

Project 2007-02, COM-003-1 Operating Personnel Communication Protocols Rationale and Technical Justification

Justification for Requirements in Draft 6

Rationale and Technical Justification

I. Introduction and Background

A. Order No. 693

On March 16, 2007, the Federal Energy Regulatory Commission (“FERC” or “Commission”) issued Order No. 693. Specifically, in paragraphs 512, 513 and 531-535 the Commission stated:¹

512. The Commission finds that, *during both normal* and emergency operations, it is essential that the transmission operator, balancing authority and reliability coordinator have communications with distribution providers. In response to APPA, as discussed above, any distribution provider that is not a user, owner or operator of the Bulk-Power System would not be required to comply with COM-002-2, even though the Commission is requiring the ERO to modify the Reliability Standard to include distribution providers as applicable entities. APPA’s concern that 2,000 public power systems would have to be added to the compliance registry is misplaced, since, as we explain in our Applicability discussion above, we are approving NERC’s registry process, including the registry criteria. Therefore, we adopt our proposal to require the ERO to modify COM-002-2 to apply to distribution providers through its Reliability Standards development process.

513. The Commission believes that this Reliability Standard does not alter who would operate a distribution provider’s system. It only concerns communications, not the operation of the distribution system.

¹ In Order No. 693-A at paragraph 41, the Commission also noted that “. . . as to COM-001-1 and COM-002-2, the Commission was concerned [in Order 693] about having a reliability gap during normal and emergency operations.”

531. We adopt our proposal to require the ERO to establish tightened communication protocols, especially for communications during alerts and emergencies, either as part of COM-002-2 or as a new Reliability Standard. We note that the ERO's response to the Staff Preliminary Assessment supports the need to develop additional Reliability Standards addressing consistent communications protocols among personnel responsible for the reliability of the Bulk-Power System.

532. While we agree with EEI that EOP-001-0, Requirement R4.1 requires communications protocols to be used during emergencies, we believe, and the ERO agrees, that the communications protocols need to be tightened to ensure Reliable Operation of the Bulk-Power System. *We also believe an integral component in tightening the protocols is to establish communication uniformity as much as practical on a continent-wide basis. This will eliminate possible ambiguities in communications during normal, alert and emergency conditions. This is important because the Bulk- Power System is so tightly interconnected that system impacts often cross several operating entities' areas. (Emphasis added)*

533. Regarding APPA's suggestion that it may be beneficial to include communication protocols in the relevant Reliability Standard that governs those types of emergencies, we direct that it be addressed in the Reliability Standards development process.

534. In response to MISO's contention that Blackout Report Recommendation No. 26 has been fully implemented, we note that Recommendation No. 26 addressed two matters. We believe MISO is referring to the second part of the recommendation requiring NERC to "[u]pgrade communication system hardware where appropriate" instead of tightening communications protocols. While we commend the ERO for taking appropriate action in upgrading its NERCNet, *we remind the industry to continue their efforts in addressing the first part of Blackout Recommendation No. 26.*

535. Accordingly, we direct the ERO to either modify COM-002-2 or develop a new Reliability Standard that requires tightened communications protocols, especially for communications during alerts and emergencies.

540. ... In addition, pursuant to section 215(d)(5) of the FPA and § 39.5(f) of our regulations, the Commission directs the ERO to develop a modification to COM-002-2 through the Reliability Standards development process that: (1) expands the applicability to include

distribution providers as applicable entities; (2) includes a new Requirement for the reliability coordinator to assess and approve actions that have impacts beyond the area view of a transmission operator or balancing authority and (3) *requires tightened communications protocols, especially for communications during alerts and emergencies. Alternatively, with respect to this final issue, the ERO may develop a new Reliability Standard that responds to Blackout Report Recommendation No. 26 in the manner described above.* Finally, we direct the ERO to include APPA's suggestions to complete the Measures and Levels of Non-Compliance in its modification of COM-002-2 through the Reliability Standards development process. (Emphasis added)(footnotes omitted).

B. 2003 Blackout Report

The 2003 Blackout Report Recommendation No. 26 reads:

NERC should work with reliability coordinators and control area operators to improve the effectiveness of internal and external communications during alerts, emergencies, or other critical situations, and ensure that all key parties, including state and local officials, receive timely and accurate information. NERC should task the regional councils to work together to develop communications protocols by December 31, 2004, and to assess and report on the adequacy of emergency communications systems within their regions against the protocols by that date.

