
Project QC-2015-02

Standards COM-001-2 – Communications and COM-002-4 – Operating Personnel Communications Protocols

1. ASSESSMENT OF RELEVANCE

The goal of the COM-001-2 standard is to establish Interpersonal Communication capabilities necessary to maintain reliability. The COM-002-4 standard requires entities to develop documented communications protocols for its operating personnel that issue and receive Operating Instructions.

The modifications to the COM standards eliminate redundancies and address some gaps in the existing COM-001-1.1 and COM-002-2 standards adopted by the Régie de l'énergie. The new standards enhance reliability by requiring:

- adoption of predefined communication protocols,
- an annual assessment of the adherence to these protocols,
- training on the use of these protocols,
- the use of three-part communications,
- including Generator Operators and Distribution Providers,
- eliminating ambiguities in the currently effective standard.

2. PREREQUISITE FOR ADOPTION

None.

3. MODIFICATIONS TO OTHER STANDARDS OR TO GLOSSARY DEFINITIONS

3.1. Standards or requirements to be retired upon enforcement:

The standard COM-001-1.1 (except Requirement R4) shall be retired when the standard COM-001-2 becomes effective. COM-001-1.1 Requirement R4 and COM-002-2, shall be retired when COM-002-4 becomes effective.

3.2. New definitions to be added to the glossary:

Term	Acronym	Definition
Alternative Interpersonal Communication		Any Interpersonal Communication that is able to serve as a substitute for, and does not utilize the same infrastructure (medium) as, Interpersonal Communication used for day-to-day operation. (Communication interpersonnelle de rechange) <small>Source: Glossary of terms used in NERC Reliability Standards</small>
Interpersonal Communication		Any medium that allows two or more individuals to interact, consult, or exchange information. (Communication interpersonnelle) <small>Source: Glossary of terms used in NERC Reliability Standards</small>

Term	Acronym	Definition
Operating Instruction		<p>A command by operating personnel responsible for the Real-time operation of the interconnected Bulk Electric System to change or preserve the state, status, output, or input of an Element of the Bulk Electric System or Facility of the Bulk Electric System. (A discussion of general information and of potential options or alternatives to resolve Bulk Electric System operating concerns is not a command and is not considered an Operating Instruction.)</p> <p>(Instruction d'exploitation)</p> <p><small>Source: Glossary of terms used in NERC Reliability Standards</small></p>

3.3. Definitions to be modified in the glossary:

None.

3.4. Definitions to be retired from the glossary:

None.

4. APPLICABILITY

Requirements	Applicable Functions				
	Transmission Operator (TOP)	Balancing Authority (BA)	Reliability Coordinator (RC)	Distribution Provider (DP)	Generator Operator (GOP)
COM-001-2	X	X	X	X	X
R1			X		
R2			X		
R3	X				
R4	X				
R5		X			
R6		X			
R7				X	
R8					X
R9	X	X	X		
R10	X	X	X		
R11				X	X
COM-002-4	X	X	X	X	X
R1	X	X	X		
R2	X	X	X		
R3				X	X
R4	X	X	X		
R5	X	X	X		
R6	X	X		X	X

Requirements	Applicable Functions				
	Transmission Operator (TOP)	Balancing Authority (BA)	Reliability Coordinator (RC)	Distribution Provider (DP)	Generator Operator (GOP)
R7	X	X	X		

5. PROVISIONS SPECIFIC TO QUÉBEC

In application of this standard, any reference to the term “BES” shall be replaced by the term “RTP”.

6. PROPOSED EFFECTIVE DATES

Standard	Enforcement date in the USA	Proposed Enforcement date in Québec	Justification
COM-001-2	October 1, 2015	The first day of the first calendar quarter three months after the adoption of the standard by the Régie de l'énergie.	Standardization of practices with other jurisdictions.
COM-002-4	July 1, 2016	The first day of the first calendar quarter twelve months after the adoption of the standard by the Régie de l'énergie.	Standardization of practices with other jurisdictions.

7. PRELIMINARY ASSESSMENT OF THE IMPACT

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

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. Introduction

1. **Title:** **Communications**
2. **Number:** COM-001-2
3. **Purpose:** To establish Interpersonal Communication capabilities necessary to maintain reliability.
4. **Applicability:**
 - 4.1. Transmission Operator
 - 4.2. Balancing Authority
 - 4.3. Reliability Coordinator
 - 4.4. Distribution Provider
 - 4.5. Generator Operator
5. **Effective Date:** The first day of the second calendar quarter beyond the date that this standard is approved by applicable regulatory authorities, or in those jurisdictions where regulatory approval is not required, the standard becomes effective on the first day of the first calendar quarter beyond the date this standard is approved by the NERC Board of Trustees, or as otherwise made effective pursuant to the laws applicable to such ERO governmental authorities.

