

**Exhibit A**

**Interpretations of Requirements R1 and R3 of Reliability Standard PRC-004-1 —**

**Analysis and Mitigation of Transmission and Generation Protection System**

**Misoperations and Requirements R1 and R2 of Reliability Standard PRC-005-1 —**

**Transmission and Generation Protection System Maintenance and Testing.**

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

Request for an Interpretation of a Reliability Standard	
<b>Date submitted:</b> <a href="#">March 25, 2009</a>	
<b>Contact information for person requesting the interpretation:</b>	
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<b>Organization:</b> <a href="#">Y-W Electric Association, Inc.</a> <a href="#">Tri-State Generation &amp; Transmission Association, Inc.</a>	
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<b>Identify the standard that needs clarification:</b>	
<b>Standard Number (include version number):</b> <a href="#">PRC-004-1</a> and <a href="#">PRC-005-1</a>	
<b>Standard Title:</b> <a href="#">Analysis &amp; Mitigation of Transmission/Generation Protection System Misoperations; Transmission &amp; Generation Protection System Maintenance &amp; Testing</a>	
<b>Identify specifically what needs clarification</b>	
<b>Requirement Number and Text of Requirement:</b>	
<b>In Standard <a href="#">PRC-004-1</a>:</b>	
<p><b>R1.</b> The Transmission Owner and any Distribution Provider that owns a transmission Protection System shall each analyze its transmission Protection System Misoperations and shall develop and implement a Corrective Action Plan to avoid future Misoperations of a similar nature according to the Regional Reliability Organization's procedures developed for Reliability Standard PRC-003 Requirement 1.</p> <p><b>R3.</b> The Transmission Owner, any Distribution Provider that owns a transmission Protection System, and the Generator Owner shall each provide to its Regional Reliability Organization, documentation of its Misoperations analyses and Corrective Action Plans according to the Regional Reliability Organization's procedures developed for PRC-003 R1.</p>	
<b>In Standard <a href="#">PRC-005-1</a>:</b>	
<p><b>R1.</b> Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall have a Protection System maintenance and testing program for</p>	

Protection Systems that affect the reliability of the BES. The program shall include:

**R1.1.** Maintenance and testing intervals and their basis.

**R1.2.** Summary of maintenance and testing procedures.

**R2.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization on request (within 30 calendar days). The documentation of the program implementation shall include:

**R2.1.** Evidence Protection System devices were maintained and tested within the defined intervals.

**R2.2.** Date each Protection System device was last tested/maintained.

**Clarification needed:**

Y-W Electric Association, Inc. (Y-WEA) and Tri-State Generation and Transmission Association, Inc. (Tri-State) respectfully request an interpretation of the term "transmission Protection System" and specifically whether protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System and is subject to these standards.

**Background:**

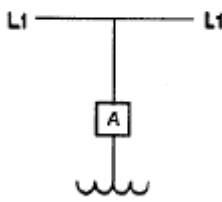
The requirements above from PRC-004-1 and PRC-005-1 refer to "the Transmission Owner and any Distribution Provider that owns a transmission Protection System" and place various testing and reporting requirements on these entities. The term "Protection System" is defined in the NERC glossary, and other interpretation requests currently under consideration cover the fine details of what this term means. However, these standards narrow the scope of their applicability to "transmission" Protection Systems. Unfortunately, this narrowing causes much confusion as to the applicability of these standards because the entire term "Transmission Protection System" is not defined anywhere in NERC's documentation.

There is some debate as to what constitutes a transmission Protection System, versus any other Protection System. For example, consider a tap from a looped 115 kV transmission system where this tap consists of a step-down power transformer and its associated distribution system. The Protection System includes the transformer protection equipment (overcurrent and differential relaying with a circuit switcher) and the associated distribution system protection equipment (usually reclosers). For this example, all connected distribution facilities are designed to be radial in nature and are normally operated radially, with only the possibility of being briefly connected in parallel with other distribution facilities during switching to feed this load from another substation while this substation is taken out of service.

