

**Reliability Standard Audit Worksheet[[1]](#footnote-1)**

# EOP-005-2 – System Restoration from Blackstart Resources

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

**Registered Entity:**

**NCR Number:**

**Applicable Function(s):** GOP, TOP, TO, and DPs identified in the TOP restoration plan

**Compliance Assessment Date:**

**Compliance Monitoring Method:**

**Names of Auditors:**

# **Subject Matter Experts**

Identify Subject Matter Expert(s) responsible for this Reliability Standard. (Insert additional rows if necessary)

**Registered Entity Response (Required):**

|  |  |  |  |
| --- | --- | --- | --- |
| **SME Name** | **Title** | **Organization** | **Requirement(s)** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

# **R1 Supporting Evidence and Documentation**

**R1.** Each Transmission Operator shall have a restoration plan approved by its Reliability Coordinator. The restoration plan shall allow for restoring 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 shut down 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:

**R1.1.** Strategies for system restoration that are coordinated with the Reliability Coordinator’s high level strategy for restoring the Interconnection.

**R1.2.** A description of how all Agreements or mutually agreed upon procedures or protocols for off-site power requirements of nuclear power plants, including priority of restoration, will be fulfilled during System restoration.

**R1.3.** Procedures for restoring interconnections with other Transmission Operators under the direction of the Reliability Coordinator.

**R1.4.** 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.

**R1.5.** Identification of Cranking Paths and initial switching requirements between each Blackstart Resource and the unit(s) to be started.

**R1.6.** Identification of acceptable operating voltage and frequency limits during restoration.

**R1.7.** Operating Processes to reestablish connections within the Transmission Operator’s System for areas that have been restored and are prepared for reconnection.

**R1.8.** 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.

**R1.9.** Operating Processes for transferring authority back to the Balancing Authority in accordance with the Reliability Coordinator’s criteria.

**Registered Entity Response (Required):**

Describe, in narrative form, how you meet compliance with this Requirement.

**Registered Entity Evidence (Required):**

|  |
| --- |
| Provide the following for all evidence submitted (Insert additional rows if necessary):  File Name, File Extension, Document Title, Revision, Date, Page(s), Section(s), Section Title(s), Description |
|  |
|  |
|  |

**Audit Team Evidence Reviewed** **(This section must be completed by the Compliance Enforcement Authority):**

|  |
| --- |
|  |
|  |
|  |

**Compliance Assessment Approach Specific to EOP-005-2, R1**

**(This section must be completed by the Compliance Enforcement Authority)**

Review the evidence to:

|  |  |
| --- | --- |
|  | Verify each Transmission Operator has a dated, documented System restoration plan developed in accordance with R1 that has been approved by its Reliability Coordinator as shown with the documented approval from its Reliability Coordinator. |
|  | Verify the restoration plan includes: |
|  | (R1.1) Strategies for system restoration that are coordinated with the Reliability Coordinator’s high level strategy for restoring the Interconnection. |
|  | (R1.2) A description of how all Agreements or mutually agreed upon procedures or protocols for off-site power requirements of nuclear power plants, including priority of restoration, will be fulfilled during System restoration. |
|  | (R1.3) Procedures for restoring interconnections with other Transmission Operators under the direction of the Reliability Coordinator. |
|  | (R1.4) Identification of each Blackstart Resource and its characteristics including but not limited to the following: |
|  | (R1.4) The name of each Blackstart Resource, |
|  | (R1.4) Location of each Blackstart Resource, |
|  | (R1.4) Megawatt and megavar capacity of each Blackstart Resource, and |
|  | (R1.4) Type of each Blackstart Resource. |
|  | (R1.5) Identification of Cranking Paths and initial switching requirements between each Blackstart Resource and the unit(s) to be started. |
|  | (R1.6) Identification of acceptable operating voltage and frequency limits during restoration. |
|  | (R1.7) Operating Processes to reestablish connections within the Transmission Operator’s System for areas that have been restored and are prepared for reconnection. |
|  | (R1.8) 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. |
|  | (R1.9) Operating Processes for transferring authority back to the Balancing Authority in accordance with the Reliability Coordinator’s criteria. |
| **Note to Auditor:** R6 of EOP-006-2 requires that each RC initially have a copy of the latest approved restoration plan of each Transmission Operator available to all System Operators prior to July 1, 2013. In addition, R 5.1 (of EOP-006-2) requires the Reliability Coordinator to approve or disapprove with stated reasons the Transmission Operator submitted restoration plan within 30 calendar days following the receipt from the Transmission Operator. These obligations and timeframes should be taken into account when evaluating the Transmission Operator’s compliance with R1 of EOP-005-2. Specifically, auditors should consider whether the Transmission Operator has submitted its initial restoration plan to the Reliability Coordinator within a reasonable time period before July 1, 2013 to allow for approval on or before July 1, 2013. | |

**Auditor Notes:**

|  |
| --- |
|  |

# **R2 Supporting Evidence and Documentation**

**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 implementation date of the plan.

**Question:** Have there been any changes to the approved restoration plan that resulted in changes to the identified entities’ roles and specific tasks? If yes, provide evidence that notification was made.

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

**Registered Entity Response (Required):**

Describe, in narrative form, how you meet compliance with this Requirement.

