

Preliminary assessment of the relevance and impact of the standards:**PER-004-2 – Reliability Coordination – Staffing
PER-005-1 – System Personnel Training****A. Relevance of the standards to be filed:**

This assessment applies to both standards PER-004-2 and PER-005-1. The purpose of these standards is to ensure that the system operators of the reliability coordinator, the balancing authority and the transmission operator have the necessary level of competence to perform the tasks to which they are assigned and are certified through the NERC System Operator Certification Program.

To achieve these objectives, the requirements of the standards shall address the following aspects:

- The use of a systematic approach to determine performance requirements in fulfilling their real-time tasks;
- The use of a systematic approach to determine the training requirements associated with these real-time tasks;
- The conservation of evidence that this systematic approach was used at least once a year as the basis for the training provided;
- The conservation of evidence showing that each system operator of the reliability coordinator, the balancing authority and the transmission operator is competent to perform each assigned task that is on its lists of reliability-related tasks;
- The staffing of NERC certified and properly trained system operators by the reliability coordinator, the balancing authority and transmission operator who are distributed in shifts covering, 24 hours a day, seven days a week. In their surveillance role, the system operators of the reliability coordinator shall place particular attention on SOLs, IROLs and inter-tie facilities.

B. Applicability

The standard PER-005-1 apply to system operators performing tasks in real-time that directly impact the reliability of the Bulk Electric System (BES), and who perform tasks for entities registered as Reliability Coordinators, Balancing Authorities, and Transmission Operators.

The standard PER-004-1 applies to the reliability coordinator.

C. Relevance for special provisions for Quebec (Appendix QC-Appendix QC-PER-004-2, Appendix QC-PER-005-1)

None.

D. Preliminary assessment of the impact of the adoption of the standard in Quebec

Since this standard applies to the reliability coordinator, the balancing authority and the transmission operator, only the System Control Direction of Hydro-Québec TransÉnergie is affected by its application in Quebec.

Summary of impacts

This summary establishes in a condensed and preliminary manner, the impacts on materiel, human or financial resources of the proposed standard compared to the latest revision studied or adopted by the Régie de l'énergie. The impact may vary depending on the actual applicability of the standard with certain entities whose impact is lower on the reliability on the bulk electric system in Quebec.

PER-004-2

	Low	Moderate	Important
Implementation of the standard	●		
Maintenance of the standard	●		
Compliance Monitoring	●		

PER-005-1

	Low	Moderate	Important
Implementation of the standard		●	
Maintenance of the standard			●
Compliance Monitoring		●	

Legend:

Low:	Normal industry practice or standard involving minor adjustments to processes or practices in place.
Moderate:	Changes that require an allocation of certain material, human or financial resources to implement, maintain and monitor compliance of the proposed standard.
Important:	Changes that require significant provision and allocation of material, human or financial resources to implement, maintain and monitor compliance of the proposed standard.

A more accurate assessment will be developed from forms "Evaluation of the impacts of proposed standards" to be received from the registered entities during the comment period. This assessment will be submitted with the standard to the Régie de l'énergie.

E. Supersedence of the standard

Upon coming into effect, the standard PER-004-2 shall supersede the standard PER-004-1.

A. Introduction

1. **Title:** System Personnel Training
2. **Number:** PER-005-1
3. **Purpose:** To ensure that System Operators performing real-time, reliability-related tasks on the North American Bulk Electric System (BES) are competent to perform those reliability-related tasks. The competency of System Operators is critical to the reliability of the North American Bulk Electric System.
4. **Applicability:**
 - 4.1. **Functional Entities:**
 - 4.1.1 Reliability Coordinator.
 - 4.1.2 Balancing Authority.
 - 4.1.3 Transmission Operator.
5. **Proposed Effective Date for Regulatory Approvals:**
 - 5.1. In those jurisdictions where regulatory approval is required, Requirement R1 and Requirement R2 shall become effective on the first day of the first calendar quarter, 24 months after applicable regulatory approval. In those jurisdictions where no regulatory approval is required, Requirement R1 and Requirement R2 shall become effective on the first day of the first calendar quarter, 24 months after Board of Trustees adoption.
 - 5.2. In those jurisdictions where regulatory approval is required, Requirement R3 shall become effective on the first day of the first calendar quarter after applicable regulatory approval. In those jurisdictions where no regulatory approval is required, Requirement R3 shall become effective on the first day of the first calendar quarter after Board of Trustees adoption.
 - 5.3. In those jurisdictions where regulatory approval is required Sub-requirement R3.1 shall become effective on the first day of the first calendar quarter, 36 months after applicable regulatory approval. In those jurisdictions where no regulatory approval is required, the Sub-requirement R3.1 shall become effective on the first day of the first calendar quarter, 36 months after Board of Trustees adoption.