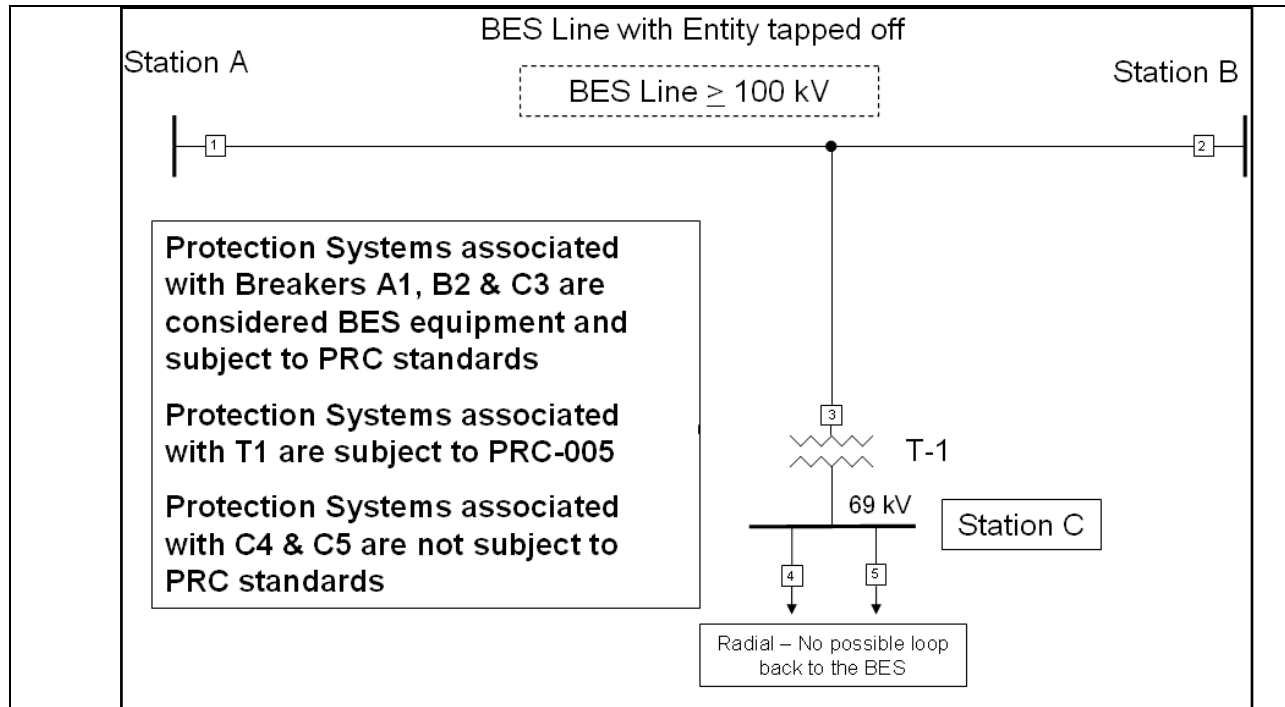
In this example, the looped 115 kV transmission system may be part of the Bulk Electric System and its protective relays and breakers located at the endpoints of this line section would be considered transmission Protection Systems and be subject to these standards. The status of the transformer protection equipment is unclear, though. The protective relays and the circuit switcher are connected at or attached to equipment that is connected at 115 kV, but this equipment is essentially connected to the BES radially, serves radial load, and is not necessarily designed to protect the transmission system to which it is connected. In fact, in many cases this equipment is designed strictly to protect the transformer from overloads and

through-faults relating to the connected distribution system as well as to minimize transformer damage resulting from internal faults by rapidly de-energizing the transformer for such internal faults.

