

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

PER-005-2 – Operations Personnel Training

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

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| **Audit ID:** | Audit ID if available; or REG-NCRnnnnn-YYYYMMDD |
| **Registered Entity:**  | Registered name of entity being audited |
| **NCR Number:**  | NCRnnnnn |
|  **Compliance Enforcement Authority:** | Region or NERC performing audit |
| **Compliance Assessment Date(s)[[2]](#footnote-2):** | Month DD, YYYY, to Month DD, YYYY |
| **Compliance Monitoring Method:**  | Audit |
| **Names of Auditors:**  | Supplied by CEA |

# **Applicability of Requirements**

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|  | **BA** | **DP** | **GO** | **GOP** | **IA** | **LSE** | **PA** | **PSE** | **RC** | **RP** | **RSG** | **TO** | **TOP** | **TP** | **TSP** |
| **R1** | X |  |  |  |  |  |  |  | X |  |  |  | X |  |  |
| **R2** |  |  |  |  |  |  |  |  |  |  |  | X[[3]](#footnote-3) |  |  |  |
| **R3** | X |  |  |  |  |  |  |  | X |  |  | X3 | X |  |  |
| **R4** | X |  |  |  |  |  |  |  | X |  |  | X3 | X |  |  |
| **R5** | X |  |  |  |  |  |  |  | X |  |  |  | X |  |  |
| **R6** |  |  |  | X[[4]](#footnote-4) |  |  |  |  |  |  |  |  |  |  |  |

**Findings**

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

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| **Req.** | **Finding** | **Summary and Documentation** | **Functions Monitored** |
| **R1** |  |  |  |
| **R2** |  |  |  |
| **R3** |  |  |  |
| **R4** |  |  |  |
| **R5** |  |  |  |
| **R6** |  |  |  |

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| **Req.** | **Areas of Concern** |
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| **Req.** | **Recommendations** |
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| **Req.** | **Positive Observations** |
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Subject Matter Experts

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

**Registered Entity Response (Required):**

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| **SME Name** | **Title** | **Organization** | **Requirement(s)** |
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R1 Supporting Evidence and Documentation

1. Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall use a systematic approach to develop and implement a training program for its System Operators as follows:
	1. Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall create a list of Bulk Electric System (BES) company-specific Real-time reliability-related tasks based on a defined and documented methodology.
		1. Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall review, and update if necessary, its list of BES company-specific Real-time reliability-related tasks identified in part 1.1 each calendar year.
	2. Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall design and develop training materials according to its training program, based on the BES company-specific Real-time reliability-related task list created in part 1.1.
	3. Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall deliver training to its System Operator according to its training program.
	4. Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall conduct an evaluation each calendar year of the training program established in Requirement R1 to identify any needed changes to the training program and shall implement the changes identified.
2. Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have available for inspection evidence of using a systematic approach to develop and implement a training program, as specified in Requirement R1.
	1. Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have available for inspection its methodology and its BES company-specific Real-time reliability-related task list, with the date of the last review, as specified in Requirement R1 part 1.1 and part 1.1.1.
	2. Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have available for inspection training materials, as specified in Requirement R1 part 1.2.
	3. Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have available for inspection System Operator training records showing the names of the people trained, the title of the training delivered, and the dates of delivery to show that it delivered the training, as specified in Requirement R1 part 1.3.
	4. Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have available for inspection evidence (such as instructor observations, trainee feedback, supervisor feedback, course evaluations, learning assessments, or internal audit results) that it performed an evaluation of its training program each calendar year, as specified in Requirement R1 part 1.4.

**Registered Entity Response to General Compliance with this Requirement (Required):**

Provide a brief explanation, in your own words, of how you meet compliance with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Evidence Requested[[5]](#footnote-5):

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| Provide the following evidence, or other evidence to demonstrate compliance. If the provisioning of this evidence is burdensome or otherwise unreasonable, contact your CEA to arrange for possible sampling or other means of reduction of the quantity of evidence submitted. |
| The training program for the System Operators including the documented systematic approach to training (SAT) used to develop the training program, plans for initial and continuing training, and training staff competent in knowledge of both system operations and instructional capabilities consistent with the SAT. |
| (Part 1.1) List of BES company-specific Real-time reliability-related tasks and documented methodology for developing task list. |
| (Part 1.1.1) Evidence of review and update of the task list each calendar year.  |
| (Part 1.2) Learning objectives and training materials based on the list of tasks created in R1.1. |
| (Part 1.3) A list of all System Operators and associated training records sufficient to demonstrate delivery of the training according to the training program. |
| (Part 1.4) Evidence demonstrating evaluation of the training program occurred every calendar year and a list of needed changes identified by the evaluation, and how those changes were implemented. |