**Registered Entity Evidence (Required):**

|  |
| --- |
| Provide the following for all evidence submitted (Insert additional rows if necessary):  File Name, File Extension, Document Title, Revision, Date, Page(s), Section(s), Section Title(s), Description |
|  |
|  |
|  |

**Audit Team Evidence Reviewed** **(This section must be completed by the Compliance Enforcement Authority):**

|  |
| --- |
|  |
|  |
|  |

**Compliance Assessment Approach Specific to EOP-005-2, R2**

**(This section must be completed by the Compliance Enforcement Authority)**

Review the evidence to verify the Registered Entity:

|  |  |
| --- | --- |
|  | Has responded to the applicability question above and provided evidence of compliance if the response was ‘yes.’ |
|  | Had changes to the approved restoration plan. |
|  | Has notified entities identified in its approved restoration plan of any changes to their roles and specific tasks. |
|  | Has made notification of any changes of roles and specific tasks prior to implementation date of the restoration plan. |
| **Note to Auditor:** Evidence may include, but is not limited to, e-mails with receipts or registered mail receipts. | |

**Auditor Notes:**

|  |
| --- |
|  |

# **R3 Supporting Evidence and Documentation**

**R3**. Each Transmission Operator shall review its restoration plan and submit it to its Reliability Coordinator annually on a mutually agreed predetermined schedule.

**R3.1** If there are no changes to the previously submitted restoration plan, the Transmission Operator shall confirm annually on a predetermined schedule to its Reliability Coordinator that it has reviewed its restoration plan and no changes were necessary. (Retirement of R3.1 approved by FERC effective January 21, 2014.)

**Registered Entity Response (Required):**

Describe, in narrative form, how you meet compliance with this Requirement.

**Registered Entity Evidence (Required):**

|  |
| --- |
| Provide the following for all evidence submitted (Insert additional rows if necessary):  File Name, File Extension, Document Title, Revision, Date, Page(s), Section(s), Section Title(s), Description |
|  |
|  |
|  |

**Audit Team Evidence Reviewed** **(This section must be completed by the Compliance Enforcement Authority):**

|  |
| --- |
|  |
|  |
|  |

**Compliance Assessment Approach Specific to EOP-005-2, R3**

**(This section must be completed by the Compliance Enforcement Authority)**

Review the evidence to verify the Registered Entity:

|  |  |
| --- | --- |
|  | Has responded to the applicability question and provided evidence of compliance if the response was yes. |
|  | Verify the restoration plan was reviewed annually. |
|  | Verify the restoration plan was submitted to its Reliability Coordinator on a mutually agreed upon predetermined schedule, and resubmitted if changes were made. |
| **Note to Auditor:** Evidence may include, but is not limited to, a dated review signature sheet, revision histories, e-mails with receipts, or registered mail receipts. (Retirement of R3.1 approved by FERC effective January 21, 2014.) | |

**Auditor Notes:**

|  |
| --- |
|  |

# **R4 Supporting Evidence and Documentation**

**R4.** Each Transmission Operator shall update its restoration plan within 90 calendar days after identifying any unplanned permanent System modifications, or prior to implementing a planned BES modification, that would change the implementation of its restoration plan.

**R4.1** Each Transmission Operator shall submit its revised restoration plan to its Reliability Coordinator for approval within the same 90 calendar day period.

**Question:** Were there any planned or unplanned permanent System modifications that would change the implementation of the restoration plan? If yes, provide evidence that the restoration plan was updated within 90 calendar days after identifying unplanned changes or prior to implementing a planned modification.

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

**Registered Entity Response (Required):**

Describe, in narrative form, how you meet compliance with this Requirement.

**Registered Entity Evidence (Required):**

|  |
| --- |
| Provide the following for all evidence submitted (Insert additional rows if necessary):  File Name, File Extension, Document Title, Revision, Date, Page(s), Section(s), Section Title(s), Description |
|  |
|  |
|  |

**Audit Team Evidence Reviewed** **(This section must be completed by the Compliance Enforcement Authority):**

|  |
| --- |
|  |
|  |
|  |

**Compliance Assessment Approach Specific to EOP-005-2, R4**

**(This section must be completed by the Compliance Enforcement Authority)**

Review the evidence to verify the Registered Entity:

|  |  |
| --- | --- |
|  | Has responded to the applicability question and provided evidence of compliance if the response was ‘yes.’ |
|  | Verify the entity updated its restoration plan within 90 calendar days after identifying any unplanned permanent System modifications that would change the implementation of its restoration plan. |
|  | Verify the entity updated its restoration plan prior to implementing a planned BES modification that would change the implementation of its restoration plan. |
|  | (R4.1) Verify the entity submitted its revised restoration plan to its Reliability Coordinator for approval within the same 90 calendar day period. |
| **Note to Auditor:** | |

**Auditor Notes:**

|  |
| --- |
|  |

# **R5 Supporting Evidence and Documentation**

**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 implementation date.

**Registered Entity Response (Required):**

Describe, in narrative form, how you meet compliance with this Requirement.

**Registered Entity Evidence (Required):**

|  |
| --- |
| Provide the following for all evidence submitted (Insert additional rows if necessary):  File Name, File Extension, Document Title, Revision, Date, Page(s), Section(s), Section Title(s), Description |
|  |
|  |
|  |

**Audit Team Evidence Reviewed** **(This section must be completed by the Compliance Enforcement Authority):**

|  |
| --- |
|  |
|  |
|  |

**Compliance Assessment Approach Specific to EOP-005-2, R5**

**(This section must be completed by the Compliance Enforcement Authority)**

Review the evidence to:

|  |  |
| --- | --- |
|  | Verify the entity has a copy of its latest Reliability Coordinator approved restoration plan within its primary and backup control rooms. |
|  | Verify the copy was made available prior to its implementation date. |
| **Note to Auditor:** | |

**Auditor Notes:**

|  |
| --- |
|  |

# **R6 Supporting Evidence and Documentation**

**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 every five years at a minimum. Such analysis, simulations or testing shall verify:

**R6.1.** 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.

**R6.2.** The location and magnitude of Loads required to control voltages and frequency within acceptable operating limits.

**R6.3.** The capability of generating resources required to control voltages and frequency within acceptable operating limits.

**Registered Entity Response (Required):**

Describe, in narrative form, how you meet compliance with this Requirement.

