



July 28, 2010

**VIA ELECTRONIC FILING**

Lorraine Légère, Board Secretary  
New Brunswick Board of Commissioners of Public Utilities  
P.O. Box 5001  
15 Market Square, Suite 1400  
Saint John, NB  
E2L 4Y9

Re: *North American Electric Reliability Corporation*

Dear Ms. Légère:

The North American Electric Reliability Corporation (“NERC”) hereby submits this Notice of Filing of an interpretation of Requirement R8 in NERC Reliability Standard TOP-001-1 — Reliability Responsibilities and Authorities, as set forth in **Exhibit A** to this Notice. The standard that includes the interpretation will be referred to as TOP-001-1a. For ease of reference, the interpretation will be referred to as TOP-001-1a in this filing.

The interpretation was approved by the NERC Board of Trustees on May 12, 2010.

NERC’s Notice consists of the following:

- This transmittal letter;
- A table of contents for the filing;
- A narrative description explaining how the interpretation meets the reliability goal of the standard involved;
- Interpretation of TOP-001-1 — Reliability Responsibilities and Authorities, Requirement R8 (**Exhibit A**);

- Reliability Standard TOP-001-1a — Reliability Responsibilities and Authorities, that includes the appended interpretation of Requirement R8 (**Exhibit B**);
- The complete development record of the interpretation (**Exhibit C**); and
- A roster of the interpretation development team (**Exhibit D**).

Please contact the undersigned if you have any questions.

Respectfully submitted,

/s/ Holly A. Hawkins

Holly A. Hawkins

*Attorney for North American Electric  
Reliability Corporation*

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**BEFORE THE  
MINISTRY OF ENERGY  
OF THE PROVINCE OF NEW BRUNSWICK**

**NORTH AMERICAN ELECTRIC )  
RELIABILITY CORPORATION )**

**NOTICE OF FILING OF THE  
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION OF  
INTERPRETATION TO RELIABILITY STANDARD  
TOP-001-1 — RELIABILITY RESPONSIBILITIES AND AUTHORITIES,  
REQUIREMENT R8**

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July 28, 2010

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**Exhibit A** — Interpretation of TOP-001-1 — Reliability Responsibilities and Authorities, Requirement R8, proposed for Approval.

**Exhibit B** — Reliability Standard TOP-001-1a — Reliability Responsibilities and Authorities, Requirement R8, that includes the appended interpretation.

**Exhibit C** — Complete Record of Development of the Interpretation of TOP-001-1 — Reliability Responsibilities and Authorities, Requirement R8.

**Exhibit D** — Roster of the Interpretation Development Team.

## **I. INTRODUCTION**

The North American Electric Reliability Corporation (“NERC”) hereby submits notice of an interpretation to a requirement of a NERC Reliability Standard:

- TOP-001-1 — Reliability Responsibilities and Authorities

No modification to the language contained in this specific requirement is being proposed through the interpretation. The NERC Board of Trustees approved the interpretation to Reliability Standard TOP-001-1 — Reliability Responsibilities and Authorities, Requirement R8, on May 12, 2010. **Exhibit A** to this filing sets forth the proposed interpretation. **Exhibit B** contains the TOP-001-1a Reliability Standard that includes the appended interpretation. **Exhibit C** contains the complete development record of the proposed interpretation to TOP-001-1 — Reliability Responsibilities and Authorities, Requirement R8. **Exhibit D** contains a roster of the interpretation development team.

NERC filed this interpretation with the Federal Energy Regulatory Commission (“FERC”), and is also filing this interpretation with the other applicable governmental authorities in Canada.

## **II. NOTICES AND COMMUNICATIONS**

Notices and communications with respect to this filing may be addressed to the following:

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## **III. BACKGROUND**

### **a. Basis for Proposed Interpretation**

While this interpretation does not represent a new or modified Reliability Standard requirement, it does provide instruction with regard to the intent and, in some cases, application of the requirement that will guide compliance to it.

### **b. Reliability Standards Development Procedure and Interpretation**

All persons who are directly or materially affected by the reliability of the North American bulk power system are permitted to request an interpretation of a Reliability Standard, as discussed in NERC's *Reliability Standards Development Procedure*, which is incorporated into the NERC Rules of Procedure as Appendix 3A.<sup>1</sup> Upon request,

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<sup>1</sup> See NERC's *Reliability Standards Development Procedure Version 7*, approved by the NERC Board of Trustees on November 5, 2009, and by FERC on February 5, 2010 ("*Reliability Standards Development*

NERC will assemble a team with the relevant expertise to address the interpretation request and, within 45 days, present the interpretation response for industry ballot. If approved by the ballot pool and the NERC Board of Trustees, the interpretation is appended to the Reliability Standard and filed for approval by FERC and applicable governmental authorities in Canada to be made effective when approved. When the affected Reliability Standard is next substantively revised using the *Reliability Standards Development Procedure*, the interpretation will then be incorporated into the Reliability Standard.

The interpretation set out in **Exhibit A** has been developed and approved by industry stakeholders using NERC's *Reliability Standards Development Procedure*. It was approved by the NERC Board of Trustees on May 12, 2010.

**IV. Reliability Standard TOP-001-1 — Transmission Operations — Reliability Responsibilities and Authorities Requirement R8**

NERC submitted Reliability Standard TOP-001-1 on December 5, 2006. In Section IV (a), below, NERC discusses the proposed interpretation to the standard, and explains the need for the development of an interpretation to Requirement R8 of the TOP-001-1 Reliability Standard. In this discussion, NERC demonstrates that the interpretation, contained in **Exhibit B**, is consistent with the stated reliability goals of the Reliability Standard. Section IV (b) below, describes the stakeholder ballot results and an explanation of how stakeholder comments were considered and addressed by the interpretation development team assembled to provide the interpretation.

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*Procedure*"), available at [http://www.nerc.com/files/Appendix\\_3A\\_ReliabilityStandardsDevelopmentProcedure\\_02052010.pdf](http://www.nerc.com/files/Appendix_3A_ReliabilityStandardsDevelopmentProcedure_02052010.pdf).

The complete development record for the interpretation, set forth in **Exhibit C**, includes the request for the interpretation, the response to the request for the interpretation, the ballot pool and the final ballot results by registered ballot body members, stakeholder comments received during the balloting and an explanation of how those comments were considered. **Exhibit D** contains a roster of the team members who developed the proposed interpretation.

**a. Justification of Interpretation**

The stated purpose of Reliability Standard TOP-001-1 — Reliability Responsibilities and Authorities is to ensure reliability entities have clear decision-making authority and capabilities to take appropriate actions or direct the actions of others to return the transmission system to normal conditions during an emergency.

Requirement R8 of the standard provides:

- R8.** During a system emergency, the Balancing Authority and Transmission Operator shall immediately take action to restore the Real and Reactive Power Balance. If the Balancing Authority or Transmission Operator is unable to restore Real and Reactive Power Balance it shall request emergency assistance from the Reliability Coordinator. If corrective action or emergency assistance is not adequate to mitigate the Real and Reactive Power Balance, then the Reliability Coordinator, Balancing Authority, and Transmission Operator shall implement firm load shedding.

On December 15, 2009, Florida Municipal Power Pool submitted a request for formal interpretation of TOP-001-1 — Reliability Responsibilities and Authorities, Requirement R8. The request centered on the responsibilities of Balancing Authorities and Transmission Operators during a system emergency.

Florida Municipal Power Pool requested clarification on several aspects of Requirement R8 as outlined in the questions below. Members of the Real Time



Operations Standard Drafting Team were asked to develop the response to the interpretation request that is presented below:

**Question**

Balancing real power is not a function of a [Transmission Operator] and balancing reactive power is not a function of a [Balancing Authority]. For Requirement R8 is the Balancing Authority responsibility to immediately take corrective action to restore Real Power Balance and is the [Transmission Operator] responsibility to immediately take corrective action to restore Reactive Power Balance?

**Response**

*The answer to both questions is yes. According to the NERC Glossary of Terms Used in Reliability Standards, the Transmission Operator is responsible for the reliability of its “local” transmission system, and operates or directs the operations of the transmission facilities. Similarly, the Balancing Authority is responsible for maintaining load-interchange-generation balance, i.e., real power balance. In the context of this requirement, the Transmission Operator is the functional entity that balances reactive power. Reactive power balancing can be accomplished by issuing instructions to the Balancing Authority or Generator Operators to alter reactive power injection. Based on NERC Reliability Standard BAL-005-1b Requirement R6, the Transmission Operator has no requirement to compute an Area Control Error (ACE) signal or to balance real power. Based on NERC Reliability Standard VAR-001-1 Requirement R8, the Balancing Authority is not required to resolve reactive power balance issues. According to TOP-001-1 Requirement R3, the Balancing Authority is only required to comply with Transmission Operator or Reliability Coordinator instructions to change injections of reactive power.*

The interpretation is consistent with the stated purpose of the Reliability Standard, which is to ensure reliability entities have clear decision-making authority and capabilities to take appropriate actions or direct the actions of others to return the transmission system to normal conditions during an emergency. The interpretation clarifies the responsibilities of Balancing Authorities and Transmission Operators during a system emergency by referencing the *NERC Glossary of Terms Used in Reliability Standards* as well as other relevant Reliability Standards. The Transmission Operator is responsible for the reliability of its “local” transmission system, and operates or directs the operations of the transmission facilities.