Registered Entity Evidence (Required):

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| The following information is recommended for all evidence submitted: File Name, Document Title, Revision, Date, Page(s), Section(s), Section Title(s), DescriptionAlso, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found. |
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Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):

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Compliance Assessment Approach Specific to PER-005-2, R1

***This section to be completed by the Compliance Enforcement Authority***

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| Evaluate if the entity developed and implemented a training program for its System Operators as follows: |
|  | A documented systematic approach to training used to develop the training program. |
|  | Training plans for initial and continuing training |
|  | Training staff that is competent in knowledge of both system operations and instructional capabilities consistent with the SAT. |
|  | Evidence the program has been implemented such as a training calendar, development of training materials, delivery of learning activities, etc. |
|  | (Part 1.1) Verify the entity followed its defined and documented methodology to create a list of BES company-specific Real-time reliability-related tasks performed by its System Operators.  |
|  | (Part 1.1.1) Verify the entity reviewed and updated if needed, the list of tasks identified in part 1.1 each calendar year. |
|  | (Part 1.2) Verify through review of training materials to determine if they are based on the BES company-specific Real-time reliability-related task list. Consider sampling for additional examples of training materials as appropriate. |
|  | (Part 1.3) Verify through comparison of a list of all System Operators against associated training records sufficient to demonstrate delivery of training consistent with the entity’s training plans for initial and continuing training.  |
|  | (Part 1.4) Verify evaluation of the training program occurred every calendar year. Review list of any changes to the training program based on the review and examine documentation to gain reasonable assurance changes identified were implemented into the training program.  |
| **Note to Auditor:** ***Definition of System Operator*** *An individual at a Control Center of a Balancing Authority, Transmission Operator, or Reliability Coordinator, who operates or directs the operation of the Bulk Electric System in Real-Time.*Although additional personnel beyond the System Operators may be included in the training program, compliance is evaluated under R1 only for the System Operators as per the NERC Glossary definition.The term ADDIE has become a colloquial term representing the elements associated with a systematic approach to training, but use of the specific ADDIE model is not required. An acceptable “systematic approach to training” includes the following characteristics: Assess training needs (analysis)Conduct the training activity (design, develop and implement)Evaluate the training activity (evaluate the effectiveness of the training)FERC Order 742 states a systematic approach to training includes continuing training, competency of training staff, and states these are enforceable components of R1.* Paragraph 34 – Continuing Training
* Paragraph 38 – Training Staff

In terms of updates to the task lists, changes such as simply rewording for clarification, that do not affect task performance or the knowledge or tools used to perform the task, are not considered a task modification.The analysis phase is the foundational element of a SAT for all subsequent design, development, implementation and evaluation activities. The auditor shall review the process used in developing the initial list of tasks, in conducting the annual review of the task list, and conducting the annual review of the training program for consistency with an SAT. Undocumented methods may suggest the SAT was not sufficiently utilized in creating, managing and evaluating the training program as required in R1. |

Auditor Notes:

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R2 Supporting Evidence and Documentation