C. COM-002-3

In response to the Commission's determinations in Order No. 693, the NERC Board of Trustees has approved COM-002-3 that addresses effective communications during emergency circumstances. COM-002-3 states that:

R1. When a Reliability Coordinator, Transmission Operator, or Balancing Authority requires actions to be executed as a Reliability Directive, the Reliability Coordinator, Transmission Operator, or Balancing Authority shall identify the action as a Reliability Directive to the recipient.

R2. Each Balancing Authority, Transmission Operator, Generator Operator, and Distribution Provider that is the recipient of a Reliability Directive shall repeat, restate, rephrase, or recapitulate the Reliability Directive.

R3. Each Reliability Coordinator, Transmission Operator, and Balancing Authority that issues a Reliability Directive shall either:

- Confirm that the response from the recipient of the Reliability Directive (in accordance with Requirement R2) was accurate, or
- Reissue the Reliability Directive to resolve a misunderstanding.

COM-002-3 also adds the following new definition:

Reliability Directive: A communication initiated by a Reliability Coordinator, Transmission Operator, or Balancing Authority where action by the recipient is necessary to address an Emergency or Adverse Reliability Impact.

In COM-002-3, the identification of a communication as a Reliability Directive is required to address communications related to an Emergency or Adverse Reliability Impact, which are defined in the NERC *Glossary of Terms Used in Reliability Standards* or are approved by the NERC Board of Trustees and pending FERC approval as follows:

Emergency: Any abnormal system condition that requires automatic or immediate manual action to prevent or limit the failure of transmission facilities or generation supply that could adversely affect the reliability of the Bulk Electric System.

Adverse Reliability Impact: The impact of an event that results in Bulk Electric System instability or Cascading.

D. NERC's Operating Committee guideline

On September 19, 2012, the NERC Operating Committee issued a Reliability Guideline entitled: "System Operator Verbal Communications – Current Industry Practices." As stated on page one, the purpose of the Reliability Guideline ". . . is to document and share current verbal BES communications practices and procedures from across the industry that have been found to enhance the effectiveness of system operator communications programs." Specifically, in the context of routine or normal operation communications, the Guideline on pages 4-5 states that:

There are two schools of thought regarding utilization of three-part communication for routine operating instructions. Every routine communication opportunity has a different impact on the reliability of the BES, and many routine communication opportunities have no impact on reliability. While the industry has disparate viewpoints on the necessity of the use of three-part communication for all real-time communications, *most agree that the point is to be effective when it counts for reliability — not that every communication opportunity has a reliability impact. . . .* If an entity determines it would utilize the three-part communication protocol for routine operating instructions, that entity should define when its System Operators are expected to utilize the protocol, including coordinating with entities regarding when the use of three-part communication is expected. (Emphasis added).

The Guideline goes on to address barriers to effective communications and other related subjects.

II. COM-003-1

Because COM-002-3 addresses effective communications during emergency circumstances, COM-003-1 needs to focus on those communications during normal operations that impact reliability. The latest draft of COM-003-1 implements a results-based approach to strengthening normal operating communications, which focuses entities on communicating Operating Instructions in a way that does not result in an operating condition that requires the issuance of a Reliability Directive. Accordingly, COM-003-1 is reliability-driven, results-based approach that appropriately focuses on those communications during normal operations that impact reliability. To elaborate on this approach, the definition of Operating Instruction and the COM-003-1 requirements are set forth below followed by a discussion of the impacts of the requirements.

A. Operating Instruction

The definition of Operating Instruction reads:

A command, other than a Reliability Directive, by a System Operator of a Reliability Coordinator, or of a Transmission Operator, or of a Balancing Authority, where the recipient of the command is expected to act 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 BES operating concerns are not commands and are not considered an Operating Instruction. An Operating Instruction is exclusive and distinct from a Reliability Directive. There is no overlap between an Operating Instruction and Reliability Directive.