B. Requirements

- R1.** Each Reliability Coordinator shall have Interpersonal Communication capability with the following entities (unless the Reliability Coordinator detects a failure of its Interpersonal Communication capability in which case Requirement R10 shall apply):
[Violation Risk Factor: High] [Time Horizon: Real-time Operations]
 - 1.1. All Transmission Operators and Balancing Authorities within its Reliability Coordinator Area.
 - 1.2. Each adjacent Reliability Coordinator within the same Interconnection.
- R2.** Each Reliability Coordinator shall designate an Alternative Interpersonal Communication capability with the following entities: *[Violation Risk Factor: High] [Time Horizon: Real-time Operations]*
 - 2.1. All Transmission Operators and Balancing Authorities within its Reliability Coordinator Area.
 - 2.2. Each adjacent Reliability Coordinator within the same Interconnection.
- R3.** Each Transmission Operator shall have Interpersonal Communication capability with the following entities (unless the Transmission Operator detects a failure of its Interpersonal Communication capability in which case Requirement R10 shall apply):
[Violation Risk Factor: High] [Time Horizon: Real-time Operations]
 - 3.1. Its Reliability Coordinator.
 - 3.2. Each Balancing Authority within its Transmission Operator Area.

- 3.3. Each Distribution Provider within its Transmission Operator Area.
- 3.4. Each Generator Operator within its Transmission Operator Area.
- 3.5. Each adjacent Transmission Operator synchronously connected.
- 3.6. Each adjacent Transmission Operator asynchronously connected.
- R4.** Each Transmission Operator shall designate an Alternative Interpersonal Communication capability with the following entities: *[Violation Risk Factor: High] [Time Horizon: Real-time Operations]*
 - 4.1. Its Reliability Coordinator.
 - 4.2. Each Balancing Authority within its Transmission Operator Area.
 - 4.3. Each adjacent Transmission Operator synchronously connected.
 - 4.4. Each adjacent Transmission Operator asynchronously connected.
- R5.** Each Balancing Authority shall have Interpersonal Communication capability with the following entities (unless the Balancing Authority detects a failure of its Interpersonal Communication capability in which case Requirement R10 shall apply): *[Violation Risk Factor: High] [Time Horizon: Real-time Operations]*
 - 5.1. Its Reliability Coordinator.
 - 5.2. Each Transmission Operator that operates Facilities within its Balancing Authority Area.
 - 5.3. Each Distribution Provider within its Balancing Authority Area.
 - 5.4. Each Generator Operator that operates Facilities within its Balancing Authority Area.
 - 5.5. Each Adjacent Balancing Authority.
- R6.** Each Balancing Authority shall designate an Alternative Interpersonal Communication capability with the following entities: *[Violation Risk Factor: High] [Time Horizon: Real-time Operations]*
 - 1.1. Its Reliability Coordinator.
 - 1.2. Each Transmission Operator that operates Facilities within its Balancing Authority Area.
 - 1.3. Each Adjacent Balancing Authority.
- R7.** Each Distribution Provider shall have Interpersonal Communication capability with the following entities (unless the Distribution Provider detects a failure of its Interpersonal Communication capability in which case Requirement R11 shall apply): *[Violation Risk Factor: Medium] [Time Horizon: Real-time Operations]*
 - 7.1. Its Balancing Authority.
 - 7.2. Its Transmission Operator.
- R8.** Each Generator Operator shall have Interpersonal Communication capability with the following entities (unless the Generator Operator detects a failure of its Interpersonal

Communication capability in which case Requirement R11 shall apply): *[Violation Risk Factor: High] [Time Horizon: Real-time Operations]*

8.1. Its Balancing Authority.

8.2. Its Transmission Operator.

R9. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall test its Alternative Interpersonal Communication capability at least once each calendar month. If the test is unsuccessful, the responsible entity shall initiate action to repair or designate a replacement Alternative Interpersonal Communication capability within 2 hours. *[Violation Risk Factor: Medium][Time Horizon: Real-time Operations, Same-day Operations]*

R10. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall notify entities as identified in Requirements R1, R3, and R5, respectively within 60 minutes of the detection of a failure of its Interpersonal Communication capability that lasts 30 minutes or longer. *[Violation Risk Factor: Medium] [Time Horizon: Real-time Operations]*

R11. Each Distribution Provider and Generator Operator that detects a failure of its Interpersonal Communication capability shall consult each entity affected by the failure, as identified in Requirement R7 for a Distribution Provider or Requirement R8 for a Generator Operator, to determine a mutually agreeable action for the restoration of its Interpersonal Communication capability. *[Violation Risk Factor: Medium] [Time Horizon: Real-time Operations]*

C. Measures

M1. Each Reliability Coordinator shall have and provide upon request evidence that it has Interpersonal Communication capability with all Transmission Operators and Balancing Authorities within its Reliability Coordinator Area and with each adjacent Reliability Coordinator within the same Interconnection, which could include, but is not limited to:

- physical assets, or
- dated evidence, such as, equipment specifications and installation documentation, test records, operator logs, voice recordings, transcripts of voice recordings, or electronic communications. (R1.)

M2. Each Reliability Coordinator shall have and provide upon request evidence that it designated an Alternative Interpersonal Communication capability with all Transmission Operators and Balancing Authorities within its Reliability Coordinator Area and with each adjacent Reliability Coordinator within the same Interconnection, which could include, but is not limited to:

- physical assets, or
- dated evidence, such as, equipment specifications and installation documentation, test records, operator logs, voice recordings, transcripts of voice recordings, or electronic communications. (R2.)