1. Each Transmission Owner shall use a systematic approach to develop and implement a training program for its personnel identified in Applicability Section 4.1.4.1 of this standard as follows:
	1. Each Transmission Owner shall create a list of BES company-specific Real-time reliability-related tasks based on a defined and documented methodology.
		1. Each Transmission Owner shall review, and update if necessary, its list of BES company-specific Real-time reliability-related tasks identified in part 2.1 each calendar year.
	2. Each Transmission Owner shall design and develop training materials according to its training program, based on the BES company-specific Real-time reliability-related task list created in part 2.1.
	3. Each Transmission Owner shall deliver training to its personnel identified in Applicability Section 4.1.4.1 of this standard according to its training program.
	4. Each Transmission Owner shall conduct an evaluation each calendar year of the training program established in Requirement R2 to identify any needed changes to the training program and shall implement the changes identified.
2. Each Transmission Owner shall have available for inspection evidence of using a systematic approach to training to develop and implement a training program for its applicable personnel, as specified in Requirement R2.
	1. Each Transmission Owner shall have available for inspection its methodology and its BES company-specific Real-time reliability-related task list, with the date of the last review, as specified in Requirement R2 part 2.1.
	2. Each Transmission Owner shall have available for inspection training materials, as specified in Requirement R2 part 2.2.
	3. Each Transmission Owner shall have available for inspection training records showing the names of the people trained, the title of the training delivered, and the dates of delivery to show that it delivered the training, as specified in Requirement R2 part 2.3.
	4. Each Transmission Owner shall have available for inspection evidence (such as instructor observations, trainee feedback, supervisor feedback, course evaluations, learning assessments, or internal audit results) that it performed an evaluation of its training program each calendar year, as specified in Requirement R2 part 2.4.

**Registered Entity Response to General Compliance with this Requirement (Required):**

Describe, in narrative form, how you meet compliance with this Requirement. Provide a brief explanation, in your own words, of how you meet compliance with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Evidence Requested[[6]](#footnote-6):

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| Provide the following evidence, or other evidence to demonstrate compliance.  |
| The training program for the personnel including the documented systematic approach to training (SAT) used to develop the training program, plans for initial and continuing training, and training staff competent in knowledge of both system operations and instructional capabilities consistent with the SAT. |
| (Part 2.1) List of BES company-specific Real-time reliability-related tasks and documented methodology for developing task list. |
| (Part 2.1.1) Evidence of review and update of the task list each calendar year.  |
| (Part 2.2) Learning objectives and training materials based on the list of tasks created in R1.1. |
| (Part 2.3) A list of all personnel and associated training records sufficient to demonstrate delivery of the training according to the training program. |
| (Part 2.4) Evidence demonstrating evaluation of the training program occurred every calendar year and a list of needed changes to the training program based on the evaluations, and how those changes were implemented. |

Registered Entity Evidence (Required):

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| The following information is recommended for all evidence submitted: File Name, Document Title, Revision, Date, Page(s), Section(s), Section Title(s), DescriptionAlso, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found. |
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Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):

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Compliance Assessment Approach Specific to PER-005-2, R2

***This section to be completed by the Compliance Enforcement Authority***

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| Evaluate if the entity developed and implemented a training program for its personnel as follows: |
|  | A documented systematic approach to training used to develop the training program. |
|  | Training plans for initial and continuing training |
|  | Training staff that is competent in knowledge of both system operations and instructional capabilities consistent with the SAT. |
|  | Evidence the program has been implemented such as a training calendar, development of training materials, delivery of learning activities, etc. |
|  | (Part 2.1) Verify the entity followed its defined and documented methodology to create a list of BES company-specific Real-time reliability-related tasks performed by its personnel.  |
|  | (Part 2.1.1) Verify the entity reviewed and updated if needed, the list of tasks identified in part 2.1 each calendar year. |
|  | (Part 2.2) Verify through review of training materials to determine if they support the BES company-specific Real-time reliability-related task list. Consider sampling for additional examples of training materials as appropriate. |
|  | (Part 2.3) Verify through comparison of a list of all personnel against associated training records sufficient to demonstrate delivery of training consistent with the entity’s training plans for initial and continuing training.  |
|  | (Part 2.4) Verify evaluation of the training program occurred every calendar year. Review list of any changes to the training program based on the review and examine documentation to gain reasonable assurance changes identified were implemented into the training program.  |
| **Note to Auditor:** The NERC Glossary Definition of System Operator applies only to entities registered as RC, BA or TOP. Since R2 applies to a unique situation of Transmission Owner, the standard uses the term “personnel identified in Applicability Section 4.1.4.1,” rather than System Operator.The term ADDIE has become a colloquial term representing the elements associated with a systematic approach to training, but use of the specific ADDIE model is not required. An acceptable “systematic approach to training” includes the following characteristics: Assess training needs (analysis)Conduct the training activity (design, develop and implement)Evaluate the training activity (evaluate the effectiveness of the training)FERC Order 742 states a systematic approach to training includes continuing training, competency of training staff, and states these are enforceable components of R1.* Paragraph 34 – Continuing Training
* Paragraph 38 – Training Staff