**Registered Entity Evidence (Required):**

|  |
| --- |
| Provide the following for all evidence submitted (Insert additional rows if necessary):  File Name, File Extension, Document Title, Revision, Date, Page(s), Section(s), Section Title(s), Description |
|  |
|  |
|  |

**Audit Team Evidence Reviewed** **(This section must be completed by the Compliance Enforcement Authority):**

|  |
| --- |
|  |
|  |
|  |

**Compliance Assessment Approach Specific to EOP-005-2, R6**

**(This section must be completed by the Compliance Enforcement Authority)**

Review the evidence to:

|  |  |
| --- | --- |
|  | Determine if the entity verified through analysis of actual events, steady state and dynamic simulations, or testing that its restoration plan accomplishes its intended function to: |
|  | (R6.1) Verify 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. |
|  | (R6.2) Verify the location and magnitude of Loads required to control voltages and frequency within acceptable operating limits. |
|  | (R6.3) Verify the capability of generating resources required to control voltages and frequency within acceptable operating limits. |
|  | Verify the entity completed this analysis every five years at a minimum. |
| **Note to Auditor:** Verify the entity has documentation such as, but not limited to, power flow outputs, demonstrating it has verified that its latest restoration plan will accomplish its intended function. Auditors should verify that the timeframe for completion of the analysis or testing contemplated in R6 does not exceed five years from the date of the last analysis or testing performed by the entity. | |

**Auditor Notes:**

|  |
| --- |
|  |

# **R7 Supporting Evidence and Documentation**

**R7.** Following a Disturbance in which one or more areas of the BES shuts down and the use of Blackstart Resources is required to restore the shut down area to service, each affected Transmission Operator shall implement its restoration plan. If the restoration plan cannot be executed as expected the Transmission Operator shall utilize its restoration strategies to facilitate restoration.

**Question:** Has there been a Disturbance in which one or more areas of the BES shut down and in which Blackstart Resources were utilized in restoring the shut down area of the BES? If Yes, provide evidence of compliance.

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

**Registered Entity Response (Required):**

Describe, in narrative form, how you meet compliance with this Requirement.

**Registered Entity Evidence (Required):**

|  |
| --- |
| Provide the following for all evidence submitted (Insert additional rows if necessary):  File Name, File Extension, Document Title, Revision, Date, Page(s), Section(s), Section Title(s), Description |
|  |
|  |
|  |

**Audit Team Evidence Reviewed** **(This section must be completed by the Compliance Enforcement Authority):**

|  |
| --- |
|  |
|  |
|  |

**Compliance Assessment Approach Specific to EOP-005-2, R7**

**(This section must be completed by the Compliance Enforcement Authority)**

Review the evidence to verify:

|  |  |
| --- | --- |
|  | The entity has responded to the applicability question and provided evidence of compliance if the response was ‘yes.’ |
|  | The entity implemented its restoration plan. |
|  | The entity utilized its restoration strategies to facilitate restoration if the restoration plan could not be executed as expected. |
| **Note to Auditor:** Evidence may include, but is not limited to, voice recordings, e-mail, dated computer printouts, or operator logs. | |

**Auditor Notes:**

|  |
| --- |
|  |

# **R8 Supporting Evidence and Documentation**

**R8.** Following a Disturbance in which one or more areas of the BES shuts down and the use of Blackstart Resources is required to restore the shut down area to service, the Transmission Operator shall resynchronize area(s) with neighboring Transmission Operator area(s) only with the authorization of the Reliability Coordinator or in accordance with the established procedures of the Reliability Coordinator.

**Question:** Has there been a Disturbance in which one or more areas of the BES shut down and in which Blackstart Resources were utilized in restoring the shut down area of the BES? If Yes, provide evidence of compliance.

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

**Registered Entity Response (Required):**

Describe, in narrative form, how you meet compliance with this Requirement.

**Registered Entity Evidence (Required):**

|  |
| --- |
| Provide the following for all evidence submitted (Insert additional rows if necessary):  File Name, File Extension, Document Title, Revision, Date, Page(s), Section(s), Section Title(s), Description |
|  |
|  |
|  |

**Audit Team Evidence Reviewed** **(This section must be completed by the Compliance Enforcement Authority):**

|  |
| --- |
|  |
|  |
|  |

**Compliance Assessment Approach Specific to EOP-005-2, R8**

**(This section must be completed by the Compliance Enforcement Authority)**

Review the evidence to verify:

|  |  |
| --- | --- |
|  | The entity responded to the applicability question and provided evidence of compliance if the response was ‘yes.’ |
|  | The entity resynchronized shut down areas with adjacent Transmission Operators: |
|  | * With the authorization of the Reliability Coordinator. |
|  | * In accordance with the established procedures of the Reliability Coordinator. |
| **Note to Auditor:** Evidence may include, but is not limited to, voice recordings, e-mail, dated computer printouts, or operator logs. | |

**Auditor Notes:**

|  |
| --- |
|  |

# **R9 Supporting Evidence and Documentation**

**R9** 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:

**R9.1** The frequency of testing such that each Blackstart Resource is tested at least once every three calendar years.

**R9.2** A list of required tests including:

**R9.2.1** 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.

**R9.2.2** 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.

**R9.3** The minimum duration of each of the required tests.

**Registered Entity Response (Required):**

Describe, in narrative form, how you meet compliance with this Requirement.