- M3.** Each Transmission Operator shall have and provide upon request evidence that it has Interpersonal Communication capability with its Reliability Coordinator, each Balancing Authority, Distribution Provider, and Generator Operator within its Transmission Operator Area, and each adjacent Transmission Operator asynchronously or synchronously connected, which could include, but is not limited to:
- physical assets, or
 - dated evidence, such as, equipment specifications and installation documentation, test records, operator logs, voice recordings, transcripts of voice recordings, or electronic communication. (R3.)
- M4.** Each Transmission Operator shall have and provide upon request evidence that it designated an Alternative Interpersonal Communication capability with its Reliability Coordinator, each Balancing Authority within its Transmission Operator Area, and each adjacent Transmission Operator asynchronously and synchronously connected, which could include, but is not limited to:
- physical assets, or
 - dated evidence, such as, equipment specifications and installation documentation, test records, operator logs, voice recordings, transcripts of voice recordings, or electronic communications. (R4.)
- M5.** Each Balancing Authority shall have and provide upon request evidence that it has Interpersonal Communication capability with its Reliability Coordinator, each Transmission Operator and Generator Operator that operates Facilities within its Balancing Authority Area, each Distribution Provider within its Balancing Authority Area, and each adjacent Balancing Authority, which could include, but is not limited to:
- physical assets, or
 - dated evidence, such as, equipment specifications and installation documentation, test records, operator logs, voice recordings, transcripts of voice recordings, or electronic communications. (R5.)
- M6.** Each Balancing Authority shall have and provide upon request evidence that it designated an Alternative Interpersonal Communication capability with its Reliability Coordinator, each Transmission Operator that operates Facilities within its Balancing Authority Area, and each adjacent Balancing Authority, which could include, but is not limited to:
- physical assets, or
 - dated evidence, such as, equipment specifications and installation documentation, test records, operator logs, voice recordings, transcripts of voice recordings, or electronic communications. (R6.)
- M7.** Each Distribution Provider shall have and provide upon request evidence that it has Interpersonal Communication capability with its Transmission Operator and its Balancing Authority, which could include, but is not limited to:

- physical assets, or
 - dated evidence, such as, equipment specifications and installation documentation, test records, operator logs, voice recordings, transcripts of voice recordings, or electronic communications. (R7.)
- M8.** Each Generator Operator shall have and provide upon request evidence that it has Interpersonal Communication capability with its Balancing Authority and its Transmission Operator, which could include, but is not limited to:
- physical assets, or
 - dated evidence, such as, equipment specifications and installation documentation, test records, operator logs, voice recordings, transcripts of voice recordings, or electronic communications. (R8.)
- M9.** Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall have and provide upon request evidence that it tested, at least once each calendar month, its Alternative Interpersonal Communication capability designated in Requirements R2, R4, or R6. If the test was unsuccessful, the entity shall have and provide upon request evidence that it initiated action to repair or designated a replacement Alternative Interpersonal Communication capability within 2 hours. Evidence could include, but is not limited to: dated and time-stamped test records, operator logs, voice recordings, transcripts of voice recordings, or electronic communications. (R9.)
- M10.** Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall have and provide upon request evidence that it notified entities as identified in Requirements R1, R3, and R5, respectively within 60 minutes of the detection of a failure of its Interpersonal Communication capability that lasted 30 minutes or longer. Evidence could include, but is not limited to: dated and time-stamped test records, operator logs, voice recordings, transcripts of voice recordings, or electronic communications. (R10.)
- M11.** Each Distribution Provider and Generator Operator that detected a failure of its Interpersonal Communication capability shall have and provide upon request evidence that it consulted with each entity affected by the failure, as identified in Requirement R7 for a Distribution Provider or Requirement R8 for a Generator Operator, to determine mutually agreeable action to restore the Interpersonal Communication capability. Evidence could include, but is not limited to: dated operator logs, voice recordings, transcripts of voice recordings, or electronic communications. (R11.)

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

The Regional Entity shall serve as the Compliance Enforcement Authority (CEA) unless the applicable entity is owned, operated, or controlled by the Regional Entity. In such cases, the ERO or a Regional Entity approved by FERC or other applicable governmental authority shall serve as the CEA.

1.2. Compliance Monitoring and Enforcement Processes

Compliance Audit

Self-Certification

Spot Checking

Compliance Investigation

Self-Reporting

Complaint

1.3. Data Retention

The Reliability Coordinator, Transmission Operator, Balancing Authority, Distribution Provider, and Generator Operator shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- The Reliability Coordinator for Requirements R1, R2, R9, and R10, Measures M1, M2, M9, and M10 shall retain written documentation for the most recent twelve calendar months and voice recordings for the most recent 90 calendar days.
- The Transmission Operator for Requirements R3, R4, R9, and R10, Measures M3, M4, M9, and M10 shall retain written documentation for the most recent twelve calendar months and voice recordings for the most recent 90 calendar days.
- The Balancing Authority for Requirements R5, R6, R9, and R10, Measures M5, M6, M9, and M10 shall retain written documentation for the most recent twelve calendar months and voice recordings for the most recent 90 calendar days.
- The Distribution Provider for Requirements R7 and R11, Measures M7 and M11 shall retain written documentation for the most recent twelve calendar months and voice recordings for the most recent 90 calendar days.
- The Generator Operator for Requirements R8 and R11, Measures M8 and M11 shall retain written documentation for the most recent twelve calendar months and voice recordings for the most recent 90 calendar days.

