission Operator's reactive power schedule. Once this occurs, the Generator Operator must immediately reduce the reactive power provided by the generator or risk noncompliance with NERC standard VAR-002,

R2. That will result in the generator doing the exact opposite of what is needed to prevent a voltage collapse and exposes the Interconnection to a risk of blackout.

Therefore, the VAR-001-WECC-1 standard drafting team was formed to develop a standard to require Transmission Operators to issue voltage schedules. The drafting team surveyed Transmission Operators and Generator Operators to identify scheduling practices that are causing confusion between Transmission Operators and Generator Operators.

WECC Standard VAR-001-WECC-1 is more stringent than a continent wide standard.

Standards Development Status:

See WECC Standards Development page at:

<http://www.wecc.biz/Standards/Development/Pages/default.aspx>

Related Links:

See <http://www.wecc.biz/Standards/Development/WECC0046/default.aspx>

BAL-004-WECC-2 — Automatic Time Error Correction — WECC

Standards Involved:

BAL-004-WECC-2 — Automatic Time Error Correction — WECC

Research Needed:

None.

Brief Description:

The purpose of this standard modification is to:

Implement clarifying modifications to the BAL-004-WECC-1 as directed in the FERC Order (Docket No. RM08-12-000; Order No.723) approving the standard.

Make additional changes as necessary to clarify the existing standard requirements.

Seek a regional variance to existing NERC standards or other clarification that the Balancing Authorities in the Western Interconnection shall use Automatic Time Error Correction Area Control Error (ATEC ACE) in BAL-004-WECC-1 for control and reporting purposes

In the order approving BAL-004-WECC-1, FERC directed WECC to make several clarifying modifications to the standard using the FERC-approved “Process for Developing and Approving WECC Standards” to make those modifications. WECC staff identified additional modifications to the existing standard that would clarify the intent without changing the purpose of the requirements.

There is confusion in the Western Interconnection regarding requirement R3 that indicates the ACE used for NERC reports shall be the same ACE as the AGC operating mode in use. This seems to conflict with the FERC response to Notice of Proposed Rulemaking comments that entities may use ATEC ACE for control, but should use Raw ACE for reporting.

WECC Standard BAL-004-WECC-1 establishes requirements that are either more stringent than or cover areas not covered by current NERC reliability standards; thereby meeting the Commission criteria for consideration of a regional standard.

Standards Development Status:

See WECC Standards Development page at:

<http://www.wecc.biz/Standards/Development/Pages/default.aspx>

Related Links:

<http://www.wecc.biz/Standards/Development/WECC-0068/default.aspx>