In terms of updates of the task lists, changes such as simply rewording for clarification, that do not affect the task performance or knowledge requirements, are not considered a modified task.The analysis phase is the foundational element of a SAT for all subsequent design, development, implementation and evaluation activities. The auditor shall review the process used in developing the initial list of tasks, in conducting the annual review of the task list, and conducting the annual review of the training program for consistency with an SAT. Undocumented methods may suggest the SAT was not sufficiently utilized in creating, managing and evaluating the training program as required in R1. |

Auditor Notes:

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R3 Supporting Evidence and Documentation

1. Each Reliability Coordinator, Balancing Authority, Transmission Operator, and Transmission Owner shall verify, at least once, the capabilities of its personnel, identified in Requirement R1 or Requirement R2, assigned to perform each of the BES company-specific Real-time reliability-related tasks identified under Requirement R1 part 1.1 or Requirement R2 part 2.1
	1. Within six months of a modification or addition of a BES company-specific Real-time reliability-related task, each Reliability Coordinator, Balancing Authority, Transmission Operator, and Transmission Owner shall verify the capabilities of each of its personnel identified in Requirement R1 or Requirement R2 to perform the new or modified BES company-specific Real-time reliability-related tasks identified in Requirement R1 part 1.1 and Requirement R2 part 2.1.
2. Each Reliability Coordinator, Balancing Authority, Transmission Operator, and Transmission Owner shall have available for inspection evidence to show that it verified the capabilities of each of its personnel identified in Requirement R1 and Requirement R2 assigned to perform each of the BES company-specific Real-time reliability-related task identified under Requirement R1 part 1.1 or Requirement R2 part 2.1. This evidence may be documents such as records showing capability to perform BES company-specific Real-time reliability-related tasks with the employee name and date; supervisor check sheets showing the employee name, date, and BES company-specific Real-time reliability-related task completed; or the results of learning assessments.
	1. Each Reliability Coordinator, Balancing Authority, Transmission Operator, or Transmission Owner shall have available for inspection evidence that it verified the capabilities of applicable personnel to perform new or modified BES company-specific Real-time reliability-related tasks within 6 months of a modification or addition of a BES company specific Real-time reliability-related task.

**Registered Entity Response (Required):**

**Question:** Has entity modified or added a Real-time reliability-related task, since the Requirement R1 part 1.1 or Requirement R2 part 2.1 task lists were initially developed? ☐ Yes ☐ No

If so, what task was modified or added and when?

Include additional information regarding the Question in gray area below, including the type of response and format of the response requested, as appropriate.

Note: A separate spreadsheet or other document may be used. If so, provide the document reference below.

**Registered Entity Response to General Compliance with this Requirement (Required):**

Describe, in narrative form, how you meet compliance with this Requirement. Provide a brief explanation, in your own words, of how you meet compliance with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Evidence Requested[[7]](#footnote-7):

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| Provide the following evidence, or other evidence to demonstrate compliance.  |
| Information listing all applicable operators and indicating the assigned BES company-specific Real-time reliability-related tasks. If the operator began independently performing assigned tasks after July 1, 2013, include the date independent work began. |
| The date each applicable operator was verified capable of performing each assigned task. |
| Examples of individual verification documentation are suggested with possibility of additional auditor sampling. |
| (Part 3.1) Each version of the BES company-specific Real-time reliability-related tasks during the compliance period.  |
| (Part 3.1) A separate list of any modifications or additions to the task list including the date of the modification or addition. |
| (Part 3.1) The date each applicable operator was verified capable of performing the new or modified task.  |
| (Part 3.1) Examples of individual verification documentation are suggested with possibility of additional auditor sampling. |

Registered Entity Evidence (Required):

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| The following information is recommended for all evidence submitted: File Name, Document Title, Revision, Date, Page(s), Section(s), Section Title(s), DescriptionAlso, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found. |
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Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):

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Compliance Assessment Approach Specific to PER-005-2, R3