If a Reliability Coordinator, Transmission Operator, Balancing Authority, Distribution Provider, or Generator Operator is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time specified above, whichever is longer.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

1.4. Additional Compliance Information

None.

2. Violation Severity Levels

R#	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1	N/A	N/A	The Reliability Coordinator failed to have Interpersonal Communication capability with one of the entities listed in Requirement R1, Parts 1.1 or 1.2, except when the Reliability Coordinator detected a failure of its Interpersonal Communication capability in accordance with Requirement R10.	The Reliability Coordinator failed to have Interpersonal Communication capability with two or more of the entities listed in Requirement R1, Parts 1.1 or 1.2, except when the Reliability Coordinator detected a failure of its Interpersonal Communication capability in accordance with Requirement R10.
R2	N/A	N/A	The Reliability Coordinator failed to designate Alternative Interpersonal Communication capability with one of the entities listed in Requirement R2, Parts 2.1 or 2.2.	The Reliability Coordinator failed to designate Alternative Interpersonal Communication capability with two or more of the entities listed in Requirement R2, Parts 2.1 or 2.2.
R3	N/A	N/A	The Transmission Operator failed to have Interpersonal Communication capability with one of the entities listed in Requirement R3, Parts 3.1, 3.2, 3.3, 3.4, 3.5, or 3.6, except when the Transmission Operator detected a failure of its Interpersonal Communication capability in accordance with Requirement R10.	The Transmission Operator failed to have Interpersonal Communication capability with two or more of the entities listed in Requirement R3, Parts 3.1, 3.2, 3.3, 3.4, 3.5, or 3.6, except when the Transmission Operator detected a failure of its Interpersonal Communication capability in accordance with Requirement R10.
R4	N/A	N/A	The Transmission Operator failed to designate Alternative Interpersonal Communication capability with one of the entities listed in Requirement R4, Parts 4.1, 4.2, 4.3, or 4.4.	The Transmission Operator failed to designate Alternative Interpersonal Communication capability with two or more of the entities listed in Requirement R4, Parts 4.1, 4.2, 4.3, or 4.4.

R#	Lower VSL	Moderate VSL	High VSL	Severe VSL
R5	N/A	N/A	The Balancing Authority failed to have Interpersonal Communication capability with one of the entities listed in Requirement R5, Parts 5.1, 5.2, 5.3, 5.4, or 5.5, except when the Balancing Authority detected a failure of its Interpersonal Communication capability in accordance with Requirement R10.	The Balancing Authority failed to have Interpersonal Communication capability with two or more of the entities listed in Requirement R5, Parts 5.1, 5.2, 5.3, 5.4, or 5.5, except when the Balancing Authority detected a failure of its Interpersonal Communication capability in accordance with Requirement R10.
R6	N/A	N/A	The Balancing Authority failed to designate Alternative Interpersonal Communication capability with one of the entities listed in Requirement R6, Parts 6.1, 6.2, or 6.3.	The Balancing Authority failed to designate Alternative Interpersonal Communication capability with two or more of the entities listed in Requirement R6, Parts 6.1, 6.2, or 6.3.
R7	N/A	N/A	The Distribution Provider failed to have Interpersonal Communication capability with one of the entities listed in Requirement R7, Parts 7.1 or 7.2, except when the Distribution Provider detected a failure of its Interpersonal Communication capability in accordance with Requirement R11.	The Distribution Provider failed to have Interpersonal Communication capability with two or more of the entities listed in Requirement R7, Parts 7.1 or 7.2, except when the Distribution Provider detected a failure of its Interpersonal Communication capability in accordance with Requirement R11.