**Registered Entity Evidence (Required):**

|  |
| --- |
| Provide the following for all evidence submitted (Insert additional rows if necessary):  File Name, File Extension, Document Title, Revision, Date, Page(s), Section(s), Section Title(s), Description |
|  |
|  |
|  |

**Audit Team Evidence Reviewed** **(This section must be completed by the Compliance Enforcement Authority):**

|  |
| --- |
|  |
|  |
|  |

**Compliance Assessment Approach Specific to EOP-005-2, R9**

**(This section must be completed by the Compliance Enforcement Authority)**

Review the evidence to verify:

|  |  |
| --- | --- |
|  | The entity has Blackstart Resource testing requirements in its restoration plan to ensure each Blackstart Resource is capable of meeting the requirements of the restoration plan. Testing requirements shall include: |
|  | (R9.1) The frequency of testing such that each Blackstart Resource is tested at least once every three calendar years. |
|  | (R9.2.1) 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. |
|  | (R9.2.2) 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. See Note to Auditor below. |
|  | (R9.3) The minimum duration of each of the required tests. |
| **Note to Auditor:**  Regarding R9.2.2: Verify required tests were performed for either energizing a bus or for breaker control, if it is not possible to energize a bus for testing. | |

**Auditor Notes:**

|  |
| --- |
|  |

# **R10 Supporting Evidence and Documentation**

**R10** Each Transmission Operator shall include within its operations training program, annual System restoration training for its System Operators to assure the proper execution of its restoration plan. This training program shall include training on the following:

**R10.1** System restoration plan including coordination with the Reliability Coordinator and Generator Operators included in the restoration plan.

**R10.2** Restoration priorities.

**R10.3** Building of cranking paths.

**R10.4** Synchronizing (re-energized sections of the System).

**Registered Entity Response (Required):**

Describe, in narrative form, how you meet compliance with this Requirement.

**Registered Entity Evidence (Required):**

|  |
| --- |
| Provide the following for all evidence submitted (Insert additional rows if necessary):  File Name, File Extension, Document Title, Revision, Date, Page(s), Section(s), Section Title(s), Description |
|  |
|  |
|  |

**Audit Team Evidence Reviewed** **(This section must be completed by the Compliance Enforcement Authority):**

|  |
| --- |
|  |
|  |
|  |

**Compliance Assessment Approach Specific to EOP-005-2, R10**

**(This section must be completed by the Compliance Enforcement Authority)**

Review the evidence to verify:

|  |  |
| --- | --- |
|  | The entity has a training program that is provided to its System Operators for System restoration training. |
|  | The training is performed annually. |
|  | The training program includes: |
|  | (R10.1) System restoration plan including coordination with the Reliability Coordinator and Generator Operators included in the restoration plan. |
|  | (R10.2) Restoration priorities. |
|  | (R10.3) Building of cranking paths. |
|  | (R10.4) Synchronizing (the re-energized sections of the System). |
| **Note to Auditor:** Verify the restoration training includes all System Operators, is performed annually and includes at a minimum R10.1 through R10.4. | |

**Auditor Notes:**

|  |
| --- |
|  |

# **R11 Supporting Evidence and Documentation**

**R11**. 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 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**.**

**Registered Entity Response (Required):**

Describe, in narrative form, how you meet compliance with this Requirement.

**Registered Entity Evidence (Required):**

|  |
| --- |
| Provide the following for all evidence submitted (Insert additional rows if necessary):  File Name, File Extension, Document Title, Revision, Date, Page(s), Section(s), Section Title(s), Description |
|  |
|  |
|  |

**Audit Team Evidence Reviewed** **(This section must be completed by the Compliance Enforcement Authority):**

|  |
| --- |
|  |
|  |
|  |

**Compliance Assessment Approach Specific to EOP-005-2, R11**

**(This section must be completed by the Compliance Enforcement Authority)**

Review the evidence to verify:

|  |  |
| --- | --- |
|  | The entity identifies field switching personnel performing unique tasks associated with the restoration plan that are outside of their normal tasks. |
|  | Field switching personnel performing unique tasks, that are outside of their normal tasks, associated with the restoration plan receive a minimum of two hours of System restoration training every two calendar years. See Note to Auditor below. |
| **Note to Auditor:** Evidence may include, but is not limited to, a copy of training records/materials with training dates, topic, attendees and duration. Initially, entities will have two years from July 1, 2013 to execute this training. | |

**Auditor Notes:**

|  |
| --- |
|  |

# **R12 Supporting Evidence and Documentation**

**R12.** Each Transmission Operator shall participate in its Reliability Coordinator’s restoration drills, exercises, or simulations as requested by its Reliability Coordinator.

**Question:** Has the entity been requested by the Reliability Coordinator to participate in its restoration drills, exercises, or simulations? If yes, provide evidence of participation in restoration drills, exercises, or simulations.

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

**Registered Entity Response (Required):**

Describe, in narrative form, how you meet compliance with this Requirement.

**Registered Entity Evidence (Required):**

|  |
| --- |
| Provide the following for all evidence submitted (Insert additional rows if necessary):  File Name, File Extension, Document Title, Revision, Date, Page(s), Section(s), Section Title(s), Description |
|  |
|  |
|  |

**Audit Team Evidence Reviewed** **(This section must be completed by the Compliance Enforcement Authority):**

|  |
| --- |
|  |
|  |
|  |

**Compliance Assessment Approach Specific to EOP-005-2, R12**

**(This section must be completed by the Compliance Enforcement Authority)**

Review the evidence to:

|  |  |
| --- | --- |
|  | Verify the entity has responded to the applicability question and provided evidence of compliance if the response was yes. |
|  | Validate that the entity, as requested, participated in the Reliability Coordinator’s restoration drills, exercises, or simulations. See Note to Auditor below. |
| **Note to Auditor:** An example of evidence may include, but is not limited to, training records or logs. | |

**Auditor Notes:**

|  |
| --- |
|  |

# **R13 Supporting Evidence and Documentation**

**R13.** 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.

**Registered Entity Response (Required):**

Describe, in narrative form, how you meet compliance with this Requirement.