***This section to be completed by the Compliance Enforcement Authority***

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| Evaluate whether the entity verified applicable operator capability to perform tasks as follows: |
|  | Verify through comparison of a list of all applicable operators and the assigned BES company-specific Real-time reliability-related tasks against verification documents of each operator’s capability to perform each assigned task. |
|  | Verify the date of task verification is prior to the date the operator began independently performing the tasks. |
|  | (Part 3.1) Verify through comparison of a list of applicable operators against the new or modified tasks that each operator was verified capable of performing the new or modified task with six months. |
| **Note to Auditor:** It is acceptable to group tasks under a job position, and then identify the operating personnel that perform that job position, in lieu of assigning tasks to each individual operator. Sampling of detailed verification records may be appropriate as determined by the auditor. In terms of updates of the task lists, changes such as simply rewording for clarification, that do not affect the task performance or knowledge requirements, are not considered a modified task. |

Auditor Notes:

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R4 Supporting Evidence and Documentation

1. Each Reliability Coordinator, Balancing Authority, Transmission Operator, and Transmission Owner that (1) has operational authority or control over Facilities with established Interconnection Reliability Operating Limits (IROLs) or (2) has established protection systems or operating guides to mitigate IROL violations, shall provide its personnel identified in Requirement R1 and Requirement R2 with emergency operations training using simulation technology such as a simulator, virtual technology, or other technology that replicates the operational behavior of the BES.
	1. A Reliability Coordinator, Balancing Authority, Transmission Operator, or Transmission Owner that did not previously meet the criteria of Requirement R4 shall comply with Requirement R4 within 12 months of meeting the criteria.
2. Each Reliability Coordinator, Balancing Authority, Transmission Operator, and Transmission Owner shall have available for inspection training records that provide evidence that personnel identified in Requirement R1 and Requirement R2completed training that includes the use of simulation technology, as specified in Requirement R4.
	1. Each Reliability Coordinator, Balancing Authority, Transmission Operator, and Transmission Owner shall have available for inspection training records that provide evidence that personnel identified in Requirement R1 and Requirement R2 completed training that included the use of simulation technology, as specified in Requirement R4, within 12 months of meeting the criteria of Requirement R4.

**Registered Entity Response (Required):**

**Question:** Does the entity have (1) operational authority or control over Facilities with established IROLs or (2) has established protection systems or operating guides to mitigate IROL violations? ☐ Yes ☐ No

If so, complete the remaining sections of this RSAW for R4. If no, state the process used to determine R4 does not apply.

Include additional information regarding the Question in gray area below, including the type of response and format of the response requested, as appropriate.

Note: A separate spreadsheet or other document may be used. If so, provide the document reference below.

**Registered Entity Response (Required):**

**Question:** Has entity gone from not having previously met the criteria of Requirement R4 to having to comply with it i.e., first IROL? ☐ Yes ☐ No

If so, complete the remaining sections of this RSAW for R4. If no, state the process used to determine R4 does not apply.

Include additional information regarding the Question in gray area below, including the type of response and format of the response requested, as appropriate.

Note: A separate spreadsheet or other document may be used. If so, provide the document reference below.

**Registered Entity Response to General Compliance with this Requirement (Required):**

Describe, in narrative form, how you meet compliance with this Requirement. Provide a brief explanation, in your own words, of how you meet compliance with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Evidence Requested[[8]](#footnote-8):

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| Provide the following evidence, or other evidence to demonstrate compliance.  |
| Documentation demonstrating training activities were on emergency operations, using simulation technology replicating the operational behavior of the BES. |
| Identification of each operating personnel identified in R1 and R2 with associated training records. |
| (Part 4.1) A dated list of IROLs acquired in accordance with Requirement R4. |

Registered Entity Evidence (Required):

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| The following information is recommended for all evidence submitted: File Name, Document Title, Revision, Date, Page(s), Section(s), Section Title(s), DescriptionAlso, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found. |
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Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):

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Compliance Assessment Approach Specific to PER-005-2, R4