In the context of this requirement, the Transmission Operator is the functional entity that assesses the need for and balances reactive power. According to the *NERC Glossary of Terms Used in Reliability Standards*, Reactive Power is “The portion of electricity that establishes and sustains the electric and magnetic fields of alternating-current equipment. Reactive power must be supplied to most types of magnetic equipment, such as motors and transformers. It also must supply the reactive losses on transmission facilities. Reactive power is provided by generators, synchronous condensers, or electrostatic equipment such as capacitors and directly influences electric system voltage. It is usually expressed in kilovars (kvar) or megavars (MVAR).” During a system emergency, the Transmission Operator can balance reactive power by issuing instructions to (or directing) the Balancing Authority or Generator Operators to alter reactive power injection from its generating resources or may direct its own personnel to alter the reactive contribution of equipment (*e.g.* capacitors) at its disposal.

Furthermore, VAR-001-1 — Voltage and Reactive Control, Requirement R8 states “Each Transmission Operator shall operate or direct the operation of capacitive and inductive reactive resources within its area — including reactive generation scheduling; transmission line and reactive resource switching; and, if necessary, load shedding — to maintain system and Interconnection voltages within established limits.”

Similarly, the Balancing Authority is the responsible entity that integrates resource plans ahead of time, maintains load-interchange-generation balance within a Balancing Authority Area, and supports Interconnection frequency in real time. In the context of this requirement, the Balancing Authority is the functional entity that balances real power. According to the *NERC Glossary of Terms Used in Reliability Standards*,

Real Power is “The portion of electricity that supplies energy to the load.” NERC Reliability Standard BAL-005-1b — Automatic Generation Control, Requirement R6 states “The Balancing Authority’s AGC shall compare total Net Actual Interchange to total Net Scheduled Interchange plus Frequency Bias obligation to determine the Balancing Authority’s ACE. Single Balancing Authorities operating asynchronously may employ alternative ACE calculations such as (but not limited to) flat frequency control. If a Balancing Authority is unable to calculate ACE for more than 30 minutes it shall notify its Reliability Coordinator.” The ACE is an instantaneous signal the Balancing Authority uses to monitor its performance in maintaining its load (real power) – interchange – generation balance. According to NERC Reliability Standard TOP-001-1 Requirement R3, “...each Balancing Authority and Generator Operator shall comply with reliability directives issued by the Transmission Operator, unless such actions would violate safety, equipment, regulatory or statutory requirements.” The interpretation therefore is consistent with the Reliability Standard’s purpose.

**b. Summary of the Reliability Standard Development Proceedings**

NERC presented the interpretation response for pre-ballot review on January 29, 2010. The initial ballot was conducted from March 3, 2010 through March 16, 2010 and achieved a quorum of 88.24 percent with a weighted affirmative approval of 98.27 percent. Because no negative votes included a comment, the results from the initial ballot are final.

Respectfully submitted,

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**Exhibit A**

**Interpretation of Reliability Standard TOP-001-1 — Reliability Responsibilities and Authorities, Requirement R8 Proposed for Approval**

**Note: an Interpretation cannot be used to change a standard.**

Request for an Interpretation of a Reliability Standard
Date submitted: <a href="#">December 15, 2009</a>
Date accepted: <a href="#">December 21, 2009</a>
<b>Contact information for person requesting the interpretation:</b>
Name: <a href="#">Thomas E Washburn</a>
Organization: <a href="#">Florida Municipal Power Pool</a>
Telephone: <a href="#">407-384-4066</a>
E-mail: <a href="mailto:twashburn@ouc.com">twashburn@ouc.com</a>
<b>Identify the standard that needs clarification:</b>
Standard Number (include version number): <a href="#">TOP-001-1</a>
Standard Title: <a href="#">Reliability Responsibilities and Authorities</a>
<b>Identify specifically what requirement needs clarification:</b>
<p><b>Requirement Number and Text of Requirement:</b></p> <p><a href="#">R8. During a system emergency, the Balancing Authority and Transmission Operator shall immediately take action to restore the Real and Reactive Power Balance. If the Balancing Authority or Transmission Operator is unable to restore Real and Reactive Power Balance it shall request emergency assistance from the Reliability Coordinator. If corrective action or emergency assistance is not adequate to mitigate the Real and Reactive Power Balance, then the Reliability Coordinator, Balancing Authority, and Transmission Operator shall implement firm load shedding.</a></p> <p><b>Clarification needed:</b></p> <p><a href="#">Balancing real power is not a function of a TOP and balancing reactive power is not a function of a BA. For Requirement R8 is the Balancing Authority responsibility to immediately take corrective action to restore Real Power Balance and is the TOP responsibility to immediately take corrective action to restore Reactive Power Balance?</a></p>
<b>Identify the material impact associated with this interpretation:</b>
<p><b>Identify the material impact to your organization or others caused by the lack of clarity or an incorrect interpretation of this standard.</b></p> <p><a href="#">Not having the correct interpretation of this requirement could cause a TOP only (TOP that is not a BA) or BA only (BA that is not a TOP) to be found non-compliant.</a></p>

**Project 2009-31: Response to Request for an Interpretation of TOP-001-1, Requirement R8, for the Florida Municipal Power Pool**

The following interpretation of TOP-001-1 — Reliability Responsibilities and Authorities, Requirement R8, was developed by the Real-time Operations Standard Drafting Team.

**Requirement Number and Text of Requirement**

**R8.** During a system emergency, the Balancing Authority and Transmission Operator shall immediately take action to restore the Real and Reactive Power Balance. If the Balancing Authority or Transmission Operator is unable to restore Real and Reactive Power Balance it shall request emergency assistance from the Reliability Coordinator. If corrective action or emergency assistance is not adequate to mitigate the Real and Reactive Power Balance, then the Reliability Coordinator, Balancing Authority, and Transmission Operator shall implement firm load shedding.

**Question**

For Requirement R8 is the Balancing Authority responsibility to immediately take corrective action to restore Real Power Balance and is the TOP responsibility to immediately take corrective action to restore Reactive Power Balance?

**Response**

The answer to both questions is yes. According to the NERC *Glossary of Terms Used in Reliability Standards*, the Transmission Operator is responsible for the reliability of its "local" transmission system, and operates or directs the operations of the transmission facilities. Similarly, the Balancing Authority is responsible for maintaining load-interchange-generation balance, i.e., real power balance. In the context of this requirement, the Transmission Operator is the functional entity that balances reactive power. Reactive power balancing can be accomplished by issuing instructions to the Balancing Authority or Generator Operators to alter reactive power injection. Based on NERC Reliability Standard BAL-005-1b Requirement R6, the Transmission Operator has no requirement to compute an Area Control Error (ACE) signal or to balance real power. Based on NERC Reliability Standard VAR-001-1 Requirement R8, the Balancing Authority is not required to resolve reactive power balance issues. According to TOP-001-1 Requirement R3, the Balancing Authority is only required to comply with Transmission Operator or Reliability Coordinator instructions to change injections of reactive power.

**Exhibit B**

**Reliability Standard TOP-001-1 — Reliability Responsibilities and Authorities,  
Requirement R8 that includes the Appended Interpretation**



**A. Introduction**

1. **Title:** Reliability Responsibilities and Authorities
2. **Number:** TOP-001-1a  
**Purpose:** To ensure reliability entities have clear decision-making authority and capabilities to take appropriate actions or direct the actions of others to return the transmission system to normal conditions during an emergency.
3. **Applicability**
  - 3.1. Balancing Authorities
  - 3.2. Transmission Operators
  - 3.3. Generator Operators
  - 3.4. Distribution Providers
  - 3.5. Load Serving Entities
4. **Effective Date:** Immediately after approval of applicable regulatory authorities.

**B. Requirements**

- R1.** Each Transmission Operator shall have the responsibility and clear decision-making authority to take whatever actions are needed to ensure the reliability of its area and shall exercise specific authority to alleviate operating emergencies.
- R2.** Each Transmission Operator shall take immediate actions to alleviate operating emergencies including curtailing transmission service or energy schedules, operating equipment (e.g., generators, phase shifters, breakers), shedding firm load, etc.
- R3.** Each Transmission Operator, Balancing Authority, and Generator Operator shall comply with reliability directives issued by the Reliability Coordinator, and each Balancing Authority and Generator Operator shall comply with reliability directives issued by the Transmission Operator, unless such actions would violate safety, equipment, regulatory or statutory requirements. Under these circumstances the Transmission Operator, Balancing Authority or Generator Operator shall immediately inform the Reliability Coordinator or Transmission Operator of the inability to perform the directive so that the Reliability Coordinator or Transmission Operator can implement alternate remedial actions.
- R4.** Each Distribution Provider and Load Serving Entity shall comply with all reliability directives issued by the Transmission Operator, including shedding firm load, unless such actions would violate safety, equipment, regulatory or statutory requirements. Under these circumstances, the Distribution Provider or Load Serving Entity shall immediately inform the Transmission Operator of the inability to perform the directive so that the Transmission Operator can implement alternate remedial actions.
- R5.** Each Transmission Operator shall inform its Reliability Coordinator and any other potentially affected Transmission Operators of real time or anticipated emergency conditions, and take actions to avoid, when possible, or mitigate the emergency.