**Registered Entity Evidence (Required):**

|  |
| --- |
| Provide the following for all evidence submitted (Insert additional rows if necessary):  File Name, File Extension, Document Title, Revision, Date, Page(s), Section(s), Section Title(s), Description |
|  |
|  |
|  |

**Audit Team Evidence Reviewed** **(This section must be completed by the Compliance Enforcement Authority):**

|  |
| --- |
|  |
|  |
|  |

**Compliance Assessment Approach Specific to EOP-005-2, R13**

**(This section must be completed by the Compliance Enforcement Authority)**

Review the evidence to:

|  |  |
| --- | --- |
|  | Verify that the entities with a Blackstart Resource have written Blackstart Resource Agreements or mutually agreed upon procedures or protocols specifying the terms and conditions of their arrangement. |
|  | Verify agreements include reference to the Blackstart Resource testing requirements. |
| **Note to Auditor:** | |

**Auditor Notes:**

|  |
| --- |
|  |

# **R14 Supporting Evidence and Documentation**

**R14.** Each Generator Operator with a Blackstart Resource shall have documented procedures for starting each Blackstart Resource and energizing a bus.

**Registered Entity Response (Required):**

Describe, in narrative form, how you meet compliance with this Requirement.

**Registered Entity Evidence (Required):**

|  |
| --- |
| Provide the following for all evidence submitted (Insert additional rows if necessary):  File Name, File Extension, Document Title, Revision, Date, Page(s), Section(s), Section Title(s), Description |
|  |
|  |
|  |

**Audit Team Evidence Reviewed** **(This section must be completed by the Compliance Enforcement Authority):**

|  |
| --- |
|  |
|  |
|  |

**Compliance Assessment Approach Specific to EOP-005-2, R14**

**(This section must be completed by the Compliance Enforcement Authority)**

Review the evidence to:

|  |  |
| --- | --- |
|  | Verify the entity with a Blackstart Resource has documented procedures for starting each Blackstart Resource and energizing a bus. |
| **Note to Auditor:** | |

**Auditor Notes:**

|  |
| --- |
|  |

# **R15 Supporting Evidence and Documentation**

**R15.** 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.

**Question:** Has the entity with a Blackstart Resource had any known changes to the capabilities of that Blackstart Resource affecting the ability to meet the Transmission Operator’s restoration plan? If yes, provide details.

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

**Registered Entity Response (Required):**

Describe, in narrative form, how you meet compliance with this Requirement.

**Registered Entity Evidence (Required):**

|  |
| --- |
| Provide the following for all evidence submitted (Insert additional rows if necessary):  File Name, File Extension, Document Title, Revision, Date, Page(s), Section(s), Section Title(s), Description |
|  |
|  |
|  |

**Audit Team Evidence Reviewed** **(This section must be completed by the Compliance Enforcement Authority):**

|  |
| --- |
|  |
|  |
|  |

**Compliance Assessment Approach Specific to EOP-005-2, R15**

**(This section must be completed by the Compliance Enforcement Authority)**

Review the evidence to verify:

|  |  |
| --- | --- |
|  | The entity responded to the applicability Question and provided evidence of compliance if the response was ‘yes.’ |
|  | The entity with a Blackstart Resource notified 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. |
| **Note to Auditor:** | |

**Auditor Notes:**

|  |
| --- |
|  |

# **R16 Supporting Evidence and Documentation**

**R16** 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.

**R16.1** 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 R9.

**R16.2**  Each Generator Operator shall provide the blackstart test results within 30 calendar days following a request from its Reliability Coordinator or Transmission Operator.

**Registered Entity Response (Required):**

Describe, in narrative form, how you meet compliance with this Requirement.

**Registered Entity Evidence (Required):**

|  |
| --- |
| Provide the following for all evidence submitted (Insert additional rows if necessary):  File Name, File Extension, Document Title, Revision, Date, Page(s), Section(s), Section Title(s), Description |
|  |
|  |
|  |

**Audit Team Evidence Reviewed** **(This section must be completed by the Compliance Enforcement Authority):**

|  |
| --- |
|  |
|  |
|  |

**Compliance Assessment Approach Specific to EOP-005-2, R16**

**(This section must be completed by the Compliance Enforcement Authority)**

Review the evidence to verify:

|  |  |
| --- | --- |
|  | The entity maintains Blackstart Resource test records. |
|  | The entity Blackstart Resource testing is 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. |
|  | (R16.1) Test records shall include at a minimum: |
|  | (R16.1) Name of the Blackstart Resource unit tested. |
|  | (R16.1) Date of the test. |
|  | (R16.1) Duration of the test. |
|  | (R16.1) Time required to start the unit. |
|  | (R16.1) Any testing requirements not met under R9. |
|  | (R16.2) The entity has documentation such as e-mails with receipts, or registered mail receipts, that it provided the blackstart test results within 30 calendar days following a request from its Reliability Coordinator or Transmission Operator. |
| **Note to Auditor:** | |

**Auditor Notes:**

|  |
| --- |
|  |

# **R17 Supporting Evidence and Documentation**

**R17** Each Generator Operator with a Blackstart Resource shall provide a minimum of two hours of training every two calendar years 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:

**R17.1** System restoration plan including coordination with the Transmission Operator.

**R17.2** The procedures documented in Requirement R14.

**Registered Entity Response (Required):**

Describe, in narrative form, how you meet compliance with this Requirement.