There is a lack of consistent application or interpretation of these rules between various Regional Entities. For instance, ReliabilityFirst Corporation's Appendix A to their Bulk Electric System Definition shown below (available at <http://www.rfirst.org/Documents/AboutUs/Members/RFC%20BES%20Definition.pdf>) directly addresses this question, indicating that the transformer protection equipment in the above example would not be considered a transmission Protection System.

ReliabilityFirst Corp.	Bulk Electric System Definition
<p><b>Example 1B:</b> In another example, if a 138/12.47 kV distribution transformer is tapped from a networked 138 kV line which is included in the BES, and that transformer has protective relays (such as differential relays) that trip <u>only</u> the distribution transformer out-of-service and do not trip the networked 138 kV line; then those protective relays are <u>not included</u> as part of the BES definition. Breaker failure relaying on Breaker A, if any, is included if operation results in tripping of the networked 138kV line (Reference Diagram 1B.)</p>	
	
<p>Diagram 1B</p> <p>Relays protecting non-BES facility (e.g. transformer with secondary windings less than 100 kV) and tripping Breaker A are <u>not included</u> as part of BES.</p>	

However, slide 42 of Western Electricity Coordinating Council's PowerPoint presentation from their August 12, 2008 Relay Workshop (available at <http://www.wecc.biz/documents/library/compliance/2008/2008%2008%2012%20-%20Relay%20Workshop%20-%20Portland,%20OR%20-%20Presentation.ppt>) and shown below, also directly addresses this question, indicating that the equipment in the example above would be considered a transmission Protection System and would be subject to PRC-004-1 and PRC-005-1.



These issues stem from the fact that the term "transmission Protection System" is not clearly defined.

**Identify the material impact associated with this interpretation:**

**Identify the material impact to your organization or others caused by the lack of clarity or an incorrect interpretation of this standard.**

Depending upon the interpreted definition of the term "transmission Protection System," Y-WEA and other Tri-State members who are Distribution Providers and own substations connecting to the BES for power delivery from a wholesale provider as well as Tri-State and other Transmission Owners could be directly and materially affected by these standards. Y-WEA and other Tri-State members are compliant with these NERC standards. We believe the applicability of WECC's more stringent interpretation must be clarified for uniform enforcement.

Alleged violations from a WECC audit where these standards were not thought to be applicable could result in sanctions and civil penalties.

## Project 2009-17: Response to Request for an Interpretation of PRC-004-1 and PRC-005-1 for Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc.

The following interpretation of PRC-004-1 — Analysis and Mitigation of Transmission and Generation Protection System Misoperations Requirements R1 and R3 and PRC-005-1 – Transmission and Generation Protection System Maintenance and Testing Requirements R1 and R2 was developed by the System Protection and Controls Subcommittee.

### Requirement Number and Text of Requirement

#### PRC-004-1:

**R1.** The Transmission Owner and any Distribution Provider that owns a transmission Protection System shall each analyze its transmission Protection System Misoperations and shall develop and implement a Corrective Action Plan to avoid future Misoperations of a similar nature according to the Regional Reliability Organization's procedures developed for Reliability Standard PRC-003 Requirement 1.

**R3.** The Transmission Owner, any Distribution Provider that owns a transmission Protection System, and the Generator Owner shall each provide to its Regional Reliability Organization, documentation of its Misoperations analyses and Corrective Action Plans according to the Regional Reliability Organization's procedures developed for PRC-003 R1.

#### PRC-005-1:

**R1.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall have a Protection System maintenance and testing program for Protection Systems that affect the reliability of the BES. The program shall include:

**R1.1.** Maintenance and testing intervals and their basis.

**R1.2.** Summary of maintenance and testing procedures.

**R2.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization on request (within 30 calendar days). The documentation of the program implementation shall include:

**R2.1.** Evidence Protection System devices were maintained and tested within the defined intervals.

**R2.2.** Date each Protection System device was last tested/maintained.

### Question

Y-W Electric Association, Inc. (Y-WEA) and Tri-State Generation and Transmission Association, Inc. (Tri-State) respectfully request an interpretation of the term "transmission

Protection System" and specifically whether protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System and is subject to these standards.