- R6.** Each Transmission Operator, Balancing Authority, and Generator Operator shall render all available emergency assistance to others as requested, provided that the requesting entity has implemented its comparable emergency procedures, unless such actions would violate safety, equipment, or regulatory or statutory requirements.
- R7.** Each Transmission Operator and Generator Operator shall not remove Bulk Electric System facilities from service if removing those facilities would burden neighboring systems unless:
  - R7.1.** For a generator outage, the Generator Operator shall notify and coordinate with the Transmission Operator. The Transmission Operator shall notify the Reliability Coordinator and other affected Transmission Operators, and coordinate the impact of removing the Bulk Electric System facility.
  - R7.2.** For a transmission facility, the Transmission Operator shall notify and coordinate with its Reliability Coordinator. The Transmission Operator shall notify other affected Transmission Operators, and coordinate the impact of removing the Bulk Electric System facility.
  - R7.3.** When time does not permit such notifications and coordination, or when immediate action is required to prevent a hazard to the public, lengthy customer service interruption, or damage to facilities, the Generator Operator shall notify the Transmission Operator, and the Transmission Operator shall notify its Reliability Coordinator and adjacent Transmission Operators, at the earliest possible time.
- R8.** During a system emergency, the Balancing Authority and Transmission Operator shall immediately take action to restore the Real and Reactive Power Balance. If the Balancing Authority or Transmission Operator is unable to restore Real and Reactive Power Balance it shall request emergency assistance from the Reliability Coordinator. If corrective action or emergency assistance is not adequate to mitigate the Real and Reactive Power Balance, then the Reliability Coordinator, Balancing Authority, and Transmission Operator shall implement firm load shedding.

**C. Measures**

- M1.** Each Transmission Operator shall have and provide upon request evidence that could include, but is not limited to, signed agreements, an authority letter signed by an officer of the company, or other equivalent evidence that will be used to confirm that it has the authority, and has exercised the authority, to alleviate operating emergencies as described in Requirement 1.
- M2.** If an operating emergency occurs the Transmission Operator that experienced the emergency shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence that will be used to determine if it took immediate actions to alleviate the operating emergency including curtailing transmission service or energy schedules, operating equipment (e.g., generators, phase shifters, breakers), shedding firm load, etc. (Requirement 2)
- M3.** Each Transmission Operator, Balancing Authority, and Generator Operator shall have and provide upon request evidence such as operator logs, voice recordings or

transcripts of voice recordings, electronic communications, or other equivalent evidence that will be used to determine if it complied with its Reliability Coordinator's reliability directives. If the Transmission Operator, Balancing Authority or Generator Operator did not comply with the directive because it would violate safety, equipment, regulatory or statutory requirements, it shall provide evidence such as operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence that it immediately informed the Reliability Coordinator of its inability to perform the directive. (Requirement 3)

- M4.** Each Balancing Authority, Generator Operator, Distribution Provider and Load Serving Entity shall have and provide upon request evidence such as operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence that will be used to determine if it complied with its Transmission Operator's reliability directives. If the Balancing Authority, Generator Operator, Distribution Provider and Load Serving Entity did not comply with the directive because it would violate safety, equipment, regulatory or statutory requirements, it shall provide evidence such as operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence that it immediately informed the Transmission Operator of its inability to perform the directive. (Requirements 3 and 4)
- M5.** The Transmission Operator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence that will be used to determine if it informed its Reliability Coordinator and any other potentially affected Transmission Operators of real time or anticipated emergency conditions, and took actions to avoid, when possible, or to mitigate an emergency. (Requirement 5)
- M6.** The Transmission Operator, Balancing Authority, and Generator Operator shall each have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence that will be used to determine if it rendered assistance to others as requested, provided that the requesting entity had implemented its comparable emergency procedures, unless such actions would violate safety, equipment, or regulatory or statutory requirements. (Requirement 6)
- M7.** The Transmission Operator and Generator Operator shall each have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence that will be used to determine if it notified either their Transmission Operator in the case of the Generator Operator, or other Transmission Operators, and the Reliability Coordinator when it removed Bulk Electric System facilities from service if removing those facilities would burden neighboring systems. (Requirement 7)

## **D. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Monitoring Responsibility**

Regional Reliability Organizations shall be responsible for compliance monitoring.

**1.2. Compliance Monitoring and Reset Time Frame**

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

**1.3. Data Retention**

Each Transmission Operator shall have the current in-force document to show that it has the responsibility and clear decision-making authority to take whatever actions are needed to ensure the reliability of its area. (Measure 1)

Each Transmission Operator shall keep 90 days of historical data (evidence) for Measures 1 through 7, including evidence of directives issued for Measures 3 and 4.

Each Balancing Authority shall keep 90 days of historical data (evidence) for Measures 3, 4 and 6 including evidence of directives issued for Measures 3 and 4.

Each Generator Operator shall keep 90 days of historical data (evidence) for Measures 3, 4, 6 and 7 including evidence of directives issued for Measures 3 and 4.

Each Distribution Provider and Load-serving Entity shall keep 90 days of historical data (evidence) for Measure 4.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all supporting compliance data

**1.4. Additional Compliance Information**

None.

**2. Levels of Non-Compliance for a Balancing Authority:**

**2.1. Level 1:** Not applicable.

**2.2. Level 2:** Not applicable.

**2.3. Level 3:** Not applicable.

**2.4. Level 4:** There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:

**2.4.1** Did not comply with a Reliability Coordinator's or Transmission Operator's reliability directive or did not immediately inform the Reliability Coordinator or Transmission Operator of its inability to perform that directive (R3)

**2.4.2** Did not render emergency assistance to others as requested, in accordance with R6.

**3. Levels of Non-Compliance for a Transmission Operator**

**3.1. Level 1:** Not applicable.

**3.2. Level 2:** Not applicable.

**3.3. Level 3:** Not applicable.

**3.4. Level 4:** There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:

**3.4.1** Does not have the documented authority to act as specified in R1.

**3.4.2** Does not have evidence it acted with the authority specified in R1.

**3.4.3** Did not take immediate actions to alleviate operating emergencies as specified in R2.

**3.4.4** Did not comply with its Reliability Coordinator's reliability directive or did not immediately inform the Reliability Coordinator of its inability to perform that directive, as specified in R3.

**3.4.5** Did not inform its Reliability Coordinator and other potentially affected Transmission Operators of real time or anticipated emergency conditions as specified in R5.

**3.4.6** Did not take actions to avoid, when possible, or to mitigate an emergency as specified in R5.

**3.4.7** Did not render emergency assistance to others as requested, as specified in R6.

**3.4.8** Removed Bulk Electric System facilities from service under conditions other than those specified in R7.1, 7.2, and 7.3, and removing those facilities burdened a neighbor system.

**4. Levels of Non-Compliance for a Generator Operator:**

- 4.1. **Level 1:** Not applicable.
  - 4.2. **Level 2:** Not applicable.
  - 4.3. **Level 3:** Not applicable.
  - 4.4. **Level 4:** There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:
    - 4.4.1 Did not comply with a Reliability Coordinator or Transmission Operator’s reliability directive or did not immediately inform the Reliability Coordinator or Transmission Operator of its inability to perform that directive, as specified in R3.
    - 4.4.2 Did not render all available emergency assistance to others as requested, unless such actions would violate safety, equipment, or regulatory or statutory requirements as specified in R6.
    - 4.4.3 Removed Bulk Electric System facilities from service under conditions other than those specified in R7.1, 7.2, and 7.3, and burdened a neighbor system.
5. **Levels of Non-Compliance for a Distribution Provider or Load Serving Entity**
- 5.1. **Level 1:** Not applicable.
  - 5.2. **Level 2:** Not applicable.
  - 5.3. **Level 3:** Not applicable
  - 5.4. **Level 4:** Did not comply with a Transmission Operator’s reliability directive or immediately inform the Transmission Operator of its inability to perform that directive, as specified in R4.

**E. Regional Differences**

None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
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
1a	May 12, 2010	Added Appendix 1 – Interpretation of R8 approved by BOT on May 12, 2010	Interpretation

## Appendix 1

Requirement Number and Text of Requirement
<p><b>R8.</b> During a system emergency, the Balancing Authority and Transmission Operator shall immediately take action to restore the Real and Reactive Power Balance. If the Balancing Authority or Transmission Operator is unable to restore Real and Reactive Power Balance it shall request emergency assistance from the Reliability Coordinator. If corrective action or emergency assistance is not adequate to mitigate the Real and Reactive Power Balance, then the Reliability Coordinator, Balancing Authority, and Transmission Operator shall implement firm load shedding.</p>
Question
<p>For Requirement R8 is the Balancing Authority responsibility to immediately take corrective action to restore Real Power Balance and is the TOP responsibility to immediately take corrective action to restore Reactive Power Balance?</p>
Response
<p>The answer to both questions is yes. According to the NERC <i>Glossary of Terms Used in Reliability Standards</i>, the Transmission Operator is responsible for the reliability of its “local” transmission system, and operates or directs the operations of the transmission facilities. Similarly, the Balancing Authority is responsible for maintaining load-interchange-generation balance, i.e., real power balance. In the context of this requirement, the Transmission Operator is the functional entity that balances reactive power. Reactive power balancing can be accomplished by issuing instructions to the Balancing Authority or Generator Operators to alter reactive power injection. Based on NERC Reliability Standard BAL-005-1b Requirement R6, the Transmission Operator has no requirement to compute an Area Control Error (ACE) signal or to balance real power. Based on NERC Reliability Standard VAR-001-1 Requirement R8, the Balancing Authority is not required to resolve reactive power balance issues. According to TOP-001-1 Requirement R3, the Balancing Authority is only required to comply with Transmission Operator or Reliability Coordinator instructions to change injections of reactive power.</p>

A. Introduction

1. **Title:** Reliability Responsibilities and Authorities

2. **Number:** TOP-001-1a

**Purpose:** To ensure reliability entities have clear decision-making authority and capabilities to take appropriate actions or direct the actions of others to return the transmission system to normal conditions during an emergency.