**Registered Entity Evidence (Required):**

|  |
| --- |
| Provide the following for all evidence submitted (Insert additional rows if necessary):  File Name, File Extension, Document Title, Revision, Date, Page(s), Section(s), Section Title(s), Description |
|  |
|  |
|  |

**Audit Team Evidence Reviewed** **(This section must be completed by the Compliance Enforcement Authority):**

|  |
| --- |
|  |
|  |
|  |

**Compliance Assessment Approach Specific to EOP-005-2, R17**

**(This section must be completed by the Compliance Enforcement Authority)**

Review the evidence to:

|  |  |
| --- | --- |
|  | Verify the entity with a Blackstart Resource has provided a minimum of two hours of training every two calendar years to each of its operating personnel responsible for the startup of its Blackstart Resource generation units. See Note to Auditor below. |
|  | Verify the training program includes: |
|  | (R17.1) System Restoration plan including coordination with the Transmission Operator. See Note to Auditor below. |
|  | (R17.2) The procedures documented in R14 for starting a blackstart resource and energizing a bus. |
| **Note to Auditor:** Evidence may include, but is not limited to, a copy of training records/materials with training dates, topic, attendees and duration. Evidence associated with R17.1 may include, but is not limited to, training materials showing the Generator Operator training included coordination with the Transmission Operator. Initially, entities will have two years from July 1, 2013 to execute this training. | |

**Auditor Notes:**

|  |
| --- |
|  |

# **R18 Supporting Evidence and Documentation**

**R18.** Each Generator Operator shall participate in the Reliability Coordinator’s restoration drills, exercises, or simulations as requested by the Reliability Coordinator.

**Question:** Has the entity been requested by the Reliability Coordinator to participate in its restoration drills, exercises, or simulations? If yes, provide evidence of compliance.

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

**Registered Entity Response (Required):**

Describe, in narrative form, how you meet compliance with this Requirement.

**Registered Entity Evidence (Required):**

|  |
| --- |
| Provide the following for all evidence submitted (Insert additional rows if necessary):  File Name, File Extension, Document Title, Revision, Date, Page(s), Section(s), Section Title(s), Description |
|  |
|  |
|  |

**Audit Team Evidence Reviewed** **(This section must be completed by the Compliance Enforcement Authority):**

|  |
| --- |
|  |
|  |
|  |

**Compliance Assessment Approach Specific to EOP-005-2, R18**

**(This section must be completed by the Compliance Enforcement Authority)**

Review the evidence to:

|  |  |
| --- | --- |
|  | Verify the entity responded to the applicability question and provided evidence of compliance if the response was yes. |
|  | Verify the entity has evidence such as, but not limited to dated training records, that it participated in the Reliability Coordinator’s restoration drills, exercises, or simulations if requested to do so. |
| **Note to Auditor:** | |

**Auditor Notes:**

|  |
| --- |
|  |

# **Compliance Finding Summary**

**(This section must be completed by the Compliance Enforcement Authority)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Req.** | **NF** | **PV** | **OEA** | **NA** | **Statement** |
| **1** |  |  |  |  |  |
| **2** |  |  |  |  |  |
| **3** |  |  |  |  |  |
| **4** |  |  |  |  |  |
| **5** |  |  |  |  |  |
| **6** |  |  |  |  |  |
| **7** |  |  |  |  |  |
| **8** |  |  |  |  |  |
| **9** |  |  |  |  |  |
| **10** |  |  |  |  |  |
| **11** |  |  |  |  |  |
| **12** |  |  |  |  |  |
| **13** |  |  |  |  |  |
| **14** |  |  |  |  |  |
| **15** |  |  |  |  |  |
| **16** |  |  |  |  |  |
| **17** |  |  |  |  |  |
| **18** |  |  |  |  |  |