This version of the definition of Operating Instruction clearly sets forth the types of communications that are and are not Operating Instructions. It also clearly states that there is no overlap between COM-003-1 with the requirements of COM-002-3 and its definition of Reliability Directive. This emphasis on the exclusive and distinct difference between an Operating Instruction and a Reliability Directive creates separation between the two standards, ensuring that there is no confusion between the implementation of COM-002-3 and COM-003-1 and eliminating any risk for double jeopardy with the two standards. The separate definitions also convey the importance of issuing a Reliability Directive versus an Operating Instruction.

B. Requirement R1

Requirement R1 requires the development of documented communication protocols for the issuance of Operating Instructions in a Reliability Coordinator's area. The development of documented communication protocols is designed to strengthen the issuance of Operating Instructions to guard against a miscommunication (*i.e.*, failure to

follow the protocols) of an Operating Instruction that results in an operating condition that requires the issuance of a Reliability Directive (see Requirements 2 and 3).

Requirement R1 and its Parts read:

R1. Each Balancing Authority, Reliability Coordinator, and Transmission Operator, in each Reliability Coordinator area, shall develop, subject to the Reliability Coordinator's approval, documented communication protocols for the issuance of Operating Instructions in that Reliability Coordinator's area.

The documented communication protocols will address, where applicable, the following: [Violation Risk Factor: Low] [Time Horizon: Long-term Planning]

1.1. The use of the English language when issuing or responding to an oral or written Operating Instruction, unless another language is mandated by law or regulation.

1.2. The instances, if any, that require time identification when issuing an oral or written Operating Instruction and the format for that time identification.

1.3. The nomenclature for Transmission interface Elements and Transmission interface Facilities when issuing an oral or written Operating Instruction.

1.4. The instances, if any, where alpha-numeric clarifiers are necessary when issuing an oral Operating Instruction and the format for those clarifiers.

1.5. The instances where the issuer of an oral two party, person-to-person Operating Instruction requires the receiver to repeat, restate, rephrase, or recapitulate the Operating Instruction and the issuer to:

- Confirm that the response from the recipient of the Operating Instruction was accurate; or
- Reissue the Operating Instruction to resolve a misunderstanding.

It is appropriate for the entities with system responsibilities and a wide-area view of the Bulk Electric System (*i.e.*, Reliability Coordinators, Transmission Operators and Balancing Authorities) to develop the documented communication protocols. Development does not require that the protocols of a Reliability Coordinator, Transmission Operator and Balancing Authority be identical, but rather requires these entities to coordinate to develop protocols for their Reliability Coordinator area. Also, given the reliability-driven, results-based construct set forth in Requirements R2 and R3, there is no need, and, therefore, no requirement that the Distribution Provider or Generator Operator develop documented protocols. The Distribution Provider and Generator Operator are simply required to repeat, restate, rephrase, or recapitulate the Operating Instruction when required by the issuer, following the protocol of the issuance of the Operating Instruction.

In addition, consistent with Order No. 693 and the Reliability Guideline, the Requirement R1 documented communication protocols are appropriately tied to the execution of Operating Instructions (Requirements R2 and R3), so that an Emergency or Adverse Reliability Impact does not result due to miscommunication (*i.e.*, need to issue a Reliability Directive). Working in concert with Requirement R1, Requirements R2 and R3 implement a results-based approach that promotes reliability, while eliminating any operational and compliance environment that requires a mining of hundreds, thousands or millions of routine/normal communications to prove compliance or make a finding of reasonable assurance of compliance, and, instead, properly focuses on those Operating Instructions that impact reliability.

C. Requirement R2

Requirement R2 is a reliability-driven, results-based requirement that is designed to prevent miscommunications during normal operating conditions that would result in an operating condition that requires the issuance of a Reliability Directive. To that end, the requirement focuses entities' behavior on implementing its documented communication protocols, but focuses the compliance risk on instances where failure to use the protocols by the issuer of an Operating Instruction results in an operating condition that requires the issuance of a Reliability Directive. The requirement reads:

R2. Each Balancing Authority, Reliability Coordinator, and Transmission Operator shall implement its communication protocols developed in Requirement R1 so that the failure to use the protocols by the issuer of an Operating Instruction does not result in an operating condition that requires the issuance of a Reliability Directive by the original issuer of the Operating Instruction or by another Balancing Authority, Reliability Coordinator, or Transmission Operator.

