

This appendix establishes modifications to the FERC approved NERC standard PER-005-2 for its specific application in New Brunswick. This appendix must be read with PER-005-2 to determine a full understanding of the requirements of the standard for New Brunswick. Where the standard and appendix differ, the appendix shall prevail.

**A. Introduction**

- 1. Title:**       **Operations Personnel Training**
- 2. Number:**     PER-005-2
- 3. Purpose:** To ensure that personnel performing or supporting Real-time operations on the bulk power system are trained using a systematic approach
- 4. Applicability:**
  - 4.1. Functional Entities:**
    - 4.1.1** No New Brunswick modifications
    - 4.1.2** No New Brunswick modifications
    - 4.1.3** No New Brunswick modifications
    - 4.1.4** No New Brunswick modifications
      - 4.1.4.1**     Personnel, excluding field switching personnel, who can act independently to operate or direct the operation of the Transmission Owner's bulk power system transmission Facilities in Real-time.
    - 4.1.5** No New Brunswick modifications
      - 4.1.5.1**     No New Brunswick modifications
- 5. Effective Date:**
  - 5.1.** No New Brunswick modifications

**B. Requirements and Measures**

- R1.** No New Brunswick modifications
  - 1.1.** Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall create a list of bulk power system company-specific Real-time reliability-related tasks based on a defined and documented methodology.

- 2

training materials according to its training program, based on the bulk power system company-specific Real-time reliability-related task list created in part 2.1.

**2.3.** No New Brunswick modifications

**2.4.** No New Brunswick modifications

**M2.** No New Brunswick modifications

**M2.1** Each Transmission Owner shall have available for inspection its methodology and its bulk power system company-specific Real-time reliability-related task list, with the date of the last review, as specified in Requirement R2 part 2.1.

**M2.2** No New Brunswick modifications

**M2.3** No New Brunswick modifications

**M2.4** No New Brunswick modifications

**R3.** 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 bulk power system company-specific Real-time reliability-related tasks identified under Requirement R1 part 1.1 or Requirement R2 part 2.1.

*[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

**3.1.** Within six months of a modification or addition of a bulk power system 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 bulk power system company-specific Real-time reliability-related tasks identified in Requirement R1 part 1.1 or Requirement R2 part 2.1.

**M3.** 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 or Requirement R2, assigned to perform each of the bulk power system company-specific Real-time reliability-related tasks 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 bulk power system company-specific Real-time reliability-related tasks with the employee name and date; supervisor check sheets showing the employee name, date, and bulk power system company-specific Real-time reliability-related task completed; or the results of learning assessments.

**M3.1** Each Reliability Coordinator, Balancing Authority, Transmission Operator, or Transmission Owner shall present evidence that it verified the capabilities of applicable personnel to perform new or modified bulk power system company-specific Real-time reliability-related tasks within 6 months of a modification or addition of a bulk power system company-specific Real-time reliability-related task.

**R4.** 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 (IROs), or (2) has established protection systems or operating guides to mitigate IROL violations, shall provide its personnel identified in Requirement R1 or 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 bulk power system. *[Violation Risk Factor: Medium]*  
*[Time Horizon: Long-term Planning]*

**4.1.** No New Brunswick modifications

**M4.** No New Brunswick modifications

**M4.1** No New Brunswick modifications

- R5.** 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 those bulk power system company-specific Real-time reliability-related tasks identified by the entity pursuant to Requirement R1 part 1.1. *[Violation Risk Factor: Medium]*  
*[Time Horizon: Long-term Planning]*

**5.1** No New Brunswick modifications

- M5.** No New Brunswick modifications

**M5.1** No New Brunswick modifications

- R6.** Each Generator Operator shall use a systematic approach to develop and implement training to its personnel identified in Applicability Section 4.1.5.1 of this standard, on how their job function(s) impact the reliable operations of the bulk power system during normal and emergency operations. *[Violation Risk Factor: Medium]* *[Time Horizon: Long-term Planning]*

**6.1.** No New Brunswick modifications

- M6.** No New Brunswick modifications

**M6.1** No New Brunswick modifications

**C. Compliance**

**1. Compliance Monitoring Process**

**1.1. Compliance Enforcement Authority**

The New Brunswick Energy and Utilities Board shall serve as the Compliance Enforcement Authority.