3. **Applicability**

3.1. Balancing Authorities

3.2. Transmission Operators

3.3. Generator Operators

3.4. Distribution Providers

3.5. Load Serving Entities

4. **Effective Date:** ~~January 1, 2007~~ Immediately after approval of applicable regulatory authorities.

B. Requirements

R1. Each Transmission Operator shall have the responsibility and clear decision-making authority to take whatever actions are needed to ensure the reliability of its area and shall exercise specific authority to alleviate operating emergencies.

R2. Each Transmission Operator shall take immediate actions to alleviate operating emergencies including curtailing transmission service or energy schedules, operating equipment (e.g., generators, phase shifters, breakers), shedding firm load, etc.

R3. Each Transmission Operator, Balancing Authority, and Generator Operator shall comply with reliability directives issued by the Reliability Coordinator, and each Balancing Authority and Generator Operator shall comply with reliability directives issued by the Transmission Operator, unless such actions would violate safety, equipment, regulatory or statutory requirements. Under these circumstances the Transmission Operator, Balancing Authority or Generator Operator shall immediately inform the Reliability Coordinator or Transmission Operator of the inability to perform the directive so that the Reliability Coordinator or Transmission Operator can implement alternate remedial actions.

R4. Each Distribution Provider and Load Serving Entity shall comply with all reliability directives issued by the Transmission Operator, including shedding firm load, unless such actions would violate safety, equipment, regulatory or statutory requirements. Under these circumstances, the Distribution Provider or Load Serving Entity shall immediately inform the Transmission Operator of the inability to perform the directive so that the Transmission Operator can implement alternate remedial actions.

R5. Each Transmission Operator shall inform its Reliability Coordinator and any other potentially affected Transmission Operators of real time or anticipated emergency conditions, and take actions to avoid, when possible, or mitigate the emergency.



- R6.** Each Transmission Operator, Balancing Authority, and Generator Operator shall render all available emergency assistance to others as requested, provided that the requesting entity has implemented its comparable emergency procedures, unless such actions would violate safety, equipment, or regulatory or statutory requirements.
- R7.** Each Transmission Operator and Generator Operator shall not remove Bulk Electric System facilities from service if removing those facilities would burden neighboring systems unless:
  - R7.1.** For a generator outage, the Generator Operator shall notify and coordinate with the Transmission Operator. The Transmission Operator shall notify the Reliability Coordinator and other affected Transmission Operators, and coordinate the impact of removing the Bulk Electric System facility.
  - R7.2.** For a transmission facility, the Transmission Operator shall notify and coordinate with its Reliability Coordinator. The Transmission Operator shall notify other affected Transmission Operators, and coordinate the impact of removing the Bulk Electric System facility.
  - R7.3.** When time does not permit such notifications and coordination, or when immediate action is required to prevent a hazard to the public, lengthy customer service interruption, or damage to facilities, the Generator Operator shall notify the Transmission Operator, and the Transmission Operator shall notify its Reliability Coordinator and adjacent Transmission Operators, at the earliest possible time.
- R8.** During a system emergency, the Balancing Authority and Transmission Operator shall immediately take action to restore the Real and Reactive Power Balance. If the Balancing Authority or Transmission Operator is unable to restore Real and Reactive Power Balance it shall request emergency assistance from the Reliability Coordinator. If corrective action or emergency assistance is not adequate to mitigate the Real and Reactive Power Balance, then the Reliability Coordinator, Balancing Authority, and Transmission Operator shall implement firm load shedding.

**C. Measures**

- M1.** Each Transmission Operator shall have and provide upon request evidence that could include, but is not limited to, signed agreements, an authority letter signed by an officer of the company, or other equivalent evidence that will be used to confirm that it has the authority, and has exercised the authority, to alleviate operating emergencies as described in Requirement 1.
- M2.** If an operating emergency occurs the Transmission Operator that experienced the emergency shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence that will be used to determine if it took immediate actions to alleviate the operating emergency including curtailing transmission service or energy schedules, operating equipment (e.g., generators, phase shifters, breakers), shedding firm load, etc. (Requirement 2)
- M3.** Each Transmission Operator, Balancing Authority, and Generator Operator shall have and provide upon request evidence such as operator logs, voice recordings or

transcripts of voice recordings, electronic communications, or other equivalent evidence that will be used to determine if it complied with its Reliability Coordinator's reliability directives. If the Transmission Operator, Balancing Authority or Generator Operator did not comply with the directive because it would violate safety, equipment, regulatory or statutory requirements, it shall provide evidence such as operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence that it immediately informed the Reliability Coordinator of its inability to perform the directive. (Requirement 3)

- M4. Each Balancing Authority, Generator Operator, Distribution Provider and Load Serving Entity shall have and provide upon request evidence such as operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence that will be used to determine if it complied with its Transmission Operator's reliability directives. If the Balancing Authority, Generator Operator, Distribution Provider and Load Serving Entity did not comply with the directive because it would violate safety, equipment, regulatory or statutory requirements, it shall provide evidence such as operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence that it immediately informed the Transmission Operator of its inability to perform the directive. (Requirements 3 and 4)
- M5. The Transmission Operator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence that will be used to determine if it informed its Reliability Coordinator and any other potentially affected Transmission Operators of real time or anticipated emergency conditions, and took actions to avoid, when possible, or to mitigate an emergency. (Requirement 5)
- M6. The Transmission Operator, Balancing Authority, and Generator Operator shall each have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence that will be used to determine if it rendered assistance to others as requested, provided that the requesting entity had implemented its comparable emergency procedures, unless such actions would violate safety, equipment, or regulatory or statutory requirements. (Requirement 6)
- M7. The Transmission Operator and Generator Operator shall each have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence that will be used to determine if it notified either their Transmission Operator in the case of the Generator Operator, or other Transmission Operators, and the Reliability Coordinator when it removed Bulk Electric System facilities from service if removing those facilities would burden neighboring systems. (Requirement 7)

**D. Compliance**

**1. Compliance Monitoring Process**

**1.1. Compliance Monitoring Responsibility**

Regional Reliability Organizations shall be responsible for compliance monitoring.

### 1.2. Compliance Monitoring and Reset Time Frame

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

### 1.3. Data Retention

Each Transmission Operator shall have the current in-force document to show that it has the responsibility and clear decision-making authority to take whatever actions are needed to ensure the reliability of its area. (Measure 1)

Each Transmission Operator shall keep 90 days of historical data (evidence) for Measures 1 through 7, including evidence of directives issued for Measures 3 and 4.

Each Balancing Authority shall keep 90 days of historical data (evidence) for Measures 3, 4 and 6 including evidence of directives issued for Measures 3 and 4.

Each Generator Operator shall keep 90 days of historical data (evidence) for Measures 3, 4, 6 and 7 including evidence of directives issued for Measures 3 and 4.

Each Distribution Provider and Load-serving Entity shall keep 90 days of historical data (evidence) for Measure 4.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all supporting compliance data

### 1.4. Additional Compliance Information

None.

**2. Levels of Non-Compliance for a Balancing Authority:**

- 2.1. **Level 1:** Not applicable.
- 2.2. **Level 2:** Not applicable.
- 2.3. **Level 3:** Not applicable.
- 2.4. **Level 4:** There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:
  - 2.4.1 Did not comply with a Reliability Coordinator's or Transmission Operator's reliability directive or did not immediately inform the Reliability Coordinator or Transmission Operator of its inability to perform that directive (R3)
  - 2.4.2 Did not render emergency assistance to others as requested, in accordance with R6.

**3. Levels of Non-Compliance for a Transmission Operator**

- 3.1. **Level 1:** Not applicable.
- 3.2. **Level 2:** Not applicable.
- 3.3. **Level 3:** Not applicable.
- 3.4. **Level 4:** There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:
  - 3.4.1 Does not have the documented authority to act as specified in R1.
  - 3.4.2 Does not have evidence it acted with the authority specified in R1.
  - 3.4.3 Did not take immediate actions to alleviate operating emergencies as specified in R2.
  - 3.4.4 Did not comply with its Reliability Coordinator's reliability directive or did not immediately inform the Reliability Coordinator of its inability to perform that directive, as specified in R3.
  - 3.4.5 Did not inform its Reliability Coordinator and other potentially affected Transmission Operators of real time or anticipated emergency conditions as specified in R5.
  - 3.4.6 Did not take actions to avoid, when possible, or to mitigate an emergency as specified in R5.
  - 3.4.7 Did not render emergency assistance to others as requested, as specified in R6.
  - 3.4.8 Removed Bulk Electric System facilities from service under conditions other than those specified in R7.1, 7.2, and 7.3, and removing those facilities burdened a neighbor system.