R#	Lower VSL	Moderate VSL	High VSL	Severe VSL
R8	N/A	N/A	The Generator Operator failed to have Interpersonal Communication capability with one of the entities listed in Requirement R8, Parts 8.1 or 8.2, except when a Generator Operator detected a failure of its Interpersonal Communication capability in accordance with Requirement R11.	The Generator Operator failed to have Interpersonal Communication capability with two or more of the entities listed in Requirement R8, Parts 8.1 or 8.2, except when a Generator Operator detected a failure of its Interpersonal Communication capability in accordance with Requirement R11.
R9	The Reliability Coordinator, Transmission Operator, or Balancing Authority tested the Alternative Interpersonal Communication capability but failed to initiate action to repair or designate a replacement Alternative Interpersonal Communication in more than 2 hours and less than or equal to 4 hours upon an unsuccessful test.	The Reliability Coordinator, Transmission Operator, or Balancing Authority tested the Alternative Interpersonal Communication capability but failed to initiate action to repair or designate a replacement Alternative Interpersonal Communication in more than 4 hours and less than or equal to 6 hours upon an unsuccessful test.	The Reliability Coordinator, Transmission Operator, or Balancing Authority tested the Alternative Interpersonal Communication capability but failed to initiate action to repair or designate a replacement Alternative Interpersonal Communication in more than 6 hours and less than or equal to 8 hours upon an unsuccessful test.	The Reliability Coordinator, Transmission Operator, or Balancing Authority failed to test the Alternative Interpersonal Communication capability once each calendar month. OR The Reliability Coordinator, Transmission Operator, or Balancing Authority tested the Alternative Interpersonal Communication capability but failed to initiate action to repair or designate a replacement Alternative Interpersonal Communication in more than 8 hours upon an unsuccessful test.
R10	The Reliability Coordinator, Transmission Operator, or Balancing Authority failed to notify the entities identified in Requirements R1, R3, and R5, respectively upon the detection of a failure of its Interpersonal Communication capability in more than 60 minutes but less than or equal to 70 minutes.	The Reliability Coordinator, Transmission Operator, or Balancing Authority failed to notify the entities identified in Requirements R1, R3, and R5, respectively upon the detection of a failure of its Interpersonal Communication capability in more than 70 minutes but less than or equal to 80 minutes.	The Reliability Coordinator, Transmission Operator, or Balancing Authority failed to notify the entities identified in Requirements R1, R3, and R5, respectively upon the detection of a failure of its Interpersonal Communication capability in more than 80 minutes but less than or equal to 90 minutes.	The Reliability Coordinator, Transmission Operator, or Balancing Authority failed to notify the entities identified in Requirements R1, R3, and R5, respectively upon the detection of a failure of its Interpersonal Communication capability in more than 90 minutes.

R#	Lower VSL	Moderate VSL	High VSL	Severe VSL
R11	N/A	N/A	N/A	The Distribution Provider or Generator Operator that detected a failure of its Interpersonal Communication capability failed to consult with each entity affected by the failure, as identified in Requirement R7 for a Distribution Provider or Requirement R8 for a Generator Operator, to determine a mutually agreeable action for the restoration of the Interpersonal Communication capability.

E. Regional Differences

None identified.

F. Associated Documents**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	November 1, 2006	Adopted by Board of Trustees	Revised
1	April 4, 2007	Regulatory Approval — Effective Date	New
1	April 6, 2007	Requirement 1, added the word “for” between “facilities” and “the exchange.”	Errata
1.1	October 29, 2008	BOT adopted errata changes; updated version number to “1.1”	Errata
2	November 7, 2012	Adopted by Board of Trustees	Revised in accordance with SAR for Project 2006-06, Reliability Coordination (RC SDT). Replaced R1 with R1-R8; R2 replaced by R9; R3 included within new R1; R4 remains enforce pending Project 2007-02; R5 redundant with EOP-008-0, retiring R5 as redundant with EOP-008-0, R1; retiring R6, relates to ERO procedures; R10 & R11, new.
2	April 16, 2015	FERC Order issued approving COM-001-2	

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:** Communications
- 2. Number:** COM-001-2
- 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

B. Requirements

No specific provision

C. Requirements

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 and Enforcement Processes**

No specific provision
 - 1.3. Data Retention**

No specific provision
 - 1.4. Additional Compliance Information**

No specific provision
- 2. Violation Severity Levels**

No specific provision

E. Regional Differences

No specific provision

F. Associated Documents

No specific provision

Standard COM-001-2 —Communications

Appendix QC-COM-001-2

Provisions specific to the standard COM-001-2 applicable in Québec

Revision History

Revision	Adoption Date	Action	Change Tracking
0	Xx month 201x	New appendix	New

A. Introduction

1. **Title:** Operating Personnel Communications Protocols
2. **Number:** COM-002-4
3. **Purpose:** To improve communications for the issuance of Operating Instructions with predefined communications protocols to reduce the possibility of miscommunication that could lead to action or inaction harmful to the reliability of the Bulk Electric System (BES).
4. **Applicability:**
 - 4.1. **Functional Entities**
 - 4.1.1 Balancing Authority
 - 4.1.2 Distribution Provider
 - 4.1.3 Reliability Coordinator
 - 4.1.4 Transmission Operator
 - 4.1.5 Generator Operator
5. **Effective Date:** The standard shall become effective on the first day of the first calendar quarter that is twelve (12) months after the date that the standard is approved by an applicable governmental authority or as otherwise provided for in a jurisdiction where approval by an applicable governmental authority is required for a standard to go into effect. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is twelve (12) months after the date the standard is adopted by the NERC Board of Trustees or as otherwise provided for in that jurisdiction.