## Response

The request for interpretation of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2 focuses on the applicability of the term "transmission Protection System." The NERC *Glossary of Terms Used in Reliability Standards* contains a definition of "Protection System" but does not contain a definition of transmission Protection System. The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES).

In general, a radially connected transformer protection system energized from the BES would not be considered a transmission Protection System. In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission system faults, then these Protection Systems would be considered transmission Protection Systems.

It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity.

**Exhibit B**

**Reliability Standards PRC-004-1a and PRC-005-1a, which include the appended interpretations of Requirements R1 and R3 of PRC-004-1 and Requirements R1 and R2 of Reliability Standard PRC-005-1.**



**A. Introduction**

- 1. Title:** Analysis and Mitigation of Transmission and Generation Protection System Misoperations
- 2. Number:** PRC-004-1a
- 3. Purpose:** Ensure all transmission and generation Protection System Misoperations affecting the reliability of the Bulk Electric System (BES) are analyzed and mitigated.
- 4. Applicability**
  - 4.1.** Transmission Owner.
  - 4.2.** Distribution Provider that owns a transmission Protection System.
  - 4.3.** Generator Owner.
- 5. Effective Date:** To be determined

**B. Requirements**

The Transmission Owner and any Distribution Provider that owns a transmission Protection System shall each analyze its transmission Protection System Misoperations and shall develop and implement a Corrective Action Plan to avoid future Misoperations of a similar nature according to the Regional Reliability Organization's procedures developed for Reliability Standard PRC-003 Requirement 1.

The Generator Owner shall analyze its generator Protection System Misoperations, and shall develop and implement a Corrective Action Plan to avoid future Misoperations of a similar nature according to the Regional Reliability Organization's procedures developed for PRC-003 R1.

The Transmission Owner, any Distribution Provider that owns a transmission Protection System, and the Generator Owner shall each provide to its Regional Reliability Organization, documentation of its Misoperations analyses and Corrective Action Plans according to the Regional Reliability Organization's procedures developed for PRC-003 R1.

**C. Measures**

- M1.** The Transmission Owner, and any Distribution Provider that owns a transmission Protection System shall each have evidence it analyzed its Protection System Misoperations and developed and implemented Corrective Action Plans to avoid future Misoperations of a similar nature according to the Regional Reliability Organization procedures developed for PRC-003 R1.
- M2.** The Generator Owner shall have evidence it analyzed its Protection System Misoperations and developed and implemented Corrective Action Plans to avoid future Misoperations of a similar nature according to the Regional Reliability Organization's procedures developed for PRC-003 R1.
- M3.** Each Transmission Owner, and any Distribution Provider that owns a transmission Protection System, and each Generator Owner shall have evidence it provided documentation of its Protection System Misoperations, analyses and Corrective Action Plans according to the Regional Reliability Organization procedures developed for PRC-003 R1.

**D. Compliance**

- 1. Compliance Monitoring Process**
  - 1.1. Compliance Monitoring Responsibility**

Regional Reliability Organization.

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

One calendar year.

**1.3. Data Retention**

The Transmission Owner, and Distribution Provider that own a transmission Protection System and the Generator Owner that owns a generation Protection System shall each retain data on its Protection System Misoperations and each accompanying Corrective Action Plan until the Corrective Action Plan has been executed or for 12 months, whichever is later.

The Compliance Monitor shall retain any audit data for three years.

**1.4. Additional Compliance Information**

The Transmission Owner, and any Distribution Provider that owns a transmission Protection System and the Generator Owner shall demonstrate compliance through self-certification or audit (periodic, as part of targeted monitoring or initiated by complaint or event), as determined by the Compliance Monitor.

