



Communication Protocols Annual Review

COM-002-4

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System Operator Training
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- **COM-002-4 R4.2:** requires annual review of Communications Protocol
 - *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.*
- **Manual M-01, Section 4.5.6**
 - Utilize SOS to assess effectiveness of Communication Protocol, evaluation will include:
 - Any operating errors or events that involved communication errors
 - Effectiveness and efficiency of operator communications
 - If any modifications to the Communication Protocols are required

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- All operators should use their last name (at a minimum) and company name when answering a phone call and identify themselves using their last name (at a minimum) and company when initiating a phone call.
- All operators shall issue and receive written and oral Operating Instructions using the English language. (required by COM-002-4)
- Use 3-Part Communications for Operating Instructions in normal and emergency operations (required by COM-002-4)
- PJM shall confirm receipt of All-Call by at least one party (required by COM-002-4)
- For Operating Instructions that are issued with a time reference, time identification shall be in 24 hour format and include appropriate time zone (for Operating Instructions crossing time zones).

- For Operating Instructions that reference:
 - transmission lines, the line identification shall include Terminal to Terminal designation, voltage level and line number
 - Other substation equipment, designation shall include substation name, equipment number and equipment type
 - Generating units, designation shall include the generating station name and unit number
- For Operating Instructions that reference alphanumeric information, phonetically correct alphanumeric clarifiers can be used, if needed, to minimize misinterpretation
- Prior to taking actions to control transmission thermal or voltage constraints, PJM and TO operators must verify the validity of the problem by verifying the monitored element, the contingency element, the facility ratings, the actual flow or voltage and the contingency flow or voltage, as applicable.

- Any operating events involving miscommunication?
- Are Communication Protocols effective and being applied consistently?
- Any changes needed to Communication Protocols?

Appendix

- **Operating Instruction** – 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.
- **Three Part Communication** – verbal communication process between issuer and receiver
 1. Issuer clearly delivers message
 2. Receiver repeats the message back
 3. Issuer confirms the receiver's response
- **All-Call** – Verbal message delivered to PJM members via a one-way single party to multiple parties burst messaging system.

Emergency - NERC Reliability Standard COM-002 requires that RC, BA and TOP communications utilize three-part communication when issuing or receiving Operating Instructions. In addition, the Standard has a 'zero tolerance' for failures to utilize three-part communication during an Emergency. The term Emergency as used in this section is applicable to the NERC terms "Emergency", "BES Emergency", "Capacity Emergency" and "Energy Emergency".

To distinguish between the two operating modes (normal vs Emergency) the following table has been developed to identify the criteria that define when an Emergency begins and ends on the PJM BES. If PJM or a Transmission Owner (TO) determines that the current system condition as listed in the "Point at which the Emergency Begins" column has been reached, PJM and the TO shall follow the communication requirements in the following steps until the conditions in the "Point at which the Emergency Ends" have been reached.

Point at which the Emergency Begins	Point at which the Emergency Ends
Any real-time (actual) IROL exceedance	Real-time IROL exceedance ended
Any real-time (actual) SOL exceedance above a facility's emergency thermal rating.	When the real-time SOL exceedance is below the emergency thermal rating.
Any real-time (actual) SOL exceedance below a facility's emergency low voltage rating.	When the real-time SOL exceedance is above the emergency low voltage rating.
PJM Manual 13, Section 2.3.2 'Capacity Emergencies': Steps 1 through 10	When the final Step is cancelled
PJM Manual 13, Section 5.2 'Transmission Security Emergency Procedures': Steps 1 through 10	When the final Step is cancelled
Load Shed issued	Load shed has mitigated the emergency condition