B. Requirements

- R1.** Each Balancing Authority, Reliability Coordinator, and Transmission Operator shall develop documented communications protocols for its operating personnel that issue and receive Operating Instructions. The protocols shall, at a minimum: *[Violation Risk Factor: Low][Time Horizon: Long-term Planning]*
 - 1.1. Require its operating personnel that issue and receive an oral or written Operating Instruction to use the English language, unless agreed to otherwise. An alternate language may be used for internal operations.
 - 1.2. Require its operating personnel that issue an oral two-party, person-to-person Operating Instruction to take one of the following actions:
 - Confirm the receiver's response if the repeated information is correct.
 - Reissue the Operating Instruction if the repeated information is incorrect or if requested by the receiver.

- Take an alternative action if a response is not received or if the Operating Instruction was not understood by the receiver.
- 1.3.** Require its operating personnel that receive an oral two-party, person-to-person Operating Instruction to take one of the following actions:
- Repeat, not necessarily verbatim, the Operating Instruction and receive confirmation from the issuer that the response was correct.
 - Request that the issuer reissue the Operating Instruction.
- 1.4.** Require its operating personnel that issue a written or oral single-party to multiple-party burst Operating Instruction to confirm or verify that the Operating Instruction was received by at least one receiver of the Operating Instruction.
- 1.5.** Specify the instances that require time identification when issuing an oral or written Operating Instruction and the format for that time identification.
- 1.6.** Specify the nomenclature for Transmission interface Elements and Transmission interface Facilities when issuing an oral or written Operating Instruction.
- R2.** Each Balancing Authority, Reliability Coordinator, and Transmission Operator shall conduct initial training for each of its operating personnel responsible for the Real-time operation of the interconnected Bulk Electric System on the documented communications protocols developed in Requirement R1 prior to that individual operator issuing an Operating Instruction. *[Violation Risk Factor: Low][Time Horizon: Long-term Planning]*
- R3.** Each Distribution Provider and Generator Operator shall conduct initial training for each of its operating personnel who can receive an oral two-party, person-to-person Operating Instruction prior to that individual operator receiving an oral two-party, person-to-person Operating Instruction to either: *[Violation Risk Factor: Low][Time Horizon: Long-term Planning]*
- Repeat, not necessarily verbatim, the Operating Instruction and receive confirmation from the issuer that the response was correct, or
 - Request that the issuer reissue the Operating Instruction.
- R4.** Each Balancing Authority, Reliability Coordinator, and Transmission Operator shall at least once every twelve (12) calendar months: *[Violation Risk Factor: Medium][Time Horizon: Operations Planning]*
- 4.1.** Assess adherence to the documented communications protocols in Requirement R1 by its operating personnel that issue and receive Operating Instructions, provide feedback to those operating personnel and take corrective action, as deemed appropriate by the entity, to address deviations from the documented protocols.
- 4.2.** Assess the effectiveness of its documented communications protocols in Requirement R1 for its operating personnel that issue and receive Operating Instructions and modify its documented communication protocols, as necessary.

- R5.** Each Balancing Authority, Reliability Coordinator, and Transmission Operator that issues an oral two-party, person-to-person Operating Instruction during an Emergency, excluding written or oral single-party to multiple-party burst Operating Instructions, shall either: *[Violation Risk Factor: High][Time Horizon: Real-time Operations]*
- Confirm the receiver's response if the repeated information is correct (in accordance with Requirement R6).
 - Reissue the Operating Instruction if the repeated information is incorrect or if requested by the receiver, or
 - Take an alternative action if a response is not received or if the Operating Instruction was not understood by the receiver.
- R6.** Each Balancing Authority, Distribution Provider, Generator Operator, and Transmission Operator that receives an oral two-party, person-to-person Operating Instruction during an Emergency, excluding written or oral single-party to multiple-party burst Operating Instructions, shall either: *[Violation Risk Factor: High][Time Horizon: Real-time Operations]*
- Repeat, not necessarily verbatim, the Operating Instruction and receive confirmation from the issuer that the response was correct, or
 - Request that the issuer reissue the Operating Instruction.
- R7.** Each Balancing Authority, Reliability Coordinator, and Transmission Operator that issues a written or oral single-party to multiple-party burst Operating Instruction during an Emergency shall confirm or verify that the Operating Instruction was received by at least one receiver of the Operating Instruction. *[Violation Risk Factor: High][Time Horizon: Real-time Operations]*

C. Measures

- M1.** Each Balancing Authority, Reliability Coordinator, and Transmission Operator shall provide its documented communications protocols developed for Requirement R1.
- M2.** Each Balancing Authority, Reliability Coordinator, and Transmission Operator shall provide its initial training records related to its documented communications protocols developed for Requirement R1 such as attendance logs, agendas, learning objectives, or course materials in fulfillment of Requirement R2.
- M3.** Each Distribution Provider and Generator Operator shall provide its initial training records for its operating personnel such as attendance logs, agendas, learning objectives, or course materials in fulfillment of Requirement R3.
- M4.** Each Balancing Authority, Reliability Coordinator, and Transmission Operator shall provide evidence of its assessments, including spreadsheets, logs or other evidence of feedback, findings of effectiveness and any changes made to its documented communications protocols developed for Requirement R1 in fulfillment of

Requirement R4. The entity shall provide, as part of its assessment, evidence of any corrective actions taken where an operating personnel's non-adherence to the protocols developed in Requirement R1 is the sole or partial cause of an Emergency and for all other instances where the entity determined that it was appropriate to take a corrective action to address deviations from the documented protocols developed in Requirement R1.