**1.2. Evidence Retention**

No New Brunswick modifications

**1.3. Compliance Monitoring and Assessment Processes:**

No New Brunswick modifications

**1.4. Additional Compliance Information**

No New Brunswick modifications

**D. Regional Variances**

No New Brunswick modifications

**E. Interpretations**

No New Brunswick modifications

**F. Associated Documents**

No New Brunswick modifications

**NB Appendix**  
**PER-005-2-NB-0 - Operations Personnel Training**

**Table of Compliance Elements**

| R #       | Time Horizon              | VRF           | Violation Severity Levels      |                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------|---------------------------|---------------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |                           |               | Lower VSL                      | Moderate VSL                                                                                                                                                                                                                                                                                                                            | High VSL                                                                                                                                                                                                                                                                          | Severe VSL                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>R1</b> | <b>Long-term Planning</b> | <b>Medium</b> | No New Brunswick modifications | <p>The Reliability Coordinator, Balancing Authority, or Transmission Operator failed to review or update, if necessary, its bulk power system company-specific Real-time reliability-related task list each calendar year. (1.1.1.)</p> <p>OR</p> <p>No New Brunswick modifications</p> <p>OR</p> <p>No New Brunswick modifications</p> | <p>No New Brunswick modifications</p> <p>OR</p> <p>The Reliability Coordinator, Balancing Authority, or Transmission Operator failed to design and develop training materials based on the bulk power system company-specific Real-time reliability-related task lists. (1.2)</p> | <p>The Reliability Coordinator, Balancing Authority, or Transmission Operator failed to create a bulk power system company-specific Real-time reliability-related task list. (1.1.)</p> <p>OR</p> <p>The Reliability Coordinator, Balancing Authority, or Transmission Operator failed to deliver training based on the bulk power system company-specific Real-time reliability-related task lists. (1.3)</p> |
| <b>R2</b> | <b>Long-term</b>          | <b>Medium</b> | No New Brunswick               | No New Brunswick                                                                                                                                                                                                                                                                                                                        | No New Brunswick modifications                                                                                                                                                                                                                                                    | The Transmission Owner failed to create a                                                                                                                                                                                                                                                                                                                                                                      |

**NB Appendix**  
**PER-005-2-NB-0 - Operations Personnel Training**

| R #       | Time Horizon              | VRF         | Violation Severity Levels          |                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                              |
|-----------|---------------------------|-------------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |                           |             | Lower VSL                          | Moderate VSL                                                                                                                                                                                                              | High VSL                                                                                                                                                                                                                                                                                                                      | Severe VSL                                                                                                                                                                                                                                                                                                   |
|           | <b>Planning</b>           |             | modificatio<br>ns                  | modifications                                                                                                                                                                                                             | OR<br><br>The Transmission Owner failed to design and develop training materials based on the bulk power system company-specific Real-time reliability-related task lists.<br>(2.2)                                                                                                                                           | bulk power system company-specific Real-time reliability-related task list.<br>(2.1.)<br><br>OR<br><br>The Transmission Owner failed to deliver training based on the bulk power system company-specific Real-time reliability-related task lists.<br>(2.3)                                                  |
| <b>R3</b> | <b>Long-term Planning</b> | <b>High</b> | No New Brunswick modificatio<br>ns | The Reliability Coordinator, Balancing Authority, Transmission Operator, or Transmission Owner verified the capabilities of at least 90% but less than 100% of its personnel identified in Requirements R1 or Requirement | The Reliability Coordinator, Balancing Authority, Transmission Operator, or Transmission Owner verified the capabilities of at least 70% but less than 90% of its personnel identified in Requirements R1 or Requirement R2 to perform all of their assigned bulk power system company-specific Real-time reliability-related | The Reliability Coordinator, Balancing Authority, Transmission Operator, or Transmission Owner verified the capabilities of less than 70% of its personnel identified in Requirements R1 or Requirement R2 to perform all of their assigned bulk power system company-specific Real-time reliability-related |