**4. Levels of Non-Compliance for a Generator Operator:**

**Standard TOP-001-1a — Reliability Responsibilities and Authorities**

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- 4.1. **Level 1:** Not applicable.
- 4.2. **Level 2:** Not applicable.
- 4.3. **Level 3:** Not applicable.
- 4.4. **Level 4:** There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:
  - 4.4.1 Did not comply with a Reliability Coordinator or Transmission Operator’s reliability directive or did not immediately inform the Reliability Coordinator or Transmission Operator of its inability to perform that directive, as specified in R3.
  - 4.4.2 Did not render all available emergency assistance to others as requested, unless such actions would violate safety, equipment, or regulatory or statutory requirements as specified in R6.
  - 4.4.3 Removed Bulk Electric System facilities from service under conditions other than those specified in R7.1, 7.2, and 7.3, and burdened a neighbor system.
- 5. **Levels of Non-Compliance for a Distribution Provider or Load Serving Entity**
  - 5.1. **Level 1:** Not applicable.
  - 5.2. **Level 2:** Not applicable.
  - 5.3. **Level 3:** Not applicable
  - 5.4. **Level 4:** Did not comply with a Transmission Operator’s reliability directive or immediately inform the Transmission Operator of its inability to perform that directive, as specified in R4.

**E. Regional Differences**

None identified.

**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
<a href="#">1a</a>	<a href="#">May 12, 2010</a>	<a href="#">Added Appendix 1 – Interpretation of R8 approved by BOT on May 12, 2010</a>	<a href="#">Interpretation</a>

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**Appendix 1**

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**Requirement Number and Text of Requirement**

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R8. During a system emergency, the Balancing Authority and Transmission Operator shall immediately take action to restore the Real and Reactive Power Balance. If the Balancing Authority or Transmission Operator is unable to restore Real and Reactive Power Balance it shall request emergency assistance from the Reliability Coordinator. If corrective action or emergency assistance is not adequate to mitigate the Real and Reactive Power Balance, then the Reliability Coordinator, Balancing Authority, and Transmission Operator shall implement firm load shedding.

**Question**

For Requirement R8 is the Balancing Authority responsibility to immediately take corrective action to restore Real Power Balance and is the TOP responsibility to immediately take corrective action to restore Reactive Power Balance?

**Response**

The answer to both questions is yes. According to the NERC *Glossary of Terms Used in Reliability Standards*, the Transmission Operator is responsible for the reliability of its “local” transmission system, and operates or directs the operations of the transmission facilities. Similarly, the Balancing Authority is responsible for maintaining load-interchange-generation balance, i.e., real power balance. In the context of this requirement, the Transmission Operator is the functional entity that balances reactive power. Reactive power balancing can be accomplished by issuing instructions to the Balancing Authority or Generator Operators to alter reactive power injection. Based on NERC Reliability Standard BAL-005-1b Requirement R6, the Transmission Operator has no requirement to compute an Area Control Error (ACE) signal or to balance real power. Based on NERC Reliability Standard VAR-001-1 Requirement R8, the Balancing Authority is not required to resolve reactive power balance issues. According to TOP-001-1 Requirement R3, the Balancing Authority is only required to comply with Transmission Operator or Reliability Coordinator instructions to change injections of reactive power.

**Exhibit C**

**Complete Record of Development of the interpretation for Reliability Standard  
TOP-001-1 — Reliability Responsibilities and Authorities, Requirement R8**

## Project 2009-31 Interpretation of TOP-001-1 R8

**Status:** The interpretation was approved by the NERC Board of Trustees on May 11, 2010. The interpretation will be submitted to FERC for approval.

**Purpose/Industry Need:**

Florida Municipal Power Pool (FMPP) is seeking clarification as to whether it is the Balancing Authority's responsibility to immediately take corrective action to restore Real Power Balance and whether it is the TOP's responsibility to immediately take corrective action to restore Reactive Power Balance.

In accordance with the Reliability Standards Development Procedure, the interpretation must be posted for a 30-day pre-ballot review, and then balloted. There is no public comment period for an interpretation. Balloting will be conducted following the same method used for balloting standards. If the interpretation is approved by its ballot pool, then the interpretation will be appended to the standard and will become effective when adopted by the NERC Board of Trustees and approved by the applicable regulatory authorities. The interpretation will remain appended to the standard until the standard is revised through the normal standards development process. When the standard is revised, the clarifications provided by the interpretation will be incorporated into the revised standard.

Draft	Action	Dates	Results	Consideration of Comments
FMPP TOP-001-1 Requirement R8  <a href="#">Request for Interpretation (1)</a>	<a href="#">Initial Ballot Vote&gt;&gt;   Info&gt;&gt;</a> <b>(4)</b>	03/03/10 - 03/16/10 (closed)	<a href="#">Summary&gt;&gt;</a> <b>(5)</b>  <a href="#">Full Record&gt;&gt;</a> <b>(6)</b>	
<a href="#">Interpretation (2)</a>	<a href="#">Pre-ballot Review Join&gt;&gt;   Info&gt;&gt;</a> <b>(3)</b>	01/29/10 - 03/01/10 (closed)		



**Note: an Interpretation cannot be used to change a standard.**

Request for an Interpretation of a Reliability Standard	
Date submitted:	<a href="#">December 15, 2009</a>
Date accepted:	<a href="#">December 21, 2009</a>
<b>Contact information for person requesting the interpretation:</b>	
Name:	<a href="#">Thomas E Washburn</a>
Organization:	<a href="#">Florida Municipal Power Pool</a>
Telephone:	<a href="#">407-384-4066</a>
E-mail:	<a href="mailto:twashburn@ouc.com">twashburn@ouc.com</a>
<b>Identify the standard that needs clarification:</b>	
Standard Number (include version number):	<a href="#">TOP-001-1</a>
Standard Title:	<a href="#">Reliability Responsibilities and Authorities</a>
<b>Identify specifically what requirement needs clarification:</b>	
<b>Requirement Number and Text of Requirement:</b>	
<p><a href="#">R8. During a system emergency, the Balancing Authority and Transmission Operator shall immediately take action to restore the Real and Reactive Power Balance. If the Balancing Authority or Transmission Operator is unable to restore Real and Reactive Power Balance it shall request emergency assistance from the Reliability Coordinator. If corrective action or emergency assistance is not adequate to mitigate the Real and Reactive Power Balance, then the Reliability Coordinator, Balancing Authority, and Transmission Operator shall implement firm load shedding.</a></p>	
<b>Clarification needed:</b>	
<p><a href="#">Balancing real power is not a function of a TOP and balancing reactive power is not a function of a BA. For Requirement R8 is the Balancing Authority responsibility to immediately take corrective action to restore Real Power Balance and is the TOP responsibility to immediately take corrective action to restore Reactive Power Balance?</a></p>	
<b>Identify the material impact associated with this interpretation:</b>	
<b>Identify the material impact to your organization or others caused by the lack of clarity or an incorrect interpretation of this standard.</b>	
<p><a href="#">Not having the correct interpretation of this requirement could cause a TOP only (TOP that is not a BA) or BA only (BA that is not a TOP) to be found non-compliant.</a></p>	

**Note: an Interpretation cannot be used to change a standard.**

Request for an Interpretation of a Reliability Standard
Date submitted: <a href="#">December 15, 2009</a>
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<b>Identify the standard that needs clarification:</b>
Standard Number (include version number): <a href="#">TOP-001-1</a>
Standard Title: <a href="#">Reliability Responsibilities and Authorities</a>
<b>Identify specifically what requirement needs clarification:</b>
<p><b>Requirement Number and Text of Requirement:</b></p> <p><a href="#">R8. During a system emergency, the Balancing Authority and Transmission Operator shall immediately take action to restore the Real and Reactive Power Balance. If the Balancing Authority or Transmission Operator is unable to restore Real and Reactive Power Balance it shall request emergency assistance from the Reliability Coordinator. If corrective action or emergency assistance is not adequate to mitigate the Real and Reactive Power Balance, then the Reliability Coordinator, Balancing Authority, and Transmission Operator shall implement firm load shedding.</a></p> <p><b>Clarification needed:</b></p> <p><a href="#">Balancing real power is not a function of a TOP and balancing reactive power is not a function of a BA. For Requirement R8 is the Balancing Authority responsibility to immediately take corrective action to restore Real Power Balance and is the TOP responsibility to immediately take corrective action to restore Reactive Power Balance?</a></p>
<b>Identify the material impact associated with this interpretation:</b>
<p><b>Identify the material impact to your organization or others caused by the lack of clarity or an incorrect interpretation of this standard.</b></p> <p><a href="#">Not having the correct interpretation of this requirement could cause a TOP only (TOP that is not a BA) or BA only (BA that is not a TOP) to be found non-compliant.</a></p>

## Project 2009-31: Response to Request for an Interpretation of TOP-001-1, Requirement R8, for the Florida Municipal Power Pool

The following interpretation of TOP-001-1 — Reliability Responsibilities and Authorities, Requirement R8, was developed by the Real-time Operations Standard Drafting Team.

### Requirement Number and Text of Requirement

**R8.** During a system emergency, the Balancing Authority and Transmission Operator shall immediately take action to restore the Real and Reactive Power Balance. If the Balancing Authority or Transmission Operator is unable to restore Real and Reactive Power Balance it shall request emergency assistance from the Reliability Coordinator. If corrective action or emergency assistance is not adequate to mitigate the Real and Reactive Power Balance, then the Reliability Coordinator, Balancing Authority, and Transmission Operator shall implement firm load shedding.

### Question

For Requirement R8 is the Balancing Authority responsibility to immediately take corrective action to restore Real Power Balance and is the TOP responsibility to immediately take corrective action to restore Reactive Power Balance?