# **Additional Information:**

**Reliability Standard**

1. Introduction
2. **Title: System Restoration from Blackstart Resources**
3. **Number:** EOP-005-2
4. **Purpose:** Ensure plans, Facilities, and personnel are prepared to enable System restoration from Blackstart Resources to assure reliability is maintained during restoration and priority is placed on restoring the Interconnection.
5. **Applicability:**
   1. Transmission Operators.
   2. Generator Operators.
   3. Transmission Owners identified in the Transmission Operators restoration plan.
   4. Distribution Providers identified in the Transmission Operators restoration plan.
6. **Proposed Effective Date:** Twenty-four months after the first day of the first calendar quarter following applicable regulatory approval. In those jurisdictions where no regulatory approval is required, all requirements go into effect twenty-four months after Board of Trustees adoption.
7. Requirements
8. Each Transmission Operator shall have a restoration plan approved by its Reliability Coordinator. The restoration plan shall allow for restoring 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 shut down 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]*
   1. Strategies for system restoration that are coordinated with the Reliability Coordinator’s high level strategy for restoring the Interconnection.
   2. A description of how all Agreements or mutually agreed upon procedures or protocols for off-site power requirements of nuclear power plants, including priority of restoration, will be fulfilled during System restoration.
   3. Procedures for restoring interconnections with other Transmission Operators under the direction of the Reliability Coordinator.
   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.
   5. Identification of Cranking Paths and initial switching requirements between each Blackstart Resource and the unit(s) to be started.
   6. Identification of acceptable operating voltage and frequency limits during restoration.
   7. Operating Processes to reestablish connections within the Transmission Operator’s System for areas that have been restored and are prepared for reconnection.
   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.
   9. Operating Processes for transferring authority back to the Balancing Authority in accordance with the Reliability Coordinator’s criteria.
9. 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 implementation date of the plan. *[Violation Risk Factor = Lower] [Time Horizon = Operations Planning]*
10. Each Transmission Operator shall review its restoration plan and submit it to its Reliability Coordinator annually on a mutually agreed predetermined schedule. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
    1. If there are no changes to the previously submitted restoration plan, the Transmission Operator shall confirm annually on a predetermined schedule to its Reliability Coordinator that it has reviewed its restoration plan and no changes were necessary.
11. Each Transmission Operator shall update its restoration plan within 90 calendar days after identifying any unplanned permanent System modifications, or prior to implementing a planned BES modification, that would change the implementation of its restoration plan. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
    1. Each Transmission Operator shall submit its revised restoration plan to its Reliability Coordinator for approval within the same 90 calendar day period.
12. 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 implementation date. *[Violation Risk Factor = Lower] [Time Horizon = Operations Planning]*
13. 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 every five years at a minimum. Such analysis, simulations or testing shall verify: *[Violation Risk Factor = Medium] [Time Horizon = Long-term Planning]*
    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.
    2. The location and magnitude of Loads required to control voltages and frequency within acceptable operating limits.
    3. The capability of generating resources required to control voltages and frequency within acceptable operating limits.
14. Following a Disturbance in which one or more areas of the BES shuts down and the use of Blackstart Resources is required to restore the shut down area to service, each affected Transmission Operator shall implement its restoration plan. If the restoration plan cannot be executed as expected the Transmission Operator shall utilize its restoration strategies to facilitate restoration. *[Violation Risk Factor = High] [Time Horizon = Real-time Operations]*
15. Following a Disturbance in which one or more areas of the BES shuts down and the use of Blackstart Resources is required to restore the shut down area to service, the Transmission Operator shall resynchronize area(s) with neighboring Transmission Operator area(s) only with the authorization of the Reliability Coordinator or in accordance with the established procedures of the Reliability Coordinator. *[Violation Risk Factor = High] [Time Horizon = Real-time Operations]*
16. 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]*
    1. The frequency of testing such that each Blackstart Resource is tested at least once every three calendar years.
    2. A list of required tests including:
       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.
       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.
    3. The minimum duration of each of the required tests.
17. Each Transmission Operator shall include within its operations training program, annual System restoration training for its System Operators to assure the proper execution of its restoration plan. This training program shall include training on the following: *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
    1. System restoration plan including coordination with the Reliability Coordinator and Generator Operators included in the restoration plan.
    2. Restoration priorities.
    3. Building of cranking paths.
    4. Synchronizing (re-energized sections of the System).
18. 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 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]*
19. 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]*
20. 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]*
21. 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]*
22. 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]*
23. 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]*
    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 R9.
    2. Each Generator Operator shall provide the blackstart test results within 30 calendar days following a request from its Reliability Coordinator or Transmission Operator.
24. Each Generator Operator with a Blackstart Resource shall provide a minimum of two hours of training every two calendar years 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]*
    1. System restoration plan including coordination with the Transmission Operator.
    2. The procedures documented in Requirement R14.
25. 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]*
26. Measures
27. 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.
28. Each Transmission Operator shall have evidence such as e-mails with 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 implementation date of the plan in accordance with Requirement R2.
29. Each Transmission Operator shall have documentation such as a dated review signature sheet, revision histories, e-mails with receipts, or registered mail receipts, that it has annually reviewed and submitted the Transmission Operator’s restoration plan to its Reliability Coordinator in accordance with Requirement R3.
30. Each Transmission Operator shall have documentation such as dated review signature sheets, revision histories, e-mails with receipts, or registered mail receipts, that it has updated its restoration plan and submitted it to its Reliability Coordinator in accordance with Requirement R4.
31. Each Transmission Operator shall have documentation that it has made the latest Reliability Coordinator approved copy of its restoration plan available in its primary and backup control rooms and its System Operators prior to its implementation date in accordance with Requirement R5.
32. 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.
33. If there has been a Disturbance in which Blackstart Resources have been utilized in restoring the shut down area of the BES to service, each Transmission Operator involved shall have evidence such as voice recordings, e-mail, dated computer printouts, or operator logs, that it implemented its restoration plan or restoration plan strategies in accordance with Requirement R7.
34. If there has been a Disturbance in which Blackstart Resources have been utilized in restoring the shut down area of the BES to service, each Transmission Operator involved in such an event shall have evidence, such as voice recordings, e-mail, dated computer printouts, or operator logs, that it resynchronized shut down areas in accordance with Requirement R8.
35. Each Transmission Operator shall have documented Blackstart Resource testing requirements in accordance with Requirement R9.
36. 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 R10.
37. 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 R11.
38. Each Transmission Operator shall have evidence, such as training records, that it participated in the Reliability Coordinator’s restoration drills, exercises, or simulations as requested in accordance with Requirement R12.
39. 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 R13.
40. 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 R14.
41. Each Generator Operator with a Blackstart Resource shall provide evidence, such as e-mails with receipts or registered mail receipts, showing that it notified its Transmission Operator of any known changes to its Blackstart Resource capabilities within twenty-four hours of such changes in accordance with Requirement R15.
42. 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 R16.
43. 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 R17.
44. 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 R18.
45. Compliance
46. **Compliance Monitoring Process**
    1. **Compliance Enforcement Authority**

Regional Entity.

* 1. **Compliance Monitoring Period and Reset Time Frame**

Not applicable.

* 1. **Compliance Monitoring and Enforcement Processes:**

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

* 1. **Data Retention**

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 since the last compliance audit 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 implementation 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 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.
* Implementation of its restoration plan or restoration plan strategies on any occasion for three calendar years if there has been a Disturbance in which Blackstart Resources have been utilized in restoring the shut down area of the BES to service for Requirement R7, Measure M7.
* Resynchronization of shut down areas on any occasion over three calendar years if there has been a Disturbance in which Blackstart Resources have been utilized in restoring the shut down area of the BES to service for Requirement R8, Measure M8.
* The verification process and results for the current Blackstart Resource testing requirements and the last previous Blackstart Resource testing requirements for Requirement R9, Measure M9.
* Actual training program materials or descriptions for three calendar years for Requirement R10, Measure M10.
* Records of participation in all requested Reliability Coordinator restoration drills, exercises, or simulations since its last compliance audit as well as one previous compliance audit period for Requirement R12, Measure M12.

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:

* Actual training program materials or descriptions and actual training records for three calendar years for Requirement R11, Measure M11.

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 since its last compliance audit for Requirement R13, Measure M13.

