

Standard Development Roadmap

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

Development Steps Completed:

1. Request for Interpretation of Requirement 1 Received (February 20, 2006).
2. Personnel Subcommittee drafts interpretation (July 20, 2006).
3. Standards Committee approves posting of interpretation and formation of ballot pool (August 8, 2006).

Description of Current Draft:

The draft interpretation was developed by the Personnel Subcommittee with support from NERC’s Compliance and Standards staff and addresses Hydro One’s request for an interpretation of Requirement 1. In accordance with the Reliability Standards Development Procedure, the interpretation will be posted for a 30-day pre-ballot review (August 15–September 13, 2006) and then will be balloted.

Future Development Plan:

| Anticipated Actions | Anticipated Date |
|---|-------------------------|
| 1. Conduct first ballot. | September 18–29, 2006 |
| 2. Consider comments submitted with first ballot; post consideration of comments. | October 11, 2006 |
| 3. Conduct second ballot. | October 16–25, 2006 |
| 4. Post interpretation for 30-day review by board. | October 1, 2006 |
| 5. Board adoption date. | November 1, 2006 |

A. Introduction

1. **Title:** **Operating Personnel Credentials**
2. **Number:** PER-003-1
3. **Purpose:** Certification of operating personnel is necessary to ensure minimum competencies for operating a reliable Bulk Electric System.
4. **Applicability**
 - 4.1. Transmission Operators.
 - 4.2. Balancing Authorities.
 - 4.3. Reliability Coordinators.
5. **Proposed Effective Date:** Date of BOT Adoption of Interpretation

B. Requirements

- R1. Each Transmission Operator, Balancing Authority, and Reliability Coordinator shall staff all operating positions that meet both of the following criteria with personnel that are NERC-certified for the applicable functions:
 - R1.1. Positions that have the primary responsibility, either directly or through communications with others, for the real-time operation of the interconnected Bulk Electric System.
 - R1.2. Positions directly responsible for complying with NERC standards.

C. Measures

- M1. Each Transmission Operator, Balancing Authority, and Reliability Coordinator shall have NERC-certified operating personnel on shift in required positions at all times with the following exceptions:
 - M1.1 While in training, an individual without the proper NERC certification credential may not independently fill a required operating position. Trainees may perform critical tasks only under the direct, continuous supervision and observation of the NERC-certified individual filling the required position.
 - M1.2 During a real-time operating emergency, the time when control is transferred from a primary control center to a backup control center shall not be included in the calculation of non-compliance. This time shall be limited to no more than four hours.

D. Compliance

1. Compliance Monitoring Process

Periodic Review: An on-site review will be conducted every three years. Staffing schedules and certification numbers will be compared to ensure that positions that require NERC-certified operating personnel were covered as required. Certification numbers from the Transmission Operator, Balancing Authority, and Reliability Coordinator will be compared with NERC records.

Exception Reporting: Any violation of the standard must be reported to the Regional Reliability Organization, who will inform the NERC Vice President-Compliance, indicating the reason for the non-compliance and the mitigation plans taken.

1.1. Compliance Monitoring Responsibility

Regional Reliability Organization.

1.2. Compliance Monitoring Period and Reset Time Frame

One calendar month without a violation.

1.3. Data Retention

Present calendar year plus previous calendar year staffing plan.

1.4. Additional Compliance Information

Not specified.

2. Levels of Non-Compliance

2.1. Level 1:The Transmission Operator, Balancing Authority, or Reliability Coordinator did not meet the requirement for a total time greater than 0 hours and up to 12 hours during a one calendar month period for each required position in the staffing plan.

2.2. Level 2:The Transmission Operator, Balancing Authority, or Reliability Coordinator did not meet the requirement for a total time greater than 12 hours and up to 36 hours during a one calendar month period for each required position in the staffing plan.

2.3. Level 3:The Transmission Operator, Balancing Authority, or Reliability Coordinator did not meet the requirement for a total time greater than 36 hours and up to 72 hours during a one-month calendar period for each required position in the staffing plan.

2.4. Level 4:The Transmission Operator, Balancing Authority, or Reliability Coordinator did not meet the requirement for a total time greater than 72 hours during a one calendar month period for each required position in the staffing plan.

E. Regional Differences

None identified.