### Response

The answer to both questions is yes. According to the NERC *Glossary of Terms Used in Reliability Standards*, the Transmission Operator is responsible for the reliability of its "local" transmission system, and operates or directs the operations of the transmission facilities. Similarly, the Balancing Authority is responsible for maintaining load-interchange-generation balance, i.e., real power balance. In the context of this requirement, the Transmission Operator is the functional entity that balances reactive power. Reactive power balancing can be accomplished by issuing instructions to the Balancing Authority or Generator Operators to alter reactive power injection. Based on NERC Reliability Standard BAL-005-1b Requirement R6, the Transmission Operator has no requirement to compute an Area Control Error (ACE) signal or to balance real power. Based on NERC Reliability Standard VAR-001-1 Requirement R8, the Balancing Authority is not required to resolve reactive power balance issues. According to TOP-001-1 Requirement R3, the Balancing Authority is only required to comply with Transmission Operator or Reliability Coordinator instructions to change injections of reactive power.



NORTH AMERICAN ELECTRIC  
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## Standards Announcement

### Ballot Pool and Pre-ballot Window

January 29–March 1, 2010

Now available at: <https://standards.nerc.net/BallotPool.aspx>

#### **Project 2009-31: Interpretation of TOP-001-1 for the Florida Municipal Power Pool (FMPP)**

An interpretation of standard TOP-001-1 — Reliability Responsibilities and Authorities, Requirement R8, for FMPP is posted for a 30-day pre-ballot review. Registered Ballot Body members may join the ballot pool to be eligible to vote on this interpretation **until 8 a.m. EST on March 1, 2010**.

During the pre-ballot window, members of the ballot pool may communicate with one another by using their “ballot pool list server.” (Once the balloting begins, ballot pool members are prohibited from using the ballot pool list servers.) The list server for this ballot pool is: [bp-2009-31\\_RFI\\_FMPP\\_in@nerc.com](mailto:bp-2009-31_RFI_FMPP_in@nerc.com).

#### **Next Steps**

Voting will begin shortly after the pre-ballot review closes.

#### **Project Background**

FMPP asked if it is the Balancing Authority's responsibility to take immediate corrective action to restore real power balance and if it is the Transmission Operator's responsibility to take immediate corrective action to restore reactive power balance.

The request and interpretation can be found on the project page:

[http://www.nerc.com/filez/standards/Project2009-31\\_TOP-001-1\\_R8\\_FMPP.html](http://www.nerc.com/filez/standards/Project2009-31_TOP-001-1_R8_FMPP.html)

#### **Standards Development Process**

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate.

*For more information or assistance,  
please contact Shaun Streeter at [shaun.streeter@nerc.net](mailto:shaun.streeter@nerc.net) or at 609.452.8060.*



NORTH AMERICAN ELECTRIC  
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## Standards Announcement

### Initial Ballot Window Open

March 3-16, 2010

Now available at: <https://standards.nerc.net/CurrentBallots.aspx>

#### **Project 2009-31: Interpretation of TOP-001-1 for the Florida Municipal Power Pool (FMPP)**

An initial ballot window for an interpretation of standard TOP-001-1 — Reliability Responsibilities and Authorities, Requirement R8, for FMPP is now open **until 8 p.m. Eastern on March 16, 2010.**

#### **Instructions**

Members of the ballot pool associated with this project may log in and submit their votes from the following page: <https://standards.nerc.net/CurrentBallots.aspx>

#### **Next Steps**

Voting results will be posted and announced after the ballot window closes.

#### **Project Background**

FMPP asked if it is the Balancing Authority's responsibility to take immediate corrective action to restore real power balance and if it is the Transmission Operator's responsibility to take immediate corrective action to restore reactive power balance.

The request and interpretation can be found on the project page:

[http://www.nerc.com/filez/standards/Project2009-31\\_TOP-001-1\\_R8\\_FMPP.html](http://www.nerc.com/filez/standards/Project2009-31_TOP-001-1_R8_FMPP.html)

#### **Standards Development Process**

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate.

*For more information or assistance,  
please contact Shaun Streeter at [shaun.streeter@nerc.net](mailto:shaun.streeter@nerc.net) or at 609.452.8060.*



NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Standards Announcement

### Final Ballot Results

Now available at: <https://standards.nerc.net/Ballots.aspx>

#### **Project 2009-31: Interpretation of TOP-001-1 for the Florida Municipal Power Pool (FMPP)**

The initial ballot for an interpretation of standard TOP-001-1 — Reliability Responsibilities and Authorities, Requirement R8, for Florida Municipal Power Pool ended March 16, 2010.

#### **Ballot Results**

Voting statistics are listed below, and the [Ballot Results](#) Web page provides a link to the detailed results:

Quorum: 88.24%

Approval: 98.27%

The ballot pool approved the interpretation. Since no negative votes included a comment (reason), the results from the initial ballot are final. Ballot criteria details are listed at the end of the announcement.

#### **Next Steps**

The interpretation will be submitted to the NERC Board of Trustees for approval.

#### **Project Background**

Florida Municipal Power Pool requested clarification as to whether it is the Balancing Authority's responsibility to immediately take corrective action to restore Real Power Balance and whether it is the TOP's responsibility to immediately take corrective action to restore Reactive Power Balance.

The request and interpretation are posted on the project page:

[http://www.nerc.com/filez/standards/Project2009-31\\_TOP-001-1\\_R8\\_FMPP.html](http://www.nerc.com/filez/standards/Project2009-31_TOP-001-1_R8_FMPP.html)

#### **Standards Development Process**

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate.

#### **Ballot Criteria**

Approval requires both a (1) quorum, which is established by at least 75% of the members of the ballot pool for submitting either an affirmative vote, a negative vote, or an abstention, and (2) A two-thirds majority of the weighted segment votes cast must be affirmative; the number of votes cast is the sum of affirmative and negative votes, excluding abstentions and nonresponses. If there are no negative votes with reasons from the first ballot, the results of the first ballot shall stand. If, however, one or more members submit negative votes with reasons, a second ballot shall be conducted.

For more information or assistance,  
please contact Lauren Koller at [Lauren.Koller@nerc.net](mailto:Lauren.Koller@nerc.net)

User Name

Password

Log in

Register

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- Registered Ballot Body
- Proxy Voters

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Ballot Results	
<b>Ballot Name:</b>	Project 2009-31 - Interpretation - TOP-001-1 for FMPP_in
<b>Ballot Period:</b>	3/3/2010 - 3/16/2010
<b>Ballot Type:</b>	Initial
<b>Total # Votes:</b>	240
<b>Total Ballot Pool:</b>	272
<b>Quorum:</b>	<b>88.24 % The Quorum has been reached</b>
<b>Weighted Segment Vote:</b>	98.27 %
<b>Ballot Results:</b>	<b>The Standard has Passed</b>

Summary of Ballot Results									
Segment	Ballot Pool	Segment Weight	Affirmative		Negative		Abstain # Votes	No Vote	
			# Votes	Fraction	# Votes	Fraction			
1 - Segment 1.		79	1	64	0.955	3	0.045	3	9
2 - Segment 2.		12	0.9	9	0.9	0	0	1	2
3 - Segment 3.		66	1	54	0.947	3	0.053	2	7
4 - Segment 4.		17	1	16	1	0	0	0	1
5 - Segment 5.		48	1	39	0.975	1	0.025	1	7
6 - Segment 6.		34	1	29	1	0	0	1	4
7 - Segment 7.		0	0	0	0	0	0	0	0
8 - Segment 8.		5	0.5	5	0.5	0	0	0	0
9 - Segment 9.		4	0.3	3	0.3	0	0	1	0
10 - Segment 10.		7	0.4	4	0.4	0	0	1	2
<b>Totals</b>		<b>272</b>	<b>7.1</b>	<b>223</b>	<b>6.977</b>	<b>7</b>	<b>0.123</b>	<b>10</b>	<b>32</b>

Individual Ballot Pool Results				
Segment	Organization	Member	Ballot	Comments
1	Allegheny Power	Rodney Phillips		
1	Ameren Services	Kirit S. Shah	Affirmative	
1	American Electric Power	Paul B. Johnson	Affirmative	
1	American Transmission Company, LLC	Jason Shaver	Affirmative	<a href="#">View</a>
1	Associated Electric Cooperative, Inc.	John Bussman		
1	Avista Corp.	Scott Kinney	Affirmative	
1	Baltimore Gas & Electric Company	John J. Moraski	Affirmative	<a href="#">View</a>
1	BC Transmission Corporation	Gordon Rawlings	Affirmative	