***This section to be completed by the Compliance Enforcement Authority***

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| Evaluate whether the entity provided the personnel with simulation training as applicable: |
|  | Entity responded to the applicability question and provided appropriate evidence. |
|  | Verify through comparison of all applicable operators against training records that each operator received emergency operations training using simulation technology such as a simulator, virtual technology, or other technology. |
|  | Verify the simulation technology used, replicates the operational behavior of the BES. |
|  | (Part 4.1) Determine if the entity identified its first established IROL, or established its first protection systems or operating guides to mitigate IROL violations. If yes, determine the date either of these situations was identified, and verify the entity provided each applicable operator emergency operations training using simulation technology that replicates the operational behavior of the BES within 12 months of meeting the criteria of R4 |
|  | (Part 4.1) Verify the simulation technology used, replicates the operational behavior of the BES. |
| **Note to Auditor:** The 12 month window to execute simulation training only applies to entities newly acquiring IROLs (per above), since entities with existing IROLs should already have access to simulation technology. The training must have been provided to each applicable operator prior to expiration of the 12 month window.R4.1 does not specify a minimum number of training hours required using simulation technology. The utilization of a systematic approach to training is to be used for making such determination. The auditor will use professional judgment in evaluating the number of such training hours and may consider findings, concerns or recommendations as appropriate. |

Auditor Notes:

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R5 Supporting Evidence and Documentation

1. Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall use a systematic approach to develop and implement training for its identified Operations Support Personnel on how their job function(s) impact on those BES company-specific Real-time reliability-related tasks identified by the entity pursuant to Requirement R1 part 1.1.
	1. Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall conduct an evaluation each calendar year of the training established in Requirement R5 to identify and implement changes to the training.

**M5.** Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have available for inspection evidence that Operations Support Personnel completed training in accordance with its systematic approach. This evidence may be documents such as training records showing successful completion of training. Documentation of training shall include employee name and date of training.

**M5.1** Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have available for inspection evidence (such as instructor observations, trainee feedback, supervisor feedback, course evaluations, learning assessments, or internal audit results) that it performed an evaluation each calendar year, as specified in Requirement R5 part 5.1.

**Registered Entity Response to General Compliance with this Requirement (Required):**

Describe, in narrative form, how you meet compliance with this Requirement. Provide a brief explanation, in your own words, of how you meet compliance with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Evidence Requested[[9]](#footnote-9):

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| Provide the following evidence, or other evidence to demonstrate compliance.  |
| Evidence training was developed and implemented using a systematic approach and addressed how job functions impact the BES company-specific real-time reliability-related tasks.  |
| A list of identified Operations Support Personnel job functions and associated reliability-related tasks both identified for training through the systematic approach.  |
| A list of Operations Support Personnel identified using a systematic approach and the NERC Glossary definition of Operations Support Personnel. |
| Evidence of training delivered to such personnel. |
| (Part 5.1) Evidence demonstrating review of the training occurred every calendar year to identify needed changes, a list of any identified changes, and documentation of implementing the changes. |

Registered Entity Evidence (Required):

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| The following information is recommended for all evidence submitted: File Name, Document Title, Revision, Date, Page(s), Section(s), Section Title(s), DescriptionAlso, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found. |
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Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):

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Compliance Assessment Approach Specific to PER-005-2, R5

***This section to be completed by the Compliance Enforcement Authority***

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| Evaluate whether the entity developed and implemented training consistent with R5: |
|  | Verify the entity documented a systematic approach used to develop training for its Operations Support Personnel job functions that impact the BES company-specific real-time reliability-related tasks identified in R1. |
|  | Verify use of the systematic approach in determining:* Which Operations Support Personnel job functions affect reliability-related tasks, and
* Which reliability-related tasks are affected by Operations Support Personnel job functions.
 |
|  | Verify the training addresses how the job functions impact the identified reliability-related tasks. |
|  | Verify entity developed training using the systematic approach prior to July 1, 2016.  |
|  | Verify implementation of the training consistent with the entity’s training program/plan. |
|  | (Part 5.1) Verify evaluation of the training occurred every calendar year. Review list of any identified changes and verify the changes were implemented. |
| **Note to Auditor:** ***Definition of Operations Support Personnel****Individuals, who perform current day or next day outage coordination or assessments, or who determine SOLs, IROLs, or operating nomograms, in direct support of Real-time, operations of the Bulk Electric System.*The term ADDIE has become a colloquial term representing the elements associated with a systematic approach to training, but use of the specific ADDIE model is not required. An acceptable “systematic approach” includes the following characteristics: Assess training needs (analysis)Conduct the training activity (design, develop and implement)Evaluate the training activity (evaluate the effectiveness of the training)The analysis phase is the foundational element of a systematic approach for all subsequent design, development, implementation and evaluation activities. The auditor shall review the process used in identifying applicable personnel, identifying job functions and applicable reliability-related tasks, determining how the job functions impact the tasks, and conducting the annual review of the training for consistency with a systematic approach. Undocumented methods may suggest the systematic approach was not sufficiently utilized in creating, managing and evaluating the training program as required in R5. |