- M5.** Each Reliability Coordinator, Transmission Operator, and Balancing Authority that issued an oral two-party, person-to-person Operating Instruction during an Emergency, excluding oral single-party to multiple-party burst Operating Instructions, shall have evidence that the issuer either: 1) confirmed that the response from the recipient of the Operating Instruction was correct; 2) reissued the Operating Instruction if the repeated information was incorrect or if requested by the receiver; or 3) took an alternative action if a response was not received or if the Operating Instruction was not understood by the receiver. Such evidence could include, but is not limited to, dated and time-stamped voice recordings, or dated and time-stamped transcripts of voice recordings, or dated operator logs in fulfillment of Requirement R5.
- M6.** Each Balancing Authority, Distribution Provider, Generator Operator, and Transmission Operator that was the recipient of an oral two-party, person-to-person Operating Instruction during an Emergency, excluding oral single-party to multiple-party burst Operating Instructions, shall have evidence to show that the recipient either repeated, not necessarily verbatim, the Operating Instruction and received confirmation from the issuer that the response was correct, or requested that the issuer reissue the Operating Instruction in fulfillment of Requirement R6. Such evidence may include, but is not limited to, dated and time-stamped voice recordings (if the entity has such recordings), dated operator logs, an attestation from the issuer of the Operating Instruction, memos or transcripts.
- M7.** Each Balancing Authority, Reliability Coordinator and Transmission Operator that issued a written or oral single or multiple-party burst Operating Instruction during an Emergency shall provide evidence that the Operating Instruction was received by at least one receiver. Such evidence may include, but is not limited to, dated and time-stamped voice recordings (if the entity has such recordings), dated operator logs, electronic records, memos or transcripts.

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

As defined in the NERC Rules of Procedure, "Compliance Enforcement Authority" means NERC or the Regional Entity in their respective roles of monitoring and enforcing compliance with the NERC Reliability Standards.

1.2. Data Retention

The following evidence retention periods identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to

provide other evidence to show that it was compliant for the full time period since the last audit.

Each Balancing Authority, Distribution Provider, Generator Operator, Reliability Coordinator, and Transmission Operator shall each keep data or evidence for each applicable Requirement for the current calendar year and one previous calendar year, with the exception of voice recordings which shall be retained for a minimum of 90 calendar days, unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

If a Balancing Authority, Distribution Provider, Generator Operator, Reliability Coordinator, or Transmission Operator is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time period specified above, whichever is longer.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

Compliance Monitoring and Assessment Processes

Compliance Audit

Self-Certification

Spot Checking

Compliance Investigation

Self-Reporting

Complaint

1.3. Additional Compliance Information

None

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1	Long-term Planning	Low	<p>The responsible entity did not specify the instances that require time identification when issuing an oral or written Operating Instruction and the format for that time identification, as required in Requirement R1, Part 1.5</p> <p>OR</p> <p>The responsible entity did not specify the nomenclature for Transmission interface Elements and Transmission interface Facilities when issuing an oral or written Operating Instruction, as required in Requirement R1, Part 1.6.</p>	<p>The responsible entity did not require the issuer and receiver of an oral or written Operating Instruction to use the English language, unless agreed to otherwise, as required in Requirement R1, Part 1.1. An alternate language may be used for internal operations.</p>	<p>The responsible entity did not include Requirement R1, Part 1.4 in its documented communication protocols.</p>	<p>The responsible entity did not include Requirement R1, Part 1.2 in its documented communications protocols</p> <p>OR</p> <p>The responsible entity did not include Requirement R1, Part 1.3 in its documented communications protocols</p> <p>OR</p> <p>The responsible entity did not develop any documented communications protocols as required in Requirement R1.</p>

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R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R2	Long-term Planning	Low	N/A	N/A	An individual operator responsible for the Real-time operation of the interconnected Bulk Electric System at the responsible entity issued an Operating Instruction, prior to being trained on the documented communications protocols developed in Requirement R1.	An individual operator responsible for the Real-time operation of the interconnected Bulk Electric System at the responsible entity issued an Operating Instruction during an Emergency prior to being trained on the documented communications protocols developed in Requirement R1.
R3	Long-term Planning	Low	N/A	N/A	An individual operator at the responsible entity received an Operating Instruction prior to being trained.	An individual operator at the responsible entity received an Operating Instruction during an Emergency prior to being trained.