1	Beaches Energy Services	Joseph S. Stonecipher	Affirmative	
1	Black Hills Corp	Eric Egge	Affirmative	
1	Bonneville Power Administration	Donald S. Watkins	Affirmative	
1	Brazos Electric Power Cooperative, Inc.	Tony Kroskey	Abstain	
1	CenterPoint Energy	Paul Rocha	Affirmative	
1	Central Maine Power Company	Brian Conroy	Affirmative	
1	City of Vero Beach	Randall McCamish	Affirmative	
1	City Utilities of Springfield, Missouri	Jeff Knottek	Affirmative	
1	Cleco Power LLC	Danny McDaniel	Affirmative	
1	Colorado Springs Utilities	Paul Morland	Affirmative	
1	Consolidated Edison Co. of New York	Christopher L de Graffenried	Affirmative	
1	Dominion Virginia Power	William L. Thompson	Affirmative	
1	Duke Energy Carolina	Douglas E. Hils	Affirmative	
1	E.ON U.S. LLC	Larry Monday		
1	East Kentucky Power Coop.	George S. Carruba	Affirmative	
1	Empire District Electric Co.	Ralph Frederick Meyer	Affirmative	
1	Entergy Corporation	George R. Bartlett	Affirmative	
1	FirstEnergy Energy Delivery	Robert Martinko	Affirmative	
1	Florida Keys Electric Cooperative Assoc.	Dennis Minton		
1	Gainesville Regional Utilities	Luther E. Fair	Affirmative	
1	Georgia Transmission Corporation	Harold Taylor, II	Affirmative	
1	Great River Energy	Gordon Pietsch	Affirmative	
1	Hoosier Energy Rural Electric Cooperative, Inc.	Robert Solomon	Affirmative	<a href="#">View</a>
1	Hydro One Networks, Inc.	Ajay Garg	Affirmative	
1	Idaho Power Company	Ronald D. Schellberg	Affirmative	
1	ITC Transmission	Elizabeth Howell	Affirmative	
1	JEA	Ted E Hobson	Affirmative	
1	Kansas City Power & Light Co.	Michael Gammon	Affirmative	
1	Keys Energy Services	Stan T. Rzad	Affirmative	
1	Lake Worth Utilities	Walt Gill	Negative	
1	Lakeland Electric	Larry E Watt	Affirmative	
1	Lee County Electric Cooperative	John W Delucca	Abstain	
1	Lincoln Electric System	Doug Bantam	Affirmative	
1	Long Island Power Authority	Jonathan Appelbaum	Affirmative	
1	Manitoba Hydro	Michelle Rheault	Affirmative	<a href="#">View</a>
1	MEAG Power	Danny Dees	Affirmative	
1	MidAmerican Energy Co.	Terry Harbour	Affirmative	
1	National Grid	Saurabh Saksena		
1	New York State Electric & Gas Corp.	Henry G. Masti		
1	Northeast Utilities	David H. Boguslawski	Affirmative	
1	Northern Indiana Public Service Co.	Kevin M Largura		
1	NorthWestern Energy	John Canavan	Affirmative	
1	Ohio Valley Electric Corp.	Robert Matthey	Affirmative	
1	Oklahoma Gas and Electric Co.	Marvin E VanBebber	Affirmative	
1	Oncor Electric Delivery	Michael T. Quinn	Affirmative	
1	Orlando Utilities Commission	Brad Chase	Affirmative	
1	Otter Tail Power Company	Lawrence R. Larson	Affirmative	
1	PacifiCorp	Mark Sampson	Negative	
1	Potomac Electric Power Co.	Richard J. Kafka	Affirmative	
1	PowerSouth Energy Cooperative	Larry D. Avery	Negative	
1	PPL Electric Utilities Corp.	Brenda L Truhe	Abstain	
1	Progress Energy Carolinas	Sammy Roberts	Affirmative	
1	Public Service Electric and Gas Co.	Kenneth D. Brown	Affirmative	
1	Puget Sound Energy, Inc.	Catherine Koch		
1	Sacramento Municipal Utility District	Tim Kelley	Affirmative	
1	Salt River Project	Robert Kondziolka	Affirmative	
1	San Diego Gas & Electric	Linda Brown	Affirmative	
1	Santee Cooper	Terry L. Blackwell	Affirmative	
1	SCE&G	Henry Delk, Jr.	Affirmative	
1	Seattle City Light	Pawel Krupa	Affirmative	
1	South Texas Electric Cooperative	Richard McLeon	Affirmative	
1	Southern California Edison Co.	Dana Cabbell	Affirmative	
1	Southern Company Services, Inc.	Horace Stephen Williamson	Affirmative	
1	Southwest Transmission Cooperative, Inc.	James L. Jones	Affirmative	
1	Southwestern Power Administration	Gary W Cox	Affirmative	
1	Tampa Electric Co.	Thomas J. Szelistowski		



1	Tri-State G & T Association Inc.	Keith V. Carman	Affirmative	
1	Tucson Electric Power Co.	John Tolo	Affirmative	
1	Westar Energy	Allen Klassen	Affirmative	
1	Western Area Power Administration	Brandy A Dunn	Affirmative	
1	Xcel Energy, Inc.	Gregory L Pieper	Affirmative	
2	Alberta Electric System Operator	Jason L. Murray	Affirmative	
2	BC Transmission Corporation	Famaraz Amjadi	Affirmative	
2	California ISO	Timothy VanBlaricom	Affirmative	
2	Electric Reliability Council of Texas, Inc.	Chuck B Manning	Affirmative	<a href="#">View</a>
2	Florida Municipal Power Pool	Thomas E Washburn	Affirmative	
2	Independent Electricity System Operator	Kim Warren	Affirmative	<a href="#">View</a>
2	ISO New England, Inc.	Kathleen Goodman	Abstain	<a href="#">View</a>
2	Midwest ISO, Inc.	Jason L Marshall	Affirmative	
2	New Brunswick System Operator	Alden Briggs		
2	New York Independent System Operator	Gregory Campoli		
2	PJM Interconnection, L.L.C.	Tom Bowe	Affirmative	
2	Southwest Power Pool	Charles H Yeung	Affirmative	<a href="#">View</a>
3	Alabama Power Company	Richard J. Mandes	Affirmative	
3	Ameren Services	Mark Peters	Affirmative	
3	American Electric Power	Raj Rana		
3	Arizona Public Service Co.	Thomas R. Glock	Affirmative	
3	Atlantic City Electric Company	James V. Petrella	Affirmative	
3	BC Hydro and Power Authority	Pat G. Harrington	Abstain	
3	Black Hills Power	Andy Butcher		
3	Blue Ridge Power Agency	Duane S. Dahlquist	Affirmative	
3	Bonneville Power Administration	Rebecca Berdahl	Affirmative	
3	City of Bartow, Florida	Matt Culverhouse	Affirmative	
3	City of Clewiston	Lynne Mila	Affirmative	
3	City of Farmington	Linda R. Jacobson	Affirmative	
3	City of Green Cove Springs	Gregg R Griffin	Negative	
3	Cleco Utility Group	Bryan Y Harper	Affirmative	
3	ComEd	Bruce Krawczyk		
3	Consolidated Edison Co. of New York	Peter T Yost	Affirmative	
3	Constellation Energy	Carolyn Ingersoll	Affirmative	
3	Consumers Energy	David A. Lapinski	Affirmative	
3	Cowlitz County PUD	Russell A Noble	Affirmative	
3	Delmarva Power & Light Co.	Michael R. Mayer	Affirmative	
3	Detroit Edison Company	Kent Kujala	Affirmative	
3	Dominion Resources, Inc.	Jalal (John) Babik	Affirmative	
3	Duke Energy Carolina	Henry Ernst-Jr	Affirmative	
3	Entergy Services, Inc.	Matt Wolf	Affirmative	
3	FirstEnergy Solutions	Kevin Querry	Affirmative	<a href="#">View</a>
3	Florida Municipal Power Agency	Joe McKinney	Negative	
3	Florida Power Corporation	Lee Schuster	Affirmative	
3	Gainesville Regional Utilities	Kenneth Simmons		
3	Georgia Power Company	Anthony L Wilson	Affirmative	
3	Georgia System Operations Corporation	R Scott S. Barfield-McGinnis	Affirmative	
3	Grays Harbor PUD	Wesley W Gray	Affirmative	
3	Great River Energy	Sam Kokkinen	Affirmative	
3	Gulf Power Company	Gwen S Frazier	Affirmative	
3	Hydro One Networks, Inc.	Michael D. Penstone	Affirmative	
3	JEA	Garry Baker	Affirmative	
3	Kansas City Power & Light Co.	Charles Locke	Affirmative	
3	Kissimmee Utility Authority	Gregory David Woessner	Negative	
3	Lakeland Electric	Mace Hunter	Affirmative	
3	Lincoln Electric System	Bruce Merrill	Affirmative	
3	Los Angeles Department of Water & Power	Kenneth Silver		
3	Louisville Gas and Electric Co.	Charles A. Freibert	Abstain	
3	Manitoba Hydro	Greg C Parent	Affirmative	<a href="#">View</a>
3	MidAmerican Energy Co.	Thomas C. Mielnik	Affirmative	
3	Mississippi Power	Don Horsley	Affirmative	
3	New York Power Authority	Marilyn Brown	Affirmative	
3	Niagara Mohawk (National Grid Company)	Michael Schiavone	Affirmative	
3	Northern Indiana Public Service Co.	William SeDoris	Affirmative	
3	Ocala Electric Utility	David T. Anderson	Affirmative	
3	Orlando Utilities Commission	Ballard Keith Mutters	Affirmative	
3	PacifiCorp	John Apperson	Affirmative	