[Violation Risk Factor: Medium][Time Horizon: Real Time Operations]

The intent of Requirement R2 is to focus entities on use of the documented communications protocols when a Balancing Authority, Reliability Coordinator, or Transmission Operator issues an Operating Instruction. Rather than focus on all miscommunications, the standard focuses compliance risk on instances where an entity fails to follow its documented communication protocols **and** that failure to follow its documented communication protocols results in an operating condition that requires the issuance of a Reliability Directive. This captures those Operating Instructions that impact reliability. This construct creates an operational defense-in-depth approach with the use of Operating Instructions and Reliability Directives. COM-003-1 requires implementation of documented communications protocols to prevent operating conditions that would require the issuance of a Reliability Directive and even if that does occur, a Reliability Directive would be issued to maintain the reliable operation of the bulk electric system.

This approach also appropriately focuses compliance on the instances in which both an entity fails to follow its documented communication protocols **and** that failure to follow its documented communication protocols results in an operating condition that requires the issuance of a Reliability Directive, rather than all communications during normal operating conditions. Accordingly, Requirement R2 is a reliability-driven, results-based requirement that appropriately focuses operations and compliance on Operating Instructions that impact reliability.

D. Requirement R3

Requirement R3 is designed to prevent miscommunications during normal operating conditions where the failure to repeat, restate, rephrase, or recapitulate the Operating Instruction, when required, would result in an operating condition that requires the issuance of a Reliability Directive. The requirement reads:

R3. Each Balancing Authority, Transmission Operator, Generator Operator and Distribution Provider shall repeat, restate, rephrase, or recapitulate an Operating Instruction when required by the issuer of an Operating Instruction in its communication protocols developed in Requirement R1 so that the failure to repeat, restate, rephrase, or recapitulate the Operating Instruction does not result in an operating condition that requires the issuance of a Reliability Directive by the original issuer of the Operating Instruction or by another Balancing Authority, Reliability Coordinator, or Transmission Operator.
[Violation Risk Factor: Medium][Time Horizon: Real Time Operations]

Similar to Requirement R2, the intent of Requirement R3 is to focus on those instances in which the recipient fails to follow the issuer's three-way instructions (which are instructions consistent with its protocols) and there is an impact to reliability, *i.e.*, an operating condition that requires the issuance of a Reliability Directive. Rather than focus on all instances where three-way instructions are used, the standard focuses compliance on instances where: (1) a Balancing Authority, Transmission Operator, Generator Operator or Distribution Provider fails to repeat, restate, rephrase, or recapitulate an Operating Instruction when required by the issuer; **and** (2) the use of this repeat back protocol is required in the issuers communication protocols developed in Requirement 1; **and** (3) the failure to use the repeat back protocol results in an operating condition that requires the issuance of a Reliability Directive.²

² To assist in those instances where a Generator Operator or Distribution Provider, etc. may need an attestation or other evidence such as log or voice recording from a Reliability Coordinator, Transmission Operator or Balancing Authority, the Measures for Requirement 3 indicates the potential need for coordination between the entities.

E. VRF/VSLs

The VRF/VSLs and measures compliment the results-based approach by focusing on the impact to reliability resulting from miscommunications and not the volume of Operating Instructions or solely the development of communication protocols. By focusing on communications that create operating conditions that result in the issuance of a Reliability Directive, only those communications tied directly to the eventual issuance of a Reliability Directive would be necessary from a compliance standpoint. As written, there will likely be a smaller subset of Operating Instructions that are relevant to a finding of a violation of Requirement R2 and R3, particularly given the instructional value of the Requirement R1 communication protocols. However, a violation of Requirements R2 and R3 are considered significant and thus the VRFs and VLSs reflect that impact on reliability.

III. Conclusion

COM-003-1 is scoped and designed to complement COM-002-3. COM-003-1 represents a results-based standard that protects the reliability of the bulk electric system and that appropriately balances compliance risk by focusing entities on the development and implementation of documented communication protocols during normal operating conditions that only impact reliability. The Operating Committee's Reliability Guideline on System Operator communications acts as a complimentary guidance document that will be useful to entities during their joint development of documented communication protocols under COM-003-1.