F. Interpretations

Interpretation of R1 for Hydro One July 20, 2006

Version History

| Version | Date | Action | Change Tracking |
|----------------|---------------|----------------|------------------------|
| 0 | April 1, 2005 | Effective Date | New |
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Interpretation of PER-003-0 R1 for Hydro One

In response to a request for interpretation of Reliability Standard PER-003-0 — Operating Personnel Credentials Requirement 1 from Hydro One contained in their letter dated February 20, 2006, NERC offers the following:

Hydro One made the following statements:

- Hydro One has registered with NERC as a Transmission Operator.
- Hydro one has defined responsibilities for the operation of Hydro One’s transmission system.
- Hydro One has the responsibility for physically operating transmission elements.
- Hydro One is responsible for determining and executing the necessary sequence of switching operations to implement IESO’s direction in a manner which addresses safety, asset and customer considerations.

Reliability Standard PER-003-0, Requirement 1 states:

R1. Each Transmission Operator, Balancing Authority, and Reliability Coordinator shall staff all operating positions that meet both of the following criteria with personnel that are NERC certified for the applicable functions:

R1.1. Positions that have the primary responsibility, either directly or through communications with others, for the real-time operation of the interconnected Bulk Electric System.

R1.2. Positions directly responsible for complying with NERC standards.

Hydro One’s request for clarification asks which personnel need to be NERC-certified in compliance to the above standard. Hydro One stated that two levels of its supervisors, (both immediate and one level above) who oversee personnel that perform switching operations at the Hydro One Control Centre, are NERC-certified. After the review of information provided by Hydro One that outlines their control room hierarchy and chain of command, the following answers are provided.

- | | |
|------------|---|
| Hydro One | Do personnel performing switching operations, under the supervision of certified supervisors, also require certification? |
| NERC: | Yes, if these personnel have the authority and responsibility to perform real-time independent actions that impact the reliability of the interconnected Bulk Power System. |
| Hydro One: | Are personnel performing support work, such as outage planning, to be certified? |
| NERC: | No. However, if this person is also expected to perform duties that fall under the question above, then that person will need to be certified. |

NERC staff offers the following interpretation as the standard applies to operating positions.

Interpretation of Standard PER-003-0 — Operating Personnel Credentials Requirement 1

All real-time operating positions in a transmission operations control center for the operation of the bulk electric system where any task listed in a reliability standard applicable to a transmission operator is performed, or from which others are directed to perform such tasks, shall be staffed at all times with NERC-certified personnel holding a valid credential for that position.

*The phrase **real-time** implies an action that produces a response from the interconnected electrical system that is virtually concurrent with the causative action. This wording is intended to exclude personnel such as planners and others who may perform a task listed on the critical task lists but who do so in a manner that precludes immediacy of consequences.*

*The phrase **control centers for the operation of the bulk electric system** was chosen to exclude such sites as power plant and substation control rooms.*

*The phrase **have... primary responsibility, either directly or through communications with others** provides that if the position or individual in that position has or can have the primary responsibility by taking actions (in emergencies, during loss of communications, or loss of primary control centers, etc.), then that position and those individuals must be NERC-certified with the appropriate credential to operate the system.*

TOP-004 R6.3 clearly identifies switching of the transmission network as included in the standards. NERC maintains that any real-time operator who makes switching decisions is included and must be certified. The operators are performing actions on the bulk power system and are responsible for following NERC requirements. This includes people who generally follow a “canned” switching order but have the authority to deviate from that “canned” order, if appropriate, including stopping or reversing the sequence if conditions warrant it. The only person who should be excluded is one who carries out a switching order for a bulk power system facility and has no decision-making authority. This moves the argument to the level of decision making regarding which breaker to open first, which end of the line to open first, when to put on grounds, when to disable relays, etc. These are all decisions for which an error can have major consequences for failure of the bulk power system.

PER 001-0 R1

Each Transmission Operator and Balancing Authority shall provide operating personnel with the responsibility and authority to implement real-time actions to ensure the stable and reliable operation of the Bulk Electric System.

NERC maintains that personnel performing switching operations must have the responsibility and authority to take actions to ensure the stable and reliable operation of the bulk power system without having to first obtain permission from a supervisor. If this person is able to take such independent action, then this person must be appropriately NERC certified for the position.

Tasks Lists for Certification Credentials

The following lists of tasks identify the tasks that define who should obtain the given certification credential. The lists are not meant to be definitive lists of tasks performed by system operators. However, persons performing any one of these tasks must be certified at that level.

Reliability Operator Credential

The six tasks below identify the tasks that define who should obtain the NERC-certified system operator Reliability Operator credential.