Auditor Notes:

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R6 Supporting Evidence and Documentation

1. Each Generator Operator shall use a systematic approach to develop and implement training to its personnel identified in Applicability Section 4.1.5 of this standard, on how their job function(s) impact the reliable operations of the BES during normal and emergency operations.
2. Each Generator Operator shall conduct an evaluation each calendar year of the training established in Requirement R6 to identify and implement changes to the training.

**M6.** Each Generator Operator shall have available for inspection evidence that its applicable personnel completed training in accordance with its systematic approach. This evidence may be documents such as training records showing successful completion of training. Documentation of training shall include employee name and date of training.

**M6.1** Each Generator Operator shall have available for inspection evidence (such as instructor observations, trainee feedback, supervisor feedback, course evaluations, learning assessments, or internal audit results) that it performed an evaluation each calendar year, as specified in Requirement R6 part 6.1.

**Registered Entity Response to General Compliance with this Requirement (Required):**

Describe, in narrative form, how you meet compliance with this Requirement. Provide a brief explanation, in your own words, of how you meet compliance with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Evidence Requested[[10]](#footnote-10):

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| Provide the following evidence, or other evidence to demonstrate compliance.  |
| Evidence training was developed and implemented using a systematic approach and addressing how job functions impact reliable BES operations during normal and emergency operations.  |
| A list of personnel in accordance with Applicability Section 4.1.5 and 4.1.5.1 with a description of the role and position within the organization. |
| Evidence of training delivered to such personnel. |
| (Part 6.1) Evidence demonstrating review of the training occurred every calendar year to identify needed changes, a list of any identified changes, and documentation of implementing the changes. |

Registered Entity Evidence (Required):

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| The following information is recommended for all evidence submitted: File Name, Document Title, Revision, Date, Page(s), Section(s), Section Title(s), DescriptionAlso, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found. |
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Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):

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Compliance Assessment Approach Specific to PER-005-2, R6

***This section to be completed by the Compliance Enforcement Authority***

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| Evaluate whether the entity developed training consistent with R6: |
|  | Verify the entity documented a systematic approach used to develop training for its personnel identified in Applicability Section 4.1.5.1. |
|  | Verify use of the systematic approach in determining what job functions impact reliable BES operations. |
|  | Verify training was developed on how the identified job functions impact the reliable operations of the BES during:* Normal Operations
* Emergency Operations
 |
|  | Verify implementation of the training as specified in the training program/plan. |
|  | (Part 6.1) Verify evaluation of the training occurred every calendar year. Review list of any identified changes and verify the changes were implemented. |
| **Note to Auditor:** ***Applicability 4.1.5.1:****Dispatch personnel at a centrally located dispatch center who receive direction from the Generator Operator’s Reliability Coordinator, Balancing Authority, Transmission Operator, or Transmission Owner, and may develop specific dispatch instructions for plant operators under their control. These personnel do not include plant operators located at a generator plant site or personnel at a centrally located dispatch center who relay dispatch instructions without making any modifications.*The term ADDIE has become a colloquial term representing the elements associated with a systematic approach to training, but use of the specific ADDIE model is not required. An acceptable “systematic approach” includes the following characteristics: Assess training needs (analysis)Conduct the training activity (design, develop and implement)Evaluate the training activity (evaluate the effectiveness of the training)The analysis phase is the foundational element of a systematic approach for all subsequent design, development, implementation and evaluation activities. The auditor shall review the process used in identifying applicable personnel, identifying job functions, determining how those functions impact reliable operations of the BES during normal and emergency operations, and conducting the annual review of the training program for consistency with a the systematic approach. Undocumented methods may suggest the systematic approach was not sufficiently utilized in creating, managing and evaluating the training program as required in R6. |

Auditor Notes:

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**Additional Information**

Reliability Standard



The full text of PER-005-2 may be found on the NERC Web Site (www.nerc.com) under “Program Areas & Departments”, “Reliability Standards.”