3	Platte River Power Authority	Terry L Baker	Affirmative	
3	Potomac Electric Power Co.	Robert Reuter	Affirmative	
3	Progress Energy Carolinas	Sam Waters	Affirmative	
3	Public Service Electric and Gas Co.	Jeffrey Mueller	Affirmative	
3	Public Utility District No. 2 of Grant County	Greg Lange	Affirmative	
3	Sacramento Municipal Utility District	James Leigh-Kendall	Affirmative	
3	Salt River Project	John T. Underhill	Affirmative	
3	Santee Cooper	Zack Dusenbury	Affirmative	
3	Seattle City Light	Dana Wheelock	Affirmative	
3	South Carolina Electric & Gas Co.	Hubert C. Young		
3	Southern California Edison Co.	David Schiada	Affirmative	
3	Tampa Electric Co.	Ronald L Donahey		
3	Tri-State G & T Association Inc.	Janelle Marriott	Affirmative	
3	Wisconsin Electric Power Marketing	James R. Keller	Affirmative	
3	Wisconsin Public Service Corp.	Gregory J Le Grave	Affirmative	
3	Xcel Energy, Inc.	Michael Ibold	Affirmative	
4	Alliant Energy Corp. Services, Inc.	Kenneth Goldsmith	Affirmative	
4	City of Clewiston	Kevin McCarthy	Affirmative	
4	City of New Smyrna Beach Utilities Commission	Timothy Beyrle	Affirmative	
4	Consumers Energy	David Frank Ronk	Affirmative	
4	Detroit Edison Company	Daniel Herring	Affirmative	
4	Florida Municipal Power Agency	Frank Gaffney	Affirmative	
4	Fort Pierce Utilities Authority	Thomas W. Richards	Affirmative	
4	Georgia System Operations Corporation	Guy Andrews	Affirmative	
4	Madison Gas and Electric Co.	Joseph G. DePoorter	Affirmative	<a href="#">View</a>
4	Northern California Power Agency	Fred E. Young		
4	Ohio Edison Company	Douglas Hohlbaugh	Affirmative	
4	Public Utility District No. 1 of Douglas County	Henry E. LuBean	Affirmative	
4	Sacramento Municipal Utility District	Mike Ramirez	Affirmative	
4	Seattle City Light	Hao Li	Affirmative	
4	Seminole Electric Cooperative, Inc.	Steven R Wallace	Affirmative	
4	South Mississippi Electric Power Association	Steve McElhaney	Affirmative	
4	Wisconsin Energy Corp.	Anthony Jankowski	Affirmative	
5	AEP Service Corp.	Brock Ondayko	Affirmative	
5	Avista Corp.	Edward F. Groce	Affirmative	
5	Black Hills Corp	George Tatar	Affirmative	
5	Bonneville Power Administration	Francis J. Halpin	Affirmative	
5	City of Tallahassee	Alan Gale	Affirmative	
5	City Water, Light & Power of Springfield	Karl E. Kohlrus	Affirmative	
5	Cleco Power LLC	Grant Bryant	Affirmative	
5	Conectiv Energy Supply, Inc.	Kara Dundas	Affirmative	
5	Consolidated Edison Co. of New York	Edwin E Thompson	Affirmative	
5	Consumers Energy	James B Lewis	Affirmative	
5	Dairyland Power Coop.	Warren Schaefer	Affirmative	
5	Detroit Edison Company	Ronald W. Bauer	Affirmative	
5	Dominion Resources, Inc.	Mike Garton	Affirmative	
5	Duke Energy	Robert Smith	Affirmative	
5	Edison Mission Energy	Ellen Oswald		
5	Entergy Corporation	Stanley M Jaskot		
5	FirstEnergy Solutions	Kenneth Dresner	Affirmative	
5	Florida Municipal Power Agency	David Schumann		
5	Great River Energy	Cynthia E Sulzer	Affirmative	
5	JEA	Donald Gilbert	Affirmative	
5	Kansas City Power & Light Co.	Scott Heidtbrink	Affirmative	
5	Kissimmee Utility Authority	Mike Blough	Affirmative	
5	Lincoln Electric System	Dennis Florum	Affirmative	
5	Louisville Gas and Electric Co.	Charlie Martin	Abstain	
5	Manitoba Hydro	Mark Aikens	Affirmative	<a href="#">View</a>
5	MidAmerican Energy Co.	Christopher Schneider	Affirmative	
5	New York Power Authority	Gerald Mannarino	Affirmative	
5	Northern Indiana Public Service Co.	Michael K Wilkerson	Affirmative	
5	Orlando Utilities Commission	Richard Kinan	Affirmative	
5	PacifiCorp	Sandra L. Shaffer	Affirmative	
5	Portland General Electric Co.	Gary L Tingley		
5	PowerSouth Energy Cooperative	Tim Hattaway		
5	PPL Generation LLC	Mark A. Heimbach	Affirmative	

5	Progress Energy Carolinas	Wayne Lewis	Affirmative	
5	PSEG Power LLC	David Murray	Affirmative	
5	RRI Energy	Thomas J. Bradish	Affirmative	
5	Sacramento Municipal Utility District	Bethany Wright	Affirmative	
5	Salt River Project	Glen Reeves	Affirmative	
5	Seattle City Light	Michael J. Haynes	Negative	
5	Seminole Electric Cooperative, Inc.	Brenda K. Atkins	Affirmative	
5	South California Edison Company	Ahmad Sanati	Affirmative	
5	South Mississippi Electric Power Association	Jerry W Johnson		
5	Tenaska, Inc.	Scott M. Helyer	Affirmative	
5	U.S. Army Corps of Engineers Northwestern Division	Karl Bryan	Affirmative	
5	U.S. Bureau of Reclamation	Martin Bauer P.E.		
5	Wisconsin Electric Power Co.	Linda Horn	Affirmative	
5	Wisconsin Public Service Corp.	Leonard Rentmeester	Affirmative	
5	Xcel Energy, Inc.	Liam Noailles	Affirmative	
6	AEP Marketing	Edward P. Cox	Affirmative	
6	Black Hills Corp	Tyson Taylor	Affirmative	
6	Bonneville Power Administration	Brenda S. Anderson	Affirmative	
6	Cleco Power LLC	Matthew D Cripps	Affirmative	
6	Consolidated Edison Co. of New York	Nickesha P Carrol	Affirmative	
6	Constellation Energy Commodities Group	Chris Lyons		
6	Dominion Resources, Inc.	Louis S Slade	Affirmative	
6	Duke Energy Carolina	Walter Yeager	Affirmative	
6	Entergy Services, Inc.	Terri F Benoit		
6	FirstEnergy Solutions	Mark S Travaglianti	Affirmative	
6	Florida Municipal Power Agency	Richard L. Montgomery	Affirmative	
6	Florida Power & Light Co.	Silvia P Mitchell		
6	Great River Energy	Donna Stephenson	Affirmative	
6	Kansas City Power & Light Co.	Thomas Saitta	Affirmative	
6	Lakeland Electric	Paul Shipp	Affirmative	
6	Lincoln Electric System	Eric Ruskamp	Affirmative	
6	Louisville Gas and Electric Co.	Daryn Barker	Abstain	
6	Manitoba Hydro	Daniel Prowse	Affirmative	<a href="#">View</a>
6	New York Power Authority	Thomas Papadopoulos	Affirmative	
6	Northern Indiana Public Service Co.	Joseph O'Brien	Affirmative	
6	Omaha Public Power District	David Ried	Affirmative	
6	PacifiCorp	Gregory D Maxfield	Affirmative	
6	Progress Energy	James Eckelkamp	Affirmative	
6	PSEG Energy Resources & Trade LLC	James D. Hebson	Affirmative	
6	Public Utility District No. 1 of Chelan County	Hugh A. Owen		
6	RRI Energy	Trent Carlson	Affirmative	
6	Salt River Project	Mike Hummel	Affirmative	
6	Santee Cooper	Suzanne Ritter	Affirmative	
6	Seattle City Light	Dennis Sismaet	Affirmative	
6	Seminole Electric Cooperative, Inc.	Trudy S. Novak	Affirmative	
6	South Carolina Electric & Gas Co.	Matt H Bullard	Affirmative	
6	Southern California Edison Co.	Marcus V Lotto	Affirmative	
6	Western Area Power Administration - UGP Marketing	John Stonebarger	Affirmative	
6	Xcel Energy, Inc.	David F. Lemmons	Affirmative	
8		James A Maenner	Affirmative	
8		Roger C Zaklukiewicz	Affirmative	
8	JDRJC Associates	Jim D. Cyrulewski	Affirmative	
8	Power Energy Group LLC	Peggy Abbadini	Affirmative	
8	Volkman Consulting, Inc.	Terry Volkman	Affirmative	
9	California Energy Commission	William Mitchell Chamberlain	Affirmative	
9	Commonwealth of Massachusetts Department of Public Utilities	Donald E. Nelson	Affirmative	
9	Maine Public Utilities Commission	Jacob A McDermott	Abstain	
9	Oregon Public Utility Commission	Jerome Murray	Affirmative	
10	Electric Reliability Council of Texas, Inc.	Kent Saathoff	Affirmative	
10	Florida Reliability Coordinating Council	Linda Campbell	Abstain	
10	Midwest Reliability Organization	Dan R. Schoenecker	Affirmative	
10	New York State Reliability Council	Alan Adamson	Affirmative	
10	Northeast Power Coordinating Council, Inc.	Guy V. Zito	Affirmative	
10	ReliabilityFirst Corporation	Jacque Smith		
10	SERC Reliability Corporation	Carter B Edge		



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## Exhibit D

### Roster of the Interpretation Development Team

Jim Case — Entergy	Paul Bleuss — CAISO	Al DiCaprio — PJM
Jason Marshall — MISO	Gregory Vanpelt — CAISO	Steven Myers — ERCOT
Al McMeekin, NERC staff		