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 since its last compliance audit on procedures to start each Blackstart Resources and for energizing a bus for Requirement R14, Measure M14.
  + Notification to its Transmission Operator of any known changes to its Blackstart Resource capabilities over the last three calendar years for Requirement R15, Measure M15.
  + The verification test results for the current set of requirements and one previous set for its Blackstart Resources for Requirement R16, Measure M16.
  + Actual training program materials and actual training records for three calendar years for Requirement R17, Measure M17.

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 compliance audit for Requirement R18, Measure M18.

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 audit records and all requested and submitted subsequent audit records.

* 1. **Additional Compliance Information**

None.

**Regulatory Language**

Order No. 749, 134 FERC ¶ 61,215 (2011)

23. Based on NERC's comment that the term "unique tasks" is to be understood in accordance with the normal meaning of the words and the majority of the commenters' assertions that the variety of approaches to system restoration precludes greater specificity, we find that the term conveys as much precision as circumstances allow. To the extent that it would be helpful to the affected entities to specify in a transmission operator's restoration plan which tasks are deemed unique, the entities are encouraged to do so, but the Commission does not require such specificity at this time.  
   
24. Both EEI and APPA recognize potential benefit in the development of further guidance as to the term "unique tasks," and BPA is uncertain as to the meaning of the term and consequently unsure as to how to demonstrate compliance with its training obligation. NERC, in its comments about the term, states that it "could promote the development of a guideline to aid registered entities in complying with Requirement R11." n23 The Commission notes that this Reliability Standard will not become effective for at least 24 months, during which time ambiguities in language or differences of opinion among affected entities may be resolved in practical ways. Once the Standard is effective, if industry determines that ambiguity with the term arises, it would be appropriate for NERC to consider its proposal to develop a guideline to aid entities in their compliance obligations.

37. We accept the commenters' position that requiring verification of the reliability coordinators' restoration plan through a requirement in EOP-006-2 would be largely duplicative. As commenters point out, Reliability Standard EOP-006-2 requires reliability coordinators to conduct system restoration drills including their constituent transmission operators and generation owners. Such drills, exercises or simulations, together with the verifications carried out by the transmission operators of their restoration plans and approval of their plans by the reliability coordinators under EOP-005-2, serve as verification of the reliability coordinators' plans and as such, should serve to identify difficulties in a reliability coordinator's restoration plan.  
   
38. We agree with EEI that the basis on which a reliability coordinator rejects a restoration plan will necessarily be based on generic engineering criteria easily understood by the transmission operator. We also agree with those commenters who reaffirm that the ultimate arbiter of coordination and compatibility of transmission operators' restoration plans is the reliability coordinator. For these reasons, we do not see a need to direct modifications as Pacificorp and Santa Clara suggest that could circumvent the reliability coordinator's authority concerning the approval or disapproval of a restoration plan. However, we agree with Pacificorp that Reliability Standard EOP-006-2, which establishes requirements to enable coordinated system restoration and ensure reliability is maintained during system restoration, is not the appropriate place to include any specific criteria or procedures for the review and revision of transmission operators' restoration plans. We recognize that documenting such criteria and procedures may have utility in facilitating the settlement of disagreements when a reliability coordinator rejects a transmission operator's restoration plan. Nonetheless, we leave it to the ERO Reliability Standard development process to determine whether the merit is sufficient to compel the development of such criteria or procedures.

**Revision History**

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Date** | **Reviewers** | **Revision Description** |
| 1 | 08/02/2012 | RSAW Working Group | New Document |
| 1.1 | 10/05/2012 | NERC Legal | Regulatory Language Update |
| 1.2 | 05/31/2013 | RSAW Working Group | Edits to timing of periodic requirements, paragraph 81, and RC approval of restoration plans |
| 1.2 | 04/19/2013 | NERC Legal | Regulatory Language Update |
| 1.3 | 06/18/2015 | RSAWTF, CMFG, ECEMG | Edits to R17 to reflect language of the requirement |
| 1.4 | 12/22/2015 | RSAWTF, NERC Compliance Assurance | Errata - added Megawatt to the compliance assessment approach in R1.4 to reflect the language in the requirement |

1. NERC developed this Reliability Standard Audit Worksheet (RSAW) language in order to facilitate NERC’s and the Regional Entities’ assessment of a registered entity’s compliance with this Reliability Standard. The NERC RSAW language is written to specific versions of each NERC Reliability Standard. Entities using this RSAW should choose the version of the RSAW applicable to the Reliability Standard being assessed. While the information included in this RSAW provides some of the methodology that NERC has elected to use to assess compliance with the requirements of the Reliability Standard, this document should not be treated as a substitute for the Reliability Standard or viewed as additional Reliability Standard requirements. In all cases, the Regional Entity should rely on the language contained in the Reliability Standard itself, and not on the language contained in this RSAW, to determine compliance with the Reliability Standard. NERC’s Reliability Standards can be found on NERC’s website. Additionally, NERC Reliability Standards are updated frequently, and this RSAW may not necessarily be updated with the same frequency. Therefore, it is imperative that entities treat this RSAW as a reference document only, and not as a substitute or replacement for the Reliability Standard. It is the responsibility of the registered entity to verify its compliance with the latest approved version of the Reliability Standards, by the applicable governmental authority, relevant to its registration status.

   The NERC RSAW language contained within this document provides a non‑exclusive list, for informational purposes only, of examples of the types of evidence a registered entity may produce or may be asked to produce to demonstrate compliance with the Reliability Standard. A registered entity’s adherence to the examples contained within this RSAW does not necessarily constitute compliance with the applicable Reliability Standard, and NERC and the Regional Entity using this RSAW reserves the right to request additional evidence from the registered entity that is not included in this RSAW. Additionally, this RSAW includes excerpts from FERC Orders and other regulatory references. The FERC Order cites are provided for ease of reference only, and this document does not necessarily include all applicable Order provisions. In the event of a discrepancy between FERC Orders, and the language included in this document, FERC Orders shall prevail. [↑](#footnote-ref-1)