



FRCC
Member Services
Reliability Coordinator
Reliability Plan

FRCC-MS-OPRC-045

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1.0 Purpose

The *FRCC RC's Reliability Plan (Reliability Plan)* describes the responsibilities and authorities of the FRCC RC, including the FRCC RC System Operator (RCSO) function responsible for performing the real-time operations role and the RC Next-Day Planner (RCNDP) function responsible for performing the Operations Planning Analysis role for the FRCC Region. In addition, this *Reliability Plan* also highlights the Operations Planning Coordinator's (OPC) role and the State Capacity Emergency Coordinator's (SCEC) role within the FRCC Region. The FRCC Region includes peninsular Florida east of the Apalachicola River. The entire FRCC Region is within the Eastern Interconnection and is under the direction of the FRCC RC.

2.0 Terms and Definitions

2.1 Capitalized Terms

As defined in the North American Electric Reliability Corporation's (NERC's) Glossary of Terms.

2.2 FRCC Operating Entities (OEs)

FRCC OEs refers to Transmission Operators (TOPs), Balancing Authorities (BAs), Generator Operators (GOPs), Distribution Providers (DPs) within the FRCC Region.

3.0 Background

This *Reliability Plan* is approved by the FRCC Operating Committee (OC) and replaces the previously approved *Reliability Process for the FRCC Bulk Electric System (FRCC-RE-OP-003)* document. If the *Reliability Plan* undergoes significant changes, the modifications are presented to the FRCC Board of Directors for their review prior to final approval of the revised document by the FRCC OC. The *Reliability Plan* outlines the responsibilities and authorities of the FRCC RC and other reliability functions performed within the FRCC Region to ensure reliable operation of the Bulk Electric System (BES) within the FRCC Region.

Because the actions of participants within the FRCC Region impact the reliability of the BES, this *Reliability Plan* also describes the responsibilities of FRCC OEs, including entities acting as agents to perform functions on their behalf, for maintaining reliability of the BES.

4.0 Authorization

The FRCC organization utilizes an RC Agent to perform the real-time RCSO role and the RCNDP role. The operators performing the RCSO and RCNDP roles have the responsibility and authority to act to address the reliability of the FRCC RC Area via direct actions or by issuing Operating Instructions to OEs within the FRCC Region.

Under the direction of the FRCC OC, the FRCC organization utilizes FRCC staff to perform the OPC and SCEC functions. The FRCC OC has approved specific OPC and SCEC related processes and procedures to assist the FRCC RC in ensuring the reliability of the region beyond the NERC Reliability Standard requirements.

5.0 Responsibilities

5.1 FRCC RC Administrative Oversight

The administrative oversight of the RC function is performed by FRCC Operating Reliability Subcommittee (ORS) under the direction of the FRCC Operating Committee. The FRCC ORS is responsible for reviewing and endorsing all RC related procedures and processes, including the following list:

- FRCC RC's *SOL Methodology for Operations Horizon* (FRCC-MS-OP-009)
- *FRCC RC Area Restoration Plan* (FRCC-MS-RC-014)
- *FRCC Data Specification and Collection Procedure* (FRCC-MS-OPRC-004)
- *Outage Coordination Process* (FRCC-MS-OPRC-042)
- *RC Back-Up Operating Plan* (FRCC-MS-RC-008)
- *FRCC Communications and Coordination Procedure* (FRCC-MS-OPRC-006)
- *FRCC RC Operating Procedure* (FRCC-MS-RC-010)
- *FRCC RC Operations Planning (Next-Day) Procedure* (FRCC-MS-OPRC-030)
- *FRCC RC Training Program* (FRCC-MS-RC-007)
- *RC GMD Operating Plan and TOP Operating Procedure* (FRCC-MS-OPRC-003)

The FRCC ORS also performs the various document reviews and the coordination required by the RC function; including the reviews of TOPs submitted restoration plans per NERC Reliability Standard EOP-006-2, the various BA and TOP submitted emergency plans per NERC Reliability Standard EOP-011-1, the Planning Assessment coordination per NERC Reliability Standard IRO-017-1, and the TOP submitted GMD Operating Procedures per NERC Reliability Standard EOP-010-1.

In addition, the FRCC ORS participates on any necessary conference calls to address generating capacity shortfalls, fuel related deficiencies, hurricane preparation, or other emergency related coordination calls.

5.2 FRCC RCSO (Current Day Operations)

The FRCC RCSO has the responsibility and authority to act to address the reliability of the FRCC RC Area via direct actions or by issuing Operating Instructions to OEs within the FRCC Region. The FRCC RCSO is responsible for analyzing the current-day operating conditions, including real-time monitoring and contingency analysis of the BES and utilizes a State Estimator (SE), a Real-time Contingency Analysis (RTCA) application, and Power and Voltage Curve Analysis (PV Curve) application to evaluate the reliability of the BES. The FRCC RC ensures that a Real-time Assessment is performed at least once every 30 minutes and notifies impacted entities when the results of a Real-time Assessment indicate an actual or expected condition that may result in, a System Operating Limit (SOL) or Interconnection Reliability Operating Limit (IROL) exceedance within its Wide Area. The FRCC has adopted the minimum acceptable reliability criteria as follows:

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1. No real-time thermal overloads of a BES Facility greater than 100% of applicable Facility Ratings or voltage conditions inconsistent with *FRCC Voltage and Reactive Control Procedure* (FRCC-MS-OP-015) without concurrence of Facility owner and the RC.
2. No single contingency event or specified multiple contingency event that results in a thermal loading of a BES Facility greater than its Normal Rating and less than or equal to its applicable Facility Emergency Rating, unless there is a defined post-contingency operator action that could be completed within the Emergency Rating's associated time parameter.
3. Any single contingency event or specified multiple contingency event that results in thermal loading of a BES Facility greater than its applicable Facility Emergency Rating will require pre-contingency action or use of a Remedial Action Scheme (RAS) if it is determined that Cascading or uncontrolled separation will occur. If it is determined that Cascading or uncontrolled separation will **not** occur, post-contingency operator action, up to and including shedding FIRM customer load, is acceptable with RC concurrence.
4. No single contingency event or specified multiple contingency event resulting in an anticipated voltage drop of a BES Facility below 90% of nominal voltage, unless studies have been previously performed and approved by the FRCC Operating Reliability Subcommittee (ORS) that demonstrate voltage stability for the specified event.
5. Each TOP shall operate within the applicable SOLs in the FRCC Region consistent with the *FRCC System Operating Limit Methodology for the Operations Horizon* (FRCC-MS-OP-009).
6. Each TOP and the RC shall operate within the applicable IROLs in the FRCC Region consistent with the *FRCC System Operating Limit Methodology for the Operations Horizon* (FRCC-MS-OP-009).
7. If a potential or actual IROL exceedance cannot be avoided through proactive intervention, the RC shall initiate control actions or implement emergency procedures to relieve the exceedance as soon as possible but not longer than the applicable IROL T_v. The RC shall ensure all available resources, including load shedding, are used to address an IROL violation.

As warranted by real-time system conditions or RTCA results, the RCSO may issue Operating Instructions for OEs to perform any of the following mitigations to maintain the reliability of the BES:

1. Modify the transmission system configuration
2. Re-dispatch generation
3. Cancel or curtail non-firm hourly Interchange Transactions (TLR-3)
4. Cancel maintenance activities and return equipment to service, time permitting.
5. Modify the reactive power output of generation resources, switch capacitor banks, or reactors.
6. Implement Demand-Side Management, if available.
7. Cancel or curtail firm Interchange Transactions (TLR5 – re-dispatch generation).
8. Implement load shedding.

The FRCC RCSO monitors system frequency and FRCC BAs performance and directs any necessary actions to return to BAL and DCS compliance. The FRCC RC also monitors all BAs' Area Control Error and the aggregate ACE within the FRCC Region. The FRCC RCSO will identify sources of large Area Control Errors that may be contributing to Frequency Error and coordinate corrective actions with the appropriate BA.

The FRCC RCSO performs a Daily Capacity Assessment and requests updated Capacity Assessment Data from the FRCC OEs as necessary. The FRCC RCSO also communicates and coordinates energy emergency activities with other NERC RCs to ensure real-time operating conditions do not adversely impact the other RC Areas and to preserve the interconnection during real-time operations. In the event of a major system disturbance, the FRCC RCSO will coordinate system restoration among all FRCC OEs and the neighboring RC area to restore the BES to a normal condition, ensure reliability is maintained, and priority is placed on restoring ties with the Interconnection. The FRCC RCSO is also responsible for reporting suspected or actual physical and cyber threats in the FRCC Region to the Electricity Information Sharing and Analysis Center (E-ISAC) via the NERC RCIS.

5.3 FRCC RCNDP (Operational Planning Analysis – Next-Day)

The FRCC RCNDP has the responsibility and authority to act to address the reliability of the FRCC RC Area via direct actions or by issuing Operating Instructions to OEs within the FRCC Region. The FRCC RCNDP performs an Operational Planning Analysis (OPA) to assess the planned operations for next-day. The FRCC RCNDP OPA process utilizes the RC Agent's model of the FRCC Region (including appropriate neighboring portions of the Eastern Interconnection) and incorporates planned generation and transmission outages, forecasted BA loads, expected generation resource commitment and dispatch, and interchange scheduling.

The FRCC RCNDP utilizes an off-line Contingency Analysis (CA) application to assess potential SOL exceedances, potential IROL exceedances, and adherence to the FRCC's minimum acceptable reliability criteria (see Section 5.1). The OPA results are coordinated with FRCC BAs and FRCC TOPs and an Operating Plan(s) is developed addressing identified issues. The RCNDP posts the Operating Plan(s) on the FRCC website and notifies FRCC OEs of the posted Operating Plan(s) for their review.

5.4 FRCC OPC (Weekly, Monthly, and Seasonal Operations Planning Studies)

The FRCC OPC performs weekly, monthly, and seasonal analysis studies for the FRCC Region. The FRCC OPC utilizes the PSS/e model cases produced by the FRCC Planning Committee which include the FRCC Region and appropriate neighboring portions of the Eastern Interconnection. The FRCC OPC incorporates planned generation and transmission outages, forecasted BA loads, expected generation resource commitment and dispatch, and interchange scheduling for the time period being studied. The FRCC OPC utilizes an off-line Contingency Analysis (CA) application to assess potential SOL exceedances, potential IROL exceedances, and adherence to the FRCC's minimum acceptable reliability criteria (see Section 5.1).

The FRCC OPC hosts weekly conference calls with FRCC OEs and the Southeastern RC representatives to discuss the study findings, problems and/or mitigations. The conference call primarily focuses on issues identified in the upcoming week timeframe, however the FRCC OEs will

also discuss issues identified in the monthly studies. The FRCC OPC may arrange a conference call at any time if there is concern that a problem might exist and may need to be resolved.

The FRCC OPC, in coordination with the FRCC Operations Planning Working Group (OPWG), performs summer and winter seasonal transmission assessments and four operational seasonal studies each year to evaluate the impact of generation and Transmission outages under anticipated system conditions for the FRCC Region. The FRCC OPC, in coordination with the FRCC OPWG (participants include FRCC BAs and FRCC TOPs), review the study findings and coordinate mitigations. The FRCC OPC presents the study reports to FRCC OC for approval.

5.5 FRCC SCEC

Upon notification by the FRCC RC of a Generating Capacity Advisory condition as noted in the *FRCC Generating Capacity Shortage Plan* (FRCC-MS-OPRC-015), the SCEC performs the following actions per the FRCC Generation Capacity Shortage Plan:

- Notifies FRCC Senior Management and the FRCC OC Chair of the Generating Capacity Advisory condition.
- Initiates a multi-day, look-ahead, FRCC Daily Capacity Assessment reporting for FRCC OEs to more accurately assess base-line conditions
- Verifies the Region is in the appropriate phase of the plan and makes appropriate notifications to FRCC OEs
- Focuses on coordination efforts to enhance situational awareness and increase communication among the FRCC OEs

5.6 FRCC OEs

FRCC OEs are responsible for the monitoring and operation of their equipment, facilities and systems in accordance with this *Reliability Plan*, FRCC OC approved procedures, and the NERC Reliability Standards to assure the operational reliability of the Region. Specifically, FRCC OEs are responsible for adhering to the FRCC reliability criteria outlined in Section 5.2 of this *Reliability Plan* and providing timely and accurate information per the *FRCC Data Specification and Collection Procedure* (FRCC-MS-OPRC-004).

FRCC OEs shall comply with the FRCC RCSO's Operating Instructions unless compliance with the Operating Instructions cannot be physically implemented or unless such actions would violate safety, equipment, regulatory, or statutory requirements. If an FRCC OE cannot perform the Operating Instruction, the FRCC OE shall notify the FRCC RCSO of that situation. If an FRCC OE has any concerns with responding to the FRCC RCSO's direction which are not related to violations of safety, equipment, regulatory or statutory requirements, they should make the RCSO aware of their concerns and then do as directed by the RCSO. Disputes over these directions would be handled at a later time through the FRCC ORS and FRCC OC. If for any reason the RC believes that a FRCC OE is not complying with specific directives from the RC, the RC shall notify the Manager of RC Operations and Oversight. The Manager of RC Operations and Oversight will contact management of the entity in question stating the nature of the complaint and request a review by FRCC ORS of the actions(s) taken including copies of any pertinent correspondence, data, recordings, etc.

6.0 Coordination Agreements

6.1 NERC Agreements

The FRCC RC and/or its agents execute the NERC RC Standards of Conduct and the Confidentiality Agreement for Electric System Operating Reliability Data as required by NERC.

6.2 FRCC RC Agent Agreement

The FRCC is the Reliability Coordinator for the FRCC Region and has delegated the Real-time function to an agent pursuant to a specific agent agreement. This agreement outlines the functions and responsibilities for acting as the agent performing the RC function, including the RCSO function and the RCNDP function for the FRCC Region.

6.3 Adjacent RC Coordination Agreement

The FRCC RC and/or its agents shall abide by the current Adjacent RC Coordination Agreement with the Southeastern RC as required.

6.4 FRCC Confidentiality Agreements

The FRCC has executed confidentiality agreements to safeguard reliability data from marketing functions and to ensure the OEs follow FRCC reliability guidelines & procedures consistent with the reliability requirements.

7.0 Document Distribution/Notification Requirements

7.1 Distribution Timeframe

7.1.1 This document should be distributed within 5 business days of version approval.

7.2 NERC Required Distribution List

7.2.1 Per the NERC Guideline for Approving Regional and Reliability Coordinator Reliability Plans, the FRCC RC will submit this *Reliability Plan* to NERC for review and acceptance/approval.

7.3 Additional Distribution List

7.3.1 FRCC OC

7.3.2 FRCC ORS

7.3.3 FRCC RC Agent

7.3.4 FRCC OPWG

7.3.5 FRCC OPC

7.3.6 FRCC SCEC

- 7.3.7 FRCC BAs
- 7.3.8 FRCC TOPs
- 7.3.9 FRCC GOPs
- 7.3.10 FRCC DPs
- 7.3.11 FRCC Southeastern RC

8.0 References

- 8.1 *FRCC Voltage and Reactive Control Procedure (FRCC-MS-OP-015)*
- 8.2 *FRCC System Operating Limit Methodology for the Operations Horizon (FRCC-MS-OP-009)*
- 8.3 *FRCC Generating Capacity Shortage Plan (FRCC-MS-OPRC-015)*
- 8.4 *FRCC Data Specification and Collection Procedure (FRCC-MS-OPRC-004)*
- 8.5 *FRCC SOL Methodology for Operations Horizon (FRCC-MS-OP-009)*
- 8.6 *FRCC RC Area Restoration Plan (FRCC-MS-RC-014)*
- 8.7 *Outage Coordination Process (FRCC-MS-OPRC-042)*
- 8.8 *RC Back-Up Operating Plan (FRCC-MS-RC-008)*
- 8.9 *FRCC Communications and Coordination Procedure (FRCC-MS-OPRC-006)*
- 8.10 *FRCC RC Operating Procedure (FRCC-MS-RC-010)*
- 8.11 *FRCC RC Operations Planning (Next-Day) Procedure (FRCC-MS-OPRC-030)*
- 8.12 *FRCC RC Training Program (FRCC-MS-RC-007)*
- 8.13 *RC GMD Operating Plan and TOP Operating Procedure (FRCC-MS-OPRC-003)*

9.0 Attachments

- 9.1 None

10.0 Review and Modification History

Review and Modification Log			
Date	Version Number	Description of Review or Modification	Sections Affected
4/5/2017	1	Legacy document, <i>Reliability Process for the FRCC BES</i> (FRCC-RE-OP-003), was converted to new template and rewritten to capture current FRCC processes. Initial approval of this document will be performed by the MS Board. On May 30, 2017, Board approved granting full approval authority of this document to the OC with the understanding that significant revision will be presented to the Board for their input.	All

11.0 Disclaimer

The information, analysis, requirements and/or procedures described herein are not intended to be fully inclusive of all activities that may support compliance to a specific NERC Reliability Standard referenced or implied within the document. Nevertheless, it is the FRCC entities' and other users' responsibility to ensure the most recent version of this document is being used in conjunction with other applicable procedures, including, but not limited to, the applicable NERC Reliability Standards as they may be revised from time to time.

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