B. Requirements

- R1. Each Reliability Coordinator, Balancing Authority and Transmission Operator shall use a systematic approach to training to establish a training program for the BES company-specific reliability-related tasks performed by its System Operators and shall implement the program.
[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]
- R1.1. Each Reliability Coordinator, Balancing Authority and Transmission Operator shall create a list of BES company-specific reliability-related tasks performed by its System Operators.
 - R1.1.1. Each Reliability Coordinator, Balancing Authority and Transmission Operator shall update its list of BES company-specific reliability-related tasks performed by its System Operators each calendar year to identify new or modified tasks for inclusion in training.

- R1.2.** Each Reliability Coordinator, Balancing Authority and Transmission Operator shall design and develop learning objectives and training materials based on the task list created in R1.1.
- R1.3.** Each Reliability Coordinator, Balancing Authority and Transmission Operator shall deliver the training established in R1.2.
- R1.4.** Each Reliability Coordinator, Balancing Authority and Transmission Operator shall conduct an annual evaluation of the training program established in R1, to identify any needed changes to the training program and shall implement the changes identified.
- R2.** Each Reliability Coordinator, Balancing Authority and Transmission Operator shall verify each of its System Operator's capabilities to perform each assigned task identified in R1.1 at least one time. *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*
 - R2.1.** Within six months of a modification of the BES company-specific reliability-related tasks, each Reliability Coordinator, Balancing Authority and Transmission Operator shall verify each of its System Operator's capabilities to perform the new or modified tasks.
- R3.** At least every 12 months each Reliability Coordinator, Balancing Authority and Transmission Operator shall provide each of its System Operators with at least 32 hours of emergency operations training applicable to its organization that reflects emergency operations topics, which includes system restoration using drills, exercises or other training required to maintain qualified personnel. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
 - R3.1.** Each Reliability Coordinator, Balancing Authority and Transmission Operator that has operational authority or control over Facilities with established IROLs or has established operating guides or protection systems to mitigate IROL violations shall provide each System Operator with emergency operations training using simulation technology such as a simulator, virtual technology, or other technology that replicates the operational behavior of the BES during normal and emergency conditions.

C. Measures

- M1.** Each Reliability Coordinator, Balancing Authority and Transmission Operator shall have available for inspection evidence of using a systematic approach to training to establish and implement a training program, as specified in R1.
 - M1.1** Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have available for inspection its company-specific reliability-related task list, with the date of the last review and/or revision, as specified in R1.1.
 - M1.2** Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have available for inspection its learning objectives and training materials, as specified in R1.2.
 - M1.3** 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 R1.3.
 - M1.4** 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 annual training program evaluation, as specified in R1.4

- M2.** Each Reliability Coordinator, Balancing Authority and Transmission Operator shall have available for inspection evidence to show that it verified that each of its System Operators is capable of performing each assigned task identified in R1.1, as specified in R2. This evidence can be documents such as training records showing successful completion of tasks with the employee name and date; supervisor check sheets showing the employee name, date, and task completed; or the results of learning assessments.
- M3.** Each Reliability Coordinator, Balancing Authority and Transmission Operator shall have available for inspection training records that provide evidence that each System Operator has obtained 32 hours of emergency operations training, as specified in R3.
 - M3.1** Each Reliability Coordinator, Balancing Authority and Transmission Operator shall have available for inspection training records that provide evidence that each System Operator received emergency operations training using simulation technology, as specified in R3.1.

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

For Reliability Coordinators and other functional entities that work for their Regional Entity, the ERO shall serve as the Compliance Enforcement Authority.

For entities that do not work for the Regional Entity, the Regional Entity shall serve as the Compliance Enforcement Authority.