In addition to the Reliability Standard, there is an applicable Implementation Plan available on the NERC Web Site.

In addition to the Reliability Standard, there is background information available on the NERC Web Site.

Capitalized terms in the Reliability Standard refer to terms in the NERC Glossary, which may be found on the NERC Web Site.

Regulatory Language

FERC approved PER-005-2 on June 19, 2014. *North American Electric Reliability Corp.*, [147 FERC ¶ 61,226 (2014)](http://www.nerc.com/filingsorders/us/FERCOrdersRules/Order%20Approving%20PER-005-2.pdf).

P 1: Reliability Standard PER-005-2 is designed to ensure that personnel performing or supporting real-time operations on the Bulk-Power System are trained using a systematic approach, and expands the scope of NERC’s currently-effective training Reliability Standard to include certain personnel of transmission owners and generator operators, as well as operations support personnel as defined in a proposed new term for the NERC Glossary of Terms Used in Reliability Standards.

P 22: PER-005-2 enhances the reliability of the Bulk-Power System by expanding the scope of NERC’s currently-effective personnel training requirements to include additional personnel who perform or support real time operations on the Bulk-Power System and who therefore could have a direct impact on the reliability of the Bulk-Power System.

P 23: PER-005-2 satisfies several outstanding Commission directives related to personnel training, by: (1) requiring the systematic development and implementation of training programs for local transmission control center operator personnel of a transmission owner, including emergency operations training; (2) requiring systematic development and implementation of training for operations support personnel who can impact the reliable operation of the Bulk-Power System; and (3) requiring systematic development and implementation of training for generator owners’ dispatch personnel at centrally located dispatch centers.

Revision History

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| **Version** | **Date** | **Reviewers** | **Revision Description** |
| 1 | 12/17/2013 | NERC Compliance, Standards | New Document |
| 2 | 1/27/2014 | NERC Compliance, Standards | Revisions based on RSAW feedback received during comment period for PER-005-2. |
| 3 | 2/19/2016 | RSAW TF | Revised for consistency with the final approved Standard. |
| 4 | 7/22/2016 | RSAW-TF | Errata Change: Added page 2 (Findings, Areas of Concern, Recommendations). |

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)
2. Compliance Assessment Date(s): The date(s) the actual compliance assessment (on-site audit, off-site spot check, etc.) occurs. [↑](#footnote-ref-2)
3. Applicable to Transmission Owner that has personnel, excluding field switching personnel, who can act independently to operate or direct the operation of its Bulk Electric System transmission facilities in Real-time. [↑](#footnote-ref-3)
4. Applicable to Generator Operator that has dispatch personnel at a centrally located dispatch center who receive directions from their Reliability Coordinator, Balancing Authority, Transmission Operator, or Transmission Owner and may develop specific dispatch instructions for plant operators under their control. These personnel do not include plant operators located at a generator plant site or personnel at a centrally located dispatch center who relay dispatch instructions, without making any modifications. [↑](#footnote-ref-4)
5. Items in the Evidence Requested section are suggested evidence that may, but will not necessarily, demonstrate compliance. Other forms and types of evidence may be submitted to show compliance. [↑](#footnote-ref-5)
6. Items in the Evidence Requested section are suggested evidence that may, but will not necessarily, demonstrate compliance. Other forms and types of evidence may be submitted to show compliance. [↑](#footnote-ref-6)
7. Items in the Evidence Requested section are suggested evidence that may, but will not necessarily, demonstrate compliance. Other forms and types of evidence may be submitted to show compliance. [↑](#footnote-ref-7)
8. Items in the Evidence Requested section are suggested evidence that may, but will not necessarily, demonstrate compliance. Other forms and types of evidence may be submitted to show compliance. [↑](#footnote-ref-8)
9. Items in the Evidence Requested section are suggested evidence that may, but will not necessarily, demonstrate compliance. Other forms and types of evidence may be submitted to show compliance. [↑](#footnote-ref-9)
10. Items in the Evidence Requested section are suggested evidence that may, but will not necessarily, demonstrate compliance. Other forms and types of evidence may be submitted to show compliance. [↑](#footnote-ref-10)