**2. Levels of Non-Compliance for Transmission Owners and Distribution Providers that own a Transmission Protection System:**

**2.1. Level 1:** Documentation of Misoperations is complete according to PRC-004 R1, but documentation of Corrective Action Plans is incomplete.

**2.2. Level 2:** Documentation of Misoperations is incomplete according to PRC-004 R1 and documentation of Corrective Action Plans is incomplete.

**2.3. Level 3:** Documentation of Misoperations is incomplete according to PRC-004 R1 and there are no associated Corrective Action Plans.

**2.4. Level 4:** Misoperations have not been analyzed and documentation has not been provided to the Regional Reliability Organization according to Requirement 3.

**3. Levels of Non-Compliance for Generator Owners**

**3.1. Level 1:** Documentation of Misoperations is complete according to PRC-004 R2, but documentation of Corrective Action Plans is incomplete.

**3.2. Level 2:** Documentation of Misoperations is incomplete according to PRC-004 R2 and documentation of Corrective Action Plans is incomplete.

**3.3. Level 3:** Documentation of Misoperations is incomplete according to PRC-004 R2 and there are no associated Corrective Action Plans.

**3.4. Level 4:** Misoperations have not been analyzed and documentation has not been provided to the Regional Reliability Organization according to R3.

**E. Regional Differences**

None identified.

**Standard PRC-004-1a — Analysis and Mitigation of Transmission and Generation Protection System Misoperations**

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**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
1	December 1, 2005	<ol style="list-style-type: none"> <li>1. Changed incorrect use of certain hyphens (-) to “en dash” (–) and “em dash (—).”</li> <li>2. Added “periods” to items where appropriate. Changed “Timeframe” to “Time Frame” in item D, 1.2.</li> </ol>	01/20/06
1a	February 17, 2011	3. Added Appendix 1 - Interpretation regarding applicability of standard to protection of radially connected transformers	Project 2009-17 interpretation
1a	February 17, 2011	Adopted by the Board of Trustees	

## Appendix 1

Requirement Number and Text of Requirement
<p><b>R1.</b> The Transmission Owner and any Distribution Provider that owns a transmission Protection System shall each analyze its transmission Protection System Misoperations and shall develop and implement a Corrective Action Plan to avoid future Misoperations of a similar nature according to the Regional Reliability Organization’s procedures developed for Reliability Standard PRC-003 Requirement 1.</p> <p><b>R3.</b> The Transmission Owner, any Distribution Provider that owns a transmission Protection System, and the Generator Owner shall each provide to its Regional Reliability Organization, documentation of its Misoperations analyses and Corrective Action Plans according to the Regional Reliability Organization’s procedures developed for PRC-003 R1.</p>
Question:
<p>Is protection for a radially-connected transformer protection system energized from the BES considered a transmission Protection System subject to this standard?</p>
Response:
<p>The request for interpretation of PRC-004-1 Requirements R1 and R3 focuses on the applicability of the term “transmission Protection System.” The NERC Glossary of Terms Used in Reliability Standards contains a definition of “Protection System” but does not contain a definition of transmission Protection System. In these two standards, use of the phrase transmission Protection System indicates that the requirements using this phrase are applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.</p> <p>A Protection System for a radially connected transformer energized from the BES would be considered a transmission Protection System and subject to these standards only if the protection trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element.</p>

**A. Introduction**

- 1. Title:**           **Transmission and Generation Protection System Maintenance and Testing**
- 2. Number:**       PRC-005-1a
- 3. Purpose:**      To ensure all transmission and generation Protection Systems affecting the reliability of the Bulk Electric System (BES) are maintained and tested.
- 4. Applicability**
  - 4.1.** Transmission Owner.
  - 4.2.** Generator Owner.
  - 4.3.** Distribution Provider that owns a transmission Protection System.
- 5. Effective Date:**    To be determined

**B. Requirements**

- R1.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall have a Protection System maintenance and testing program for Protection Systