

## Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.

### Description of Current Draft

EOP-005-3 is being posted for a 45-day formal comment period with ballot.

| Completed Actions   | Date                           |
|---|--------------------------------|
| Standards Committee approved Standard Authorization Request (SAR) for posting | 07/15/2015                     |
| SAR posted for comment  | 07/21/2015 – 08/19/2015        |
| <u>45-day formal comment period with ballot</u>                               | <u>06/22/2016 – 08/08/2016</u> |

| Anticipated Actions                                 | Date  |
|---|---|
| <del>45-day formal comment period with ballot</del> | <del>06/22/2016 – 08/08/2016</del>                                    |
| 45-day formal comment period with additional ballot | <del>08/10/30</del> 25/2016 – <del>10/12/14</del> 08/2016             |
| 10-day final ballot                                 | <del>11/12/01</del> 27/2016 – <del>11/01/11</del> 10/2016 <u>2017</u> |
| NERC Board (Board) adoption                         | February 2017   |

## New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

**Term(s):**

None.

When this standard receives Board adoption, the rationale boxes will be moved to the Supplemental Material Section of the standard.

## A. Introduction

1. **Title:** System Restoration from Blackstart Resources
2. **Number:** EOP-005-3
3. **Purpose:** Ensure plans, Facilities, and personnel are prepared to enable System restoration from Blackstart Resources to ensure reliability is maintained during restoration and priority is placed on restoring the Interconnection.
4. **Applicability:**
  - 4.1. **Functional Entities:**
    - 4.1.1. Transmission Operators
    - 4.1.2. Generator Operators
    - 4.1.3. Transmission Owners identified in the Transmission Operators restoration plan
    - 4.1.4. Distribution Providers identified in the Transmission Operators restoration plan
5. **Effective Date:** See the Implementation Plan for EOP-005-3.
6. **Standard-Only Definition:** None

## B. Requirements and Measures

- R1. Each Transmission Operator shall develop and implement a restoration plan approved by its Reliability Coordinator. The restoration plan shall ~~allow for restoring~~be implemented to restore the Transmission Operator's System following a Disturbance in which one or more areas of the Bulk Electric System (BES) shuts down and the use of Blackstart Resources is required to restore the shutdown area to service, to a state whereby the choice of the next Load to be restored is not driven by the need to control frequency or voltage regardless of whether the Blackstart Resource is located within the Transmission Operator's System. The restoration plan shall include:  
*[Violation Risk Factor = High] [Time Horizon = Operations Planning, Real-time Operations]*
  - 1.1. Strategies for ~~system~~System restoration that are coordinated with the Reliability Coordinator's high level strategy for restoring the Interconnection.
  - 1.2. A description of how all Agreements or mutually ~~agreed~~agreed upon procedures or protocols for off-site power requirements of nuclear power plants, including priority of restoration, will be fulfilled during System restoration.

- 1.3. Procedures for restoring interconnections with other Transmission Operators under the direction of the Reliability Coordinator.
  - 1.4. Identification of each Blackstart Resource and its characteristics including but not limited to the following: the name of the Blackstart Resource, location, megawatt and megavar capacity, and type of unit.
  - 1.5. Identification of Cranking Paths and initial switching requirements between each Blackstart Resource and the unit(s) to be started.
  - 1.6. Identification of acceptable operating voltage and frequency limits during restoration.
  - 1.7. Operating Processes to reestablish connections within the Transmission Operator's System for areas that have been restored and are prepared for reconnection.
  - 1.8. Operating Processes to restore Loads required to restore the System, such as station service for substations, units to be restarted or stabilized, the Load needed to stabilize generation and frequency, and provide voltage control.
  - 1.9. Operating Processes for transferring ~~authority~~ operations back to the Balancing Authority in accordance with the Reliability Coordinator's criteria.
- M1.** Each Transmission Operator shall have a dated, documented System restoration plan developed in accordance with Requirement R1 that has been approved by its Reliability Coordinator as shown with the documented approval from its Reliability Coordinator and will have evidence, such as operator logs, voice recordings or other operating documentation, voice recordings or other communication documentation to show that its restoration plan was implemented for times when a Disturbance has occurred, in accordance with Requirement R1.
- R2.** Each Transmission Operator shall provide the entities identified in its approved restoration plan with a description of any changes to their roles and specific tasks prior to the effective date of the plan. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
- M2.** Each Transmission Operator shall have evidence such as dated electronic receipts or registered mail receipts that it provided the entities identified in its approved restoration plan with a description of any changes to their roles and specific tasks prior to the effective date of the plan in accordance with Requirement R2.
- R3.** Each Transmission Operator shall review its restoration plan and submit it to its Reliability Coordinator ~~at least once each 15 calendar months~~ annually on a mutually-agreed, predetermined schedule. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
- M3.** Each Transmission Operator shall have documentation such as a dated review signature sheet, revision histories, dated electronic receipts, or registered mail receipts, that it has ~~at least once each 15 calendar months~~ annually reviewed and

submitted the Transmission Operator’s restoration plan to its Reliability Coordinator in accordance with Requirement R3.

**Rationale for Requirement R4:** As previously written, Requirement R4 addressed (in one sentence) two restoration plan update items that a Transmission Operator must perform: (1) the restoration plan must be updated within 90 calendar days after identifying any unplanned permanent System modifications and (2) the restoration plan must be updated prior to implementing a planned BES modification. The phrase: “... that would change the implementation of its restoration plan” appeared to apply to both types of changes. There was no time frame specified for updating the restoration plan for a planned BES modification; although one could infer that “90 calendar days” is intended to be the same time frame for both unplanned and planned modifications. Furthermore, the distinction between “System modifications” for unplanned changes and “BES modifications” for planned changes ~~is confusing~~ has been seen as confusing to some Responsible Entities. Examples of unplanned System modifications could include natural disasters that affect BES Facilities, major equipment failures, etc., that are integral to the restoration plan.

~~Therefore, the EOP SDT revisions now provide clarity. By revising this to read as “that would change the ability to implement its restoration plan” to reflect System modifications that would change the ability to implement its restoration plan,” the intent is was that the TOP update its restoration plan when major modifications need to be made that affect its ability to implement its restoration plan as describe in Requirement R1 Parts 4.1 and 4.2, not that the Transmission Operator has to make updates for minor revisions, such as element number changes or device changes that have no significance to the implementation of the plan. The changes made in Requirement R4 and the requirement parts do not refer to outages. The references to permanent unplanned and planned BES modifications that will change the ability to implement the RC-approved restoration plan are intended to require a Responsible Entity to update and submit a restoration plan to the RC when the modification would substantively change the TOP’s ability to implement the restoration plan or impact the RC’s ability to monitor and direct restoration efforts. The intent is not to require a TOP to update and submit changes that do not substantively change the restoration plan, the TOP’s ability to implement the plan, or the RCs ability to monitor and direct the restoration efforts. Examples of instances that do not require update and submission of a restoration plan include element number changes or device changes that have no significance to the implementation of the plan.~~

In addition, the timeframes referenced in Requirement R4, Part 4.2 for a permanent planned BES modification directs the Responsible Entity to EOP-006-2, Requirement R5.1 and draft EOP-006-3, Requirement R5, Part 5.1, which states that the RC shall approve or disapprove the TOPs submitted restoration plan within 30 days of receipt. This allows the Responsible Entity to coordinate submission with the RC based on the RCs specific requirements.

- R4.** Each Transmission Operator shall update and submit its revised restoration plan to its Reliability Coordinator for approval, when the revision would change its ability to implement of its restoration plan ~~to reflect System modifications that would change the ability to implement its restoration plan~~, as follows: [*Violation Risk Factor = Medium*] [*Time Horizon = Operations Planning*]
- 4.1.** ~~No more than~~Within 90 calendar days after identifying the Transmission Operator identifies any unplanned permanent System BES modifications.
- 4.2.** Prior to implementing a planned permanent BES modification subject to the Reliability Coordinator approval requirements per EOP-006~~No less than 30 calendar days prior to the Transmission Operator's implementation of planned System modifications.~~
- M4.** Each Transmission Operator shall have documentation such as dated review signature sheets, revision histories, dated electronic receipts, or registered mail receipts, that it has updated its restoration plan and submitted it to its Reliability Coordinator in accordance with Requirement R4.
- R5.** Each Transmission Operator shall have a copy of its latest Reliability Coordinator approved restoration plan within its primary and backup control rooms so that it is available to all of its System Operators prior to its effective date. [*Violation Risk Factor = Lower*] [*Time Horizon = Operations Planning*]
- M5.** Each Transmission Operator shall have documentation that it has made the latest Reliability Coordinator approved copy of its restoration plan, in electronic or hardcopy format, in its primary and backup control rooms and available to its System Operators prior to its effective date in accordance with Requirement R5.

**Rationale for Requirement R6:** Dynamic simulations should simulate frequency and voltage response ~~for each step of the restoration~~. It is the intent of the EOP SDT that the simulation provides for the feedback of the System performance as generation and Load are added.

- R6.** Each Transmission Operator shall verify through analysis of actual events, steady state and dynamic simulations, or testing that its restoration plan accomplishes its intended function. This shall be completed at least once every five years. Such analysis, simulations or testing shall verify: [*Violation Risk Factor = Medium*] [*Time Horizon = Long-term Planning*]
- 6.1.** The capability of Blackstart Resources to meet the Real and Reactive Power requirements of the Cranking Paths and the dynamic capability to supply initial Loads.
- 6.2.** The location and magnitude of Loads required to control voltages and frequency within acceptable operating limits.
- 6.3.** The capability of generating resources required to control voltages and frequency within acceptable operating limits.

- M6.** Each Transmission Operator shall have documentation such as power flow outputs, that it has verified that its latest restoration plan will accomplish its intended function in accordance with Requirement R6.
- R7.** Each Transmission Operator shall have Blackstart Resource testing requirements to verify that each Blackstart Resource is capable of meeting the requirements of its restoration plan. These Blackstart Resource testing requirements shall include:  
*[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
- 7.1.** The frequency of testing such that each Blackstart Resource is tested at least once every three calendar years.
- 7.2.** A list of required tests including:
- 7.2.1.** The ability to start the unit when isolated with no support from the BES or when designed to remain energized without connection to the remainder of the System.
- 7.2.2.** The ability to energize a bus. If it is not possible to energize a bus during the test, the testing entity must affirm that the unit has the capability to energize a bus such as verifying that the breaker close coil relay can be energized with the voltage and frequency monitor controls disconnected from the synchronizing circuits.
- 7.3.** The minimum duration of each of the required tests.
- M7.** Each Transmission Operator shall have documented Blackstart Resource testing requirements in accordance with Requirement R7.

**Rationale for Requirement R8:** The addition of Requirement 8, Part 8.5 ~~would allow~~ allows operating personnel to gain experience on all stages of restoration ~~and coordination needed through all of the stages of restoration~~, including coordination needed ~~in the transfer~~ transferring of Demand and resource balance control operations back to the Balancing Authority in accordance with Requirement R1, Part 1.9.

- R8.** Each Transmission Operator shall include within its operations training program, annual System restoration training ~~at least once each 15 calendar months~~ for its System Operators. This training program shall include training on the following:  
*[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
- 8.1.** System restoration plan including coordination with the Reliability Coordinator and Generator Operators included in the restoration plan.
- 8.2.** Restoration priorities.
- 8.3.** Building of cranking paths.
- 8.4.** Synchronizing (re-energized sections of the System).
- 8.5.** Transition of Demand and resource balance within its area to the Balancing Authority. ~~for Area Control Error and Automatic Generation Control.~~

- M8.** Each Transmission Operator shall have an electronic or hard copy of the training program material provided for its System Operators for System restoration training in accordance with Requirement R8.

**Rationale for Requirement R9: The intent of “unique tasks” are those tasks that are defined by the Transmission Operator, the Transmission Owner, and the Distribution Provider.**

- R9.** Each Transmission Operator, each applicable Transmission Owner, and each applicable Distribution Provider shall provide a minimum of two hours of System restoration training every ~~two calendar years~~ **24 calendar months** to their field switching personnel identified as performing unique tasks associated with the Transmission Operator’s restoration plan that are outside of their normal tasks. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
- M9.** Each Transmission Operator, each applicable Transmission Owner, and each applicable Distribution Provider shall have an electronic or hard copy of the training program material provided to their field switching personnel for System restoration training and the corresponding training records including training dates and duration in accordance with Requirement R9.
- R10.** Each Transmission Operator shall participate in its Reliability Coordinator’s restoration drills, exercises, or simulations as requested by its Reliability Coordinator. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
- M10.** Each Transmission Operator shall have evidence that it participated in the Reliability Coordinator’s restoration drills, exercises, or simulations as requested in accordance with Requirement R10.
- R11.** Each Transmission Operator and each Generator Operator with a Blackstart Resource shall have written Blackstart Resource Agreements or mutually agreed upon procedures or protocols, specifying the terms and conditions of their arrangement. Such Agreements shall include references to the Blackstart Resource testing requirements. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
- M11.** Each Transmission Operator and Generator Operator with a Blackstart Resource shall have the dated Blackstart Resource Agreements or mutually agreed upon procedures or protocols in accordance with Requirement R11.
- R12.** Each Generator Operator with a Blackstart Resource shall have documented procedures for starting each Blackstart Resource and energizing a bus. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
- M12.** Each Generator Operator with a Blackstart Resource shall have dated documented procedures on file for starting each unit and energizing a bus in accordance with Requirement R12.
- R13.** Each Generator Operator with a Blackstart Resource shall notify its Transmission Operator of any known changes to the capabilities of that Blackstart Resource

affecting the ability to meet the Transmission Operator's restoration plan within 24 hours following such change. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*

- M13.** Each Generator Operator with a Blackstart Resource shall provide evidence, such as ~~e-mails with~~ dated electronic receipts or registered mail receipts, showing that it notified its Transmission Operator of any known changes to its Blackstart Resource capabilities within 24 hours of such changes in accordance with Requirement R13.
- R14.** Each Generator Operator with a Blackstart Resource shall perform Blackstart Resource tests, and maintain records of such testing, in accordance with the testing requirements set by the Transmission Operator to verify that the Blackstart Resource can perform as specified in the restoration plan. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
- 14.1.** Testing records shall include at a minimum: name of the Blackstart Resource, unit tested, date of the test, duration of the test, time required to start the unit, an indication of any testing requirements not met under Requirement R7.
- 14.2.** Each Generator Operator shall provide the blackstart test results within 30 calendar days following a request from its Reliability Coordinator or Transmission Operator.
- M14.** Each Generator Operator with a Blackstart Resource shall maintain dated documentation of its Blackstart Resource test results and shall have evidence such as e-mails with receipts or registered mail receipts, that it provided these records to its Reliability Coordinator and Transmission Operator when requested in accordance with Requirement R14.
- R15.** Each Generator Operator with a Blackstart Resource shall provide a minimum of two hours of training every ~~two-24~~ calendar ~~years-months~~ to each of its operating personnel responsible for the startup of its Blackstart Resource generation units and energizing a bus. The training program shall include training on the following: *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
- 15.1.** System restoration plan including coordination with the Transmission Operator
- 15.2.** The procedures documented in Requirement R12
- M15.** Each Generator Operator with a Blackstart Resource shall have an electronic or hard copy of the training program material provided to its operating personnel responsible for the startup and synchronization of its Blackstart Resource generation units and a copy of its dated training records including training dates and durations showing that it has provided training in accordance with Requirement R15.
- R16.** Each Generator Operator shall participate in the Reliability Coordinator's restoration drills, exercises, or simulations as requested by the Reliability Coordinator. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*

**M16.** Each Generator Operator shall have evidence, ~~such as dated training records,~~ that it participated in the Reliability Coordinator’s restoration drills, exercises, or simulations if requested to do so in accordance with Requirement R16.

## C. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Enforcement Authority: Regional Entity

“Compliance Enforcement Authority” means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

#### 1.2. ~~Compliance Monitoring Period and Reset Time Frame~~ Evidence Retention:

The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

The Transmission Operator shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- Approved restoration plan and any restoration plans in ~~force~~ effect since the last monitoring activity for Requirement R1, Measure M1.
- Provided the entities identified in its approved restoration plan with a description of any changes to their roles and specific tasks prior to the effective date of the plan for the current calendar year and three prior calendar years for Requirement R2, Measure M2.
- Submission of the Transmission Operator’s annually-reviewed restoration plan to its Reliability Coordinator for the current calendar year and three prior calendar years for Requirement R3, Measure M3.
- Submission of an updated restoration plan to its Reliability Coordinator for all versions for the current calendar year and the prior three calendar years for Requirement R4, Measure M4.

- The current restoration plan approved by the Reliability Coordinator and any restoration plans for the last three calendar years that was made available in its control rooms for Requirement R5, Measure M5.
- The verification results for the current, approved restoration plan and the previous approved restoration plan for Requirement R6, Measure M6.
- The verification process and results for the current Blackstart Resource testing requirements and the last previous Blackstart Resource testing requirements for Requirement R7, Measure M7.
- Training program materials or descriptions for three calendar years for Requirement R8, Measure M8.
- Records of participation in all requested Reliability Coordinator restoration drills, exercises, or simulations since its last monitoring activity, as well as one previous monitoring activity period for Requirement R10, Measure M10.

If a Transmission Operator is found non-compliant for any requirement, it shall keep information related to the non-compliance until found compliant.

The Transmission Operator, applicable Transmission Owner, and applicable Distribution Provider shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- Training program materials or descriptions and training records for three calendar years for Requirement R9, Measure M9.

If a Transmission Operator, applicable Transmission Owner, or applicable Distribution Provider is found non-compliant for any requirement, it shall keep information related to the non-compliance until found compliant.

The Transmission Operator and Generator Operator with a Blackstart Resource shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- Current Blackstart Resource Agreements and any Blackstart Resource Agreements or mutually agreed upon procedures or protocols in ~~force~~ effect since its last monitoring activity for Requirement R11, Measure M11.

The Generator Operator with a Blackstart Resource shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- Current documentation and any documentation in ~~force~~effect since its last monitoring activity on procedures to start each Blackstart Resource and for energizing a bus for Requirement R12, Measure M12.
- Notification to its Transmission Operator of any known changes to its Blackstart Resource capabilities over the last three calendar years for Requirement R13, Measure M13.
- The verification test results for the current set of requirements and one previous set for its Blackstart Resources for Requirement R14, Measure M14.
- Training program materials and training records for three calendar years for Requirement R15, Measure M15.

If a Generation Operator with a Blackstart Resource is found non-compliant for any requirement, it shall keep information related to the non-compliance until found compliant.

The Generator Operator shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- Records of participation in all requested Reliability Coordinator restoration drills, exercises, or simulations since its last monitoring activity for Requirement R16, Measure M16.

If a Generation Operator is found non-compliant for any requirement, it shall keep information related to the non-compliance until found compliant.

The Compliance Enforcement Authority shall keep the last monitoring activity records and all requested and submitted subsequent monitoring activity records.

### **1.3. Compliance Monitoring and Enforcement Program**

As defined in the NERC Rules of Procedure, “Compliance Monitoring and Enforcement Program” refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

### **1.3. Compliance Monitoring and Enforcement Processes**

- ~~Compliance Audits~~
- ~~Self-Certifications~~
- ~~Spot Checking~~
- ~~Compliance Violation Investigations~~
- ~~Self-Reporting~~
- ~~Complaints~~

~~As defined in the NERC Rules of Procedure, “Compliance Monitoring and Enforcement Program” refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.~~

~~1.4. Additional Compliance Information~~

~~None.~~

## Violation Severity Levels

| R #        | Violation Severity Levels  |  |  |   |
|------------|--|--|--|---|
|            | Lower VSL  | Moderate VSL   | High VSL   | Severe VSL  |
| <b>R1.</b> | The Transmission Operator has an approved plan but failed to comply with one of the requirement parts within Requirement R1.   | The Transmission Operator has an approved plan but failed to comply with two of the requirement parts within Requirement R1.   | The Transmission Operator has an approved plan but failed to comply with three of the requirement parts within Requirement R1.   | The Transmission Operator does not have an approved restoration plan.<br><br>OR<br>The Transmission Operator has an approved restoration plan, but failed to implement <u>the applicable requirement parts within Requirement R1.</u>   |
| <b>R2.</b> | The Transmission Operator failed to provide one of the entities identified in its approved restoration plan with a description of any changes to their roles and specific tasks prior to the effective date of the plan. | The Transmission Operator failed to provide two of the entities identified in its approved restoration plan with a description of any changes to their roles and specific tasks prior to the effective date of the plan. | The Transmission Operator failed to provide three of the entities identified in its approved restoration plan with a description of any changes to their roles and specific tasks prior to the effective date of the plan. | The Transmission Operator failed to provide four or more of the entities identified in its approved restoration plan with a description of any changes to their roles and specific tasks prior to the <u>implementation effective</u> date of the plan.<br><br>OR<br>Transmission Operator failed to provide at least half of the |

| R #        | Violation Severity Levels  |   |   |   |
|------------|--|---|---|---|
|            | Lower VSL  | Moderate VSL  | High VSL  | Severe VSL  |
|            |  |   |   | entities identified in its approved restoration plan with a description of any changes to their roles and specific tasks prior to the effective date.   |
| <b>R3.</b> | The Transmission Operator submitted the reviewed restoration plan <del>or</del> <u>confirmation of no change</u> within 30 calendar days after the mutually-agreed, predetermined schedule.  | The Transmission Operator submitted the reviewed restoration plan <del>or</del> <u>confirmation of no change</u> more than 30 and less than or equal to 60 calendar days after the mutually-agreed, predetermined schedule.   | The Transmission Operator submitted the reviewed restoration plan <del>or</del> <u>confirmation of no change</u> more than 60 and less than or equal to 90 calendar days after the mutually-agreed, predetermined schedule.   | The Transmission Operator submitted the reviewed restoration plan <del>or</del> <u>confirmation of no change</u> more than 90 calendar days after the mutually-agreed, predetermined schedule.  |
| <b>R4.</b> | The Transmission Operator failed to update and submit its <u>revised</u> restoration plan to the Reliability Coordinator within 90 calendar days of an unplanned <u>permanent System BES modification</u> <del>change</del> .<br><br><del>OR</del><br><del>The Transmission Operator failed to update and submit</del> | The Transmission Operator updated and submitted its <u>revised</u> restoration plan to the Reliability Coordinator between 91 calendar days and 120 calendar days of an unplanned <u>permanent System BES modification</u> <del>change</del> .<br><br><del>OR</del> | The Transmission Operator updated and submitted its <u>revised</u> restoration plan to the Reliability Coordinator between 121 calendar days <u>and</u> 150 calendar days of an unplanned <u>permanent System BES modification</u> <del>change</del> .<br><br><del>OR</del> | The Transmission Operator has failed to update and submit its <u>revised</u> restoration plan to the Reliability Coordinator within 150 calendar days of an unplanned <u>permanent System BES modification</u> <del>change</del> .<br><br><del>OR</del> |

| R #        | Violation Severity Levels  |   |   |  |
|------------|--|---|---|--|
|            | Lower VSL  | Moderate VSL  | High VSL  | Severe VSL   |
|            | <del>its restoration plan to the Reliability Coordinator at least 30 calendar days prior to a planned change.</del>                      | <del>The Transmission Operator failed to update and submit its restoration plan to the Reliability Coordinator at least 20 calendar days prior to a planned change.</del> | <del>The Transmission Operator failed to update and submit its restoration plan to the Reliability Coordinator at least 10 calendar days prior to a planned change.</del> | The Transmission Operator failed to update and submit its <b>revised</b> restoration plan to the Reliability Coordinator prior to a planned <b>permanent</b> BES modification.   |
| <b>R5.</b> | N/A  | N/A   | N/A   | The Transmission Operator did not make the latest Reliability Coordinator approved restoration plan available in its primary and backup control rooms prior to its effective date.   |
| <b>R6.</b> | The Transmission Operator performed the verification within the required timeframe but did not comply with one of the requirement parts. | The Transmission Operator performed the verification within the required timeframe but did not comply with two of the requirement parts.                                  | The Transmission Operator performed the verification but did not complete it within the required time frame.  | The Transmission Operator did not perform the verification or it took more than six calendar years to complete the verification.<br><br>OR<br>The Transmission Operator performed the verification within the required timeframe but did not comply with any of the requirement parts. |

| R #  | Violation Severity Levels   |   |   |  |
|------|---|---|---|--|
|      | Lower VSL   | Moderate VSL  | High VSL  | Severe VSL   |
| R7.  | N/A   | N/A   | N/A   | The Transmission Operator’s Blackstart Resource testing requirements do not address one or more of the requirement parts of Requirement R7.  |
| R8.  | The Transmission Operator’s training does not address one of the requirement parts of Requirement R8.   | The Transmission Operator’s training does not address two of the requirement parts of Requirement R8.   | The Transmission Operator’s training does not address three or more of the requirement parts of Requirement R8.   | The Transmission Operator has not included System restoration training in its operations training program.   |
| R9.  | The Transmission Operator, applicable Transmission Owner, or applicable Distribution Provider failed to train 5% or less of the personnel required by Requirement R9 within a <del>24-calendar-month</del> <u>two-calendar-year</u> period. | The Transmission Operator, applicable Transmission Owner, or applicable Distribution Provider failed to train more than 5% and up to 10% of the personnel required by Requirement R9 within a <del>24-calendar-month</del> <u>two-calendar-year</u> period. | The Transmission Operator, applicable Transmission Owner, or applicable Distribution Provider failed to train more than 10% and up to 15% of the personnel required by Requirement R9 <del>within a 24-calendar-month</del> <u>within a two-calendar-year</u> period. | The Transmission Operator, applicable Transmission Owner, or applicable Distribution Provider failed to train more than 15% of the personnel required by Requirement R9 within a <del>24-calendar-month</del> <u>two-calendar-year</u> period. |
| R10. | N/A   | N/A   | N/A   | The Transmission Operator has failed to comply with a request for its participation  |

| R #         | Violation Severity Levels  |  |  |  |
|-------------|--|--|--|--|
|             | Lower VSL  | Moderate VSL   | High VSL   | Severe VSL   |
|             |  |  |  | from the Reliability Coordinator.  |
| <b>R11.</b> | N/A  | The Transmission Operator and Generator Operator with a Blackstart Resource do not reference Blackstart Resource Testing requirements in their written Blackstart Resource Agreements or mutually-agreed upon procedures or protocols. | N/A  | The Transmission Operator and Generator Operator with a Blackstart resource do not have a written Blackstart Resource Agreement or mutually-agreed upon procedure or protocol.                           |
| <b>R12.</b> | N/A  | N/A  | N/A  | The Generator Operator does not have documented starting and bus energizing procedures for each Blackstart Resource.   |
| <b>R13.</b> | The Generator Operator with a Blackstart Resource did not notify the Transmission Operator of a known change in Blackstart Resource capability affecting the ability to meet the Transmission Operator’s | The Generator Operator with a Blackstart Resource did not notify the Transmission Operator of a known change in Blackstart Resource capability affecting the ability to meet the Transmission Operator’s                               | The Generator Operator with a Blackstart Resource did not notify the Transmission Operator of a known change in Blackstart Resource capability affecting the ability to meet the Transmission Operator’s | The Generator Operator with a Blackstart Resource did not notify the Transmission Operator of a known change in Blackstart Resource capability affecting the ability to meet the Transmission Operator’s |

| R #         | Violation Severity Levels   |   |  |  |
|-------------|---|---|--|--|
|             | Lower VSL   | Moderate VSL  | High VSL   | Severe VSL   |
|             | restoration plan within 24 hours but did make the notification within 48 hours.   | restoration plan within 48 hours but did make the notification within 72 hours.   | restoration plan within 72 hours but did make the notification within 96 hours.  | restoration plan for more than 96 hours.   |
| <b>R14.</b> | <p>The Generator Operator with a Blackstart Resource performed tests and maintained records but the records did not include all of the items in Requirement R14, Part 14.1.</p> <p>OR</p> <p>The Generator Operator did not supply the Blackstart Resource testing records as requested for 31 to 60 calendar days after the request.</p> | <p>The Generator Operator with a Blackstart Resource performed tests and maintained records but did not supply the Blackstart Resource testing records as requested for 61 to 90 calendar days after the request.</p> | <p>The Generator Operator with a Blackstart Resource performed tests but either did not maintain records or did not supply the Blackstart Resource testing records as requested within 91 or more calendar days after the request.</p> | <p>The Generator Operator with a Blackstart Resource did not perform Blackstart Resource tests.</p>  |
| <b>R15.</b> | <p>The Generator Operator with a Blackstart Resource did not train less than or equal to 10% of the personnel required by Requirement R15 within a <del>24-calendar-month</del><br/><del>two-calendar-year</del> period.</p>  | <p>The Generator Operator with a Blackstart Resource did not train more than 10% and less than or equal to 25% of the personnel required by Requirement R15 within a <del>24-calendar-</del></p>                      | <p>The Generator Operator with a Blackstart Resource did not train more than 25% and less than or equal to 50% of the personnel required by Requirement R15 within a <del>t</del><del>24-calendar-</del></p>                           | <p>The Generator Operator with a Blackstart Resource did not train more than 50% of the personnel required by Requirement R15 within a <del>24-calendar-month</del><br/><del>two-calendar-year</del> period.</p> |

| R #  | Violation Severity Levels |   |   |  |
|------|---------------------------|---|---|--|
|      | Lower VSL                 | Moderate VSL  | High VSL  | Severe VSL   |
|      |                           | <del>month</del> <sup>two-calendar-year</sup> period. | <del>month</del> <sup>two-calendar-year</sup> period. |  |
| R16. | N/A                       | N/A   | N/A   | The Generator Operator failed to participate in the Reliability Coordinator’s restoration drills, exercises, or simulations as requested by the Reliability Coordinator. |

**D. Regional Variances**

None.

**E. Associated Documents**

[Link](#) to the Implementation Plan and other important associated documents.

## Version History

| Version | Date              | Action  | Change Tracking  |
|---------|-------------------|---|--|
| 0       | April 1, 2005     | Effective Date  | New  |
| 0       | August 8, 2005    | Removed “Proposed” from Effective Date  | Errata   |
| 1       | May 2, 2007       | Approved by the Board of Trustees   | Revised  |
| 2       |                   | Revisions pursuant to Project 2006-03   | Updated testing requirements<br>Incorporated Attachment 1 into the requirements. Updated Measures and Compliance to match new requirements |
| 2       | August 5, 2009    | Adopted by Board of Trustees  | Revised  |
| 2       | March 17, 2011    | Order issued by FERC approving EOP-005-2 (approval effective 5/23/11)   |  |
| 2       | February 7, 2013  | R3.1 and associated elements approved by NERC Board of Trustees for retirement as part of the Paragraph 81 project (Project 2013-02) pending applicable regulatory approval |  |
| 2       | July 1, 2013      | Updated VRFs and VSLs based on June 24, 2013 approval   |  |
| 2       | November 21, 2013 | R3.1 and associated elements approved by FERC for retirement as part of the Paragraph 81 project (Project 2013-02)  |  |

## Rationale

During development of this standard, text boxes were embedded within the standard to explain the rationale for various parts of the standard. Upon BOT adoption, the text from the rationale text boxes was moved to this section.