1. Produce and publish system status information via reliability coordinator information system (RCIS) or other similar Interconnection, regional or subregional communication networks.
2. Initiate a reliability coordinator hotline conference call when frequency error exceeds specified limits.
3. Monitor, evaluate, and act upon reliability-related data from the RCIS or other similar Interconnection, regional or subregional communication networks.
4. Monitor, evaluate, and act upon reliability-related data within a reliability coordinator area.
5. Coordinate reliability processes and actions with, and among, other reliability coordinators.
6. Issue energy emergency alerts, or other similar capacity alerts, to generators, load serving entities, transmission operators, balancing authorities, and interchange authorities.

Balancing, Interchange, and Transmission Operator Credential

The Balancing, Interchange, and Transmission examination is a combination of two individual specialty examinations. NERC recommends that if you perform any combination of tasks on both lists, this is the credential that you should have.

Balancing & Interchange

1. Balance loads and resources (such as generation, dispatchable load and/or interchange) to maintain system frequency at a scheduled level.
2. Evaluate, modify, and implement a resource plan for the current operating period to balance system load and resources.
3. Operate AGC to dispatch generation resources within the entity's metered boundaries.
4. Procure alternate source of energy when the reliability coordinator curtails transactions or calls for resource re-dispatch.
5. Direct actions to correct abnormal frequency.
6. Direct procurement of replacement energy upon a loss of a generating or interchange resource.
7. Direct the separation or shutdown of generators that are unsafe to operate during or after an area disturbance.
8. Ensure adequate contingency reserves are available.
9. Request an energy emergency alert (EEA), or other similar capacity alert, when resources (such as generation, dispatchable load and/or interchange) and contingency reserves are inadequate to meet demand.
10. React to a capacity emergency by ordering on all available generation and/or scheduling energy purchases and/or requesting emergency assistance from other systems.
11. Confirm and implement interchange schedules and schedule changes.

Transmission

12. Direct the restoration of the transmission system following a major system outage, load shedding, islanding or blackout.

13. Direct and/or control switching of bulk-power system elements at switching stations, generating stations, and transmission line terminals.
14. Direct and/or approve the real-time operation of the bulk power transmission system.
15. Coordinate outages of transmission system elements with all impacted systems to ensure transmission system reliability.
16. Direct and/or control actions to mitigate thermal, stability, and voltage limit violations.
17. Direct and/or control actions to mitigate actual and/or expected operating reliability limit violations.
18. Direct and/or control operations between the host balancing authority and any transmission operating entities that exist within the host balancing authority's boundaries to ensure transmission reliability.
19. Direct and/or control voltage levels, reactive resources, and coordinates Mvar flows with neighboring systems.
20. Directs or initiates shedding load to alleviate system emergency conditions.

Transmission Operator Credential

1. Direct the restoration of the transmission system following a major system outage, load shedding, islanding or blackout.
2. Direct and/or control switching of bulk-power system elements at switching stations, generating stations, and transmission line terminals.
3. Direct and/or approve the real-time operation of the bulk power transmission system.
4. Coordinate outages of transmission system elements with all impacted systems to ensure transmission system reliability.
5. Direct and/or control actions to mitigate thermal, stability, and voltage limit violations.
6. Direct and/or control actions to mitigate actual and/or expected operating reliability limit violations.
7. Direct and/or control operations between the host balancing authority and any transmission operating entities that exist within the host balancing authority's boundaries to ensure transmission reliability.
8. Direct and/or control voltage levels, reactive resources, and coordinates Mvar flows with neighboring systems.
9. Directs or initiates shedding load to alleviate system emergency conditions.

Balancing and Interchange Operator Credential

1. Balance loads and resources (such as generation, dispatchable load and/or interchange) to maintain system frequency at a scheduled level.
2. Evaluate, modify, and implement a resource plan for the current operating period to balance system load and resources.
3. Operate AGC to dispatch generation resources within the entity's metered boundaries.
4. Procure alternate source of energy when the reliability coordinator curtails transactions or calls for resource re-dispatch.

Interpretation of Standard PER-003-0 — Operating Personnel Credentials Requirement 1

5. Direct actions to correct abnormal frequency.
6. Direct procurement of replacement energy upon a loss of a generating or interchange resource.
7. Direct the separation or shutdown of generators that are unsafe to operate during or after an area disturbance.
8. Ensure adequate contingency reserves are available.
9. Request an energy emergency alert (EEA), or other similar capacity alert, when resources (such as generation, dispatchable load and/or interchange) and contingency reserves are inadequate to meet demand.
10. React to a capacity emergency by ordering on all available generation and/or scheduling energy purchases and/or requesting emergency assistance from other systems.
11. Confirm and implement interchange schedules and schedule changes.