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R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R4	Operations Planning	Medium	<p>The responsible entity assessed adherence to the documented communications protocols in Requirements R1 by its operating personnel that issue and receive Operating Instructions and provided feedback to those operating personnel and took corrective action, as appropriate</p> <p>AND</p> <p>The responsible entity assessed the effectiveness of its documented communications protocols in Requirement R1 for its operating personnel that issue and receive Operating Instructions and modified its documented communication</p>	<p>The responsible entity assessed adherence to the documented communications protocols in Requirement R1 by its operating personnel that issue and receive Operating Instructions, but did not provide feedback to those operating personnel</p> <p>OR</p> <p>The responsible entity assessed adherence to the documented communications protocols in Requirements R1 by its operating personnel that issue and receive Operating Instructions and provided feedback to those operating personnel but did not take corrective action, as appropriate</p> <p>OR</p> <p>The responsible entity assessed the effectiveness of its documented communications protocols</p>	<p>The responsible entity did not assess adherence to the documented communications protocols in Requirements R1 by its operating personnel that issue and receive Operating Instructions</p> <p>OR</p> <p>The responsible entity did not assess the effectiveness of its documented communications protocols in Requirement R1 for its operating personnel that issue and receive Operating Instructions.</p>	<p>The responsible entity did not assess adherence to the documented communications protocols in Requirements R1 by its operating personnel that issue and receive Operating Instructions</p> <p>AND</p> <p>The responsible entity did not assess the effectiveness of its documented communications protocols in Requirement R1 for its operating personnel that issue and receive Operating Instructions.</p>

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R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			protocols, as necessary AND The responsible entity exceeded twelve (12) calendar months between assessments.	in Requirement R1 for its operating personnel that issue and receive Operating Instructions, but did not modify its documented communication protocols, as necessary.		

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R5	Real-time Operations	High	N/A	<p>The responsible entity that issued an Operating Instruction during an Emergency did not take one of the following actions:</p> <ul style="list-style-type: none"> Confirmed the receiver's response if the repeated information was correct (in accordance with Requirement R6). Reissued the Operating Instruction if the repeated information was incorrect or if requested by the receiver. Took an alternative action if a response was not received or if the Operating Instruction was not understood by the receiver. 	N/A	<p>The responsible entity that issued an Operating Instruction during an Emergency did not take one of the following actions:</p> <ul style="list-style-type: none"> Confirmed the receiver's response if the repeated information was correct (in accordance with Requirement R6). Reissued the Operating Instruction if the repeated information was incorrect or if requested by the receiver. Took an alternative action if a response was not received or if the Operating Instruction was not understood by the receiver. <p>AND</p> <p>Instability, uncontrolled separation, or cascading failures occurred as a result.</p>

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R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R6	Real-time Operations	High	N/A	The responsible entity did not repeat, not necessarily verbatim, the Operating Instruction during an Emergency and receive confirmation from the issuer that the response was correct, or request that the issuer reissue the Operating Instruction when receiving an Operating Instruction.	N/A	The responsible entity did not repeat, not necessarily verbatim, the Operating Instruction during an Emergency and receive confirmation from the issuer that the response was correct, or request that the issuer reissue the Operating Instruction when receiving an Operating Instruction AND Instability, uncontrolled separation, or cascading failures occurred as a result.
R7	Real-time Operations	High	N/A	The responsible entity that that issued a written or oral single-party to multiple-party burst Operating Instruction during an Emergency did not confirm or verify that the Operating Instruction was received by at least one receiver of the Operating Instruction.	N/A	The responsible entity that that issued a written or oral single-party to multiple-party burst Operating Instruction during an Emergency did not confirm or verify that the Operating Instruction was received by at least one receiver of the Operating Instruction AND Instability, uncontrolled separation, or cascading failures occurred as a result.

E. Regional Variances

None

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	February 7, 2006	Adopted by Board of Trustees	Added measures and compliance elements
2	November 1, 2006	Adopted by Board of Trustees	Revised in accordance with SAR for Project 2006-06, Reliability Coordination (RC SDT). Retired R1, R1.1, M1, M2 and updated the compliance monitoring information. Replaced R2 with new R1, R2 and R3.
2a	February 9, 2012	Interpretation of R2 adopted by Board of Trustees	Project 2009-22
3	November 7, 2012	Adopted by Board of Trustees	
4	May 6, 2014	Adopted by Board of Trustees	
4	April 16, 2015	FERC Order issued approving COM-002-4	

*** FOR INFORMATIONAL PURPOSES ONLY ***

Enforcement Dates: Standard COM-002-4 — Operating Personnel Communications Protocols

United States

Standard	Requirement	Enforcement Date	Inactive Date
COM-002-4	All	07/01/2016	

Standard COM-002-4 —Operating Personnel Communications Protocols

Appendix QC-COM-002-4

Provisions specific to the standard COM-002-4 applicable in Québec

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:** Operating Personnel Communications Protocols

2. **Number:** COM-002-4

3. **Purpose:** No specific provision

4. **Applicability:** No specific provision

Functional entities

No specific provision

Facilities

Any reference to the term "BES" shall be replaced by the term "RTP".

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

B. Requirements

No specific provision

C. Requirements

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. **Data Retention**

No specific provision

Compliance Monitoring and Assessment Processes

No specific provision

1.3. **Additional Compliance Information**

No specific provision

E. Regional Variances

No specific provision

Standard COM-002-4 —Operating Personnel Communications Protocols

Appendix QC-COM-002-4

Provisions specific to the standard COM-002-4 applicable in Québec

Revision History

Revision	Adoption Date	Action	Change Tracking
0	Xx month 201x	New appendix	New