**NB Appendix**  
**PER-005-2-NB-0 - Operations Personnel Training**

| R # | Time Horizon       | VRF    | Violation Severity Levels      |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                       |
|-----|--------------------|--------|--------------------------------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                    |        | Lower VSL                      | Moderate VSL                                                                                                     | High VSL                                                                                                                                                                                                                                                                                                                                                                                            | Severe VSL                                                                                                                                                                                            |
|     |                    |        |                                | R2 to perform all of their assigned bulk power system company-specific Real-time reliability-related tasks. (R3) | tasks. (R3)<br><br>OR<br>The Reliability Coordinator, Balancing Authority, Transmission Operator, or Transmission Owner failed to verify the capabilities of its personnel identified in Requirements R1 or Requirement R2 to perform each new or modified task within six months of making a modification to its bulk power system company-specific Real-time reliability-related task list. (3.1) | tasks. (R3)                                                                                                                                                                                           |
| R4  | Long-term Planning | Medium | No New Brunswick modifications |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                     | The Reliability Coordinator, Balancing Authority, Transmission Operator, or Transmission Owner that meet the criteria of Requirement R4 did not provide its personnel identified in Requirement R1 or |

**NB Appendix**  
**PER-005-2-NB-0 - Operations Personnel Training**

| R # | Time Horizon | VRF | Violation Severity Levels |              |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----|--------------|-----|---------------------------|--------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |              |     | Lower VSL                 | Moderate VSL | High VSL | Severe VSL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|     |              |     |                           |              |          | <p>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 bulk power system. (R4)</p> <p>OR</p> <p>The Reliability Coordinator, Balancing Authority, Transmission Operator, or Transmission Owner did not provide its personnel identified in Requirement R1 or 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 bulk power system within twelve months of meeting the criteria of</p> |

**NB Appendix**  
**PER-005-2-NB-0 - Operations Personnel Training**

---

| R # | Time Horizon       | VRF    | Violation Severity Levels      |              |          |                        |
|-----|--------------------|--------|--------------------------------|--------------|----------|------------------------|
|     |                    |        | Lower VSL                      | Moderate VSL | High VSL | Severe VSL             |
|     |                    |        |                                |              |          | Requirement R4. (R4.1) |
| R5  | Long-term Planning | Medium | No New Brunswick modifications |              |          |                        |
| R6  | Long-term Planning | Medium | No New Brunswick modifications |              |          |                        |

**Guidelines and Technical Basis**

**Requirement R1 and R2:**

Any systematic approach to training will determine: 1) the skills and knowledge needed to perform bulk power system company-specific Real-time reliability-related tasks; 2) what training is needed to achieve those skills and knowledge; 3) if the learner can perform the bulk power system company-specific Real-time reliability-related task(s) acceptably in either a training or on-the-job environment; and 4) if the training is effective, and make adjustments as necessary.

**Reference #1: Determining Task Performance Requirements**

No New Brunswick modifications

**Reference #2: Systematic Approach to Training References:**

No New Brunswick modifications

**Reference #3: Recognized Operator Training Topics**

No New Brunswick modifications

**Reference #4: Definitions of Simulation and Simulators**

No New Brunswick modifications

**Rationale:**

No New Brunswick modifications

**Rationale for System Operator:**

No New Brunswick modifications

**Rationale for Operations Support Personnel:**

No New Brunswick modifications

**Rationale for T0:**

No New Brunswick modifications

**Rationale for GOP:**

No New Brunswick modifications

**Rationale for changes to R2:**

No New Brunswick modifications

**Rationale for R3:**

No New Brunswick modifications

**Rationale for changes to R4:**

No New Brunswick modifications

**Rationale for R5:**

No New Brunswick modifications

**Rationale for R6:**

No New Brunswick modifications

**Version History** (maintained by NBEUB)

| <b>Version</b> | <b>NBEUB<br/>Approval<br/>Date</b> | <b>NB<br/>Appendix<br/>Effective<br/>Date</b> | <b>Change Tracking</b>                                                                                                | <b>Comments</b>                                                                  |
|----------------|------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| 0              | 11/13/14                           | 01/01/17                                      | 1. Bulk Electric System(BES)replaced with "Bulk power system" throughout with the exception of the Rationale sections | Approved Under NBEUB Matter 262<br><br>Effective date: All Requirements 01/01/17 |

**NB Appendix**  
**PER-005-2-NB-0 - Operations Personnel Training**

---

|  |  |  |                                                                                                            |  |
|--|--|--|------------------------------------------------------------------------------------------------------------|--|
|  |  |  | 2. Revised Section C to clarify the NBEUB as the entity having the compliance enforcement authority for NB |  |
|  |  |  |                                                                                                            |  |