1.2. Compliance Monitoring Period and Reset

Not Applicable.

1.3. Compliance Monitoring and Enforcement Processes:

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

1.4. Data Retention

Each Reliability Coordinator, Balancing Authority and Transmission Operator shall keep data or evidence to show compliance for three years or since its last compliance audit, whichever time frame is the greatest, unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

If a Reliability Coordinator, Balancing Authority and Transmission Operator is found non-compliant, 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.

1.5. Additional Compliance Information

None.

2. Violation Severity Levels

R#	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1	None	<p>The responsible entity failed to provide evidence that it updated its company-specific reliability-related task list to identify new or modified tasks each calendar year (R1.1.1)</p> <p>OR</p> <p>The responsible entity failed to provide evidence of evaluating its training program to identify needed changes to its training program(s). (R1.4)</p>	<p>The responsible entity failed to design and develop learning objectives and training materials based on the BES company specific reliability related tasks. (R1.2)</p>	<p>The responsible entity failed to prepare a company-specific reliability-related task list (R1.1)</p> <p>OR</p> <p>The responsible entity failed to deliver training based on the BES company specific reliability related tasks. (R1.3)</p>
R2	None	<p>The responsible entity verified at least 90% but less than 100% of its System Operators' capabilities to perform each assigned task from its list of BES company-specific reliability-related tasks. (R2)</p>	<p>The responsible entity verified at least 70% but less than 90% of its System Operators' capabilities to perform each assigned task from its list of BES company-specific reliability-related tasks (R2)</p> <p>OR</p> <p>The responsible entity failed to verify its system operator's capabilities to perform each new or modified task within six months of making a modification to its BES company-specific reliability-related task list. (R2.1)</p>	<p>The responsible entity verified less than 70% of its System Operators' capabilities to perform each assigned task from its list of BES company-specific reliability-related tasks. (R2)</p>
R3	None	<p>The responsible entity provided at least 32 hours of emergency operations training to at least 90% but less than 100% of their System Operators. (R3)</p>	<p>The responsible entity provided at least 32 hours of emergency operations training to at least 70% but less than 90% of its System Operators. (R3)</p>	<p>The responsible entity provided 32 hours of emergency operations training to less than 70% of its System Operators (R3)</p> <p>OR</p> <p>The responsible entity did not include simulation technology replicating the operational behavior of the BES in its emergency operations training. (R3.1)</p>

E. Regional Variances

None.

Version History

Version	Date	Action	Change Tracking

This appendix establishes specific provisions for the application of the standard in Québec. Provisions of the standard and of its appendix must be read together for the purposes of understanding and interpretation. Where the standard and appendix differ, the appendix shall prevail.

A. Introduction

- 1. Title:** System Personnel Training
- 2. Number:** PER-005-1
- 3. Purpose:** No specific provision
- 4. Applicability:** No specific provision
- 5. Effective Date:**
 - 5.1.** Adoption of the standard by the Régie de l'énergie: Month xx 201x
 - 5.2.** Adoption of the appendix by the Régie de l'énergie: Month xx 201x
 - 5.3.** Effective date of the standard and its appendix in Québec: Month xx 201x
- 6. Scope:** No specific provision

B. Requirements

No specific provision

C. Measures

- M1.** No specific provision
- M2.** Specific provision: Evidence may also include summaries of interviews performed by subject matter experts.
- M3.** No specific provision

D. Compliance

- 1. Compliance Monitoring Process**
 - 1.1. Compliance Enforcement Authority**

The Régie de l'énergie is responsible, in Québec, for compliance enforcement with respect to the reliability standard and its appendix that it adopts.
 - 1.2. Compliance Monitoring Period and Reset Timeframe**

No specific provision
 - 1.3. Compliance Monitoring and Enforcement Processes**

No specific provision
 - 1.4. Data Retention**

No specific provision
 - 1.5. Additional Compliance Information**

No specific provision

Standard PER-005-1 — System Personnel Training

Appendix QC-PER-005-1

Provisions specific to the standard PER-005-1 applicable in Québec

2. Violation Severity Levels

No specific provision

E. Regional Differences

No specific provision

Version History of the Appendix

Version	Date	Action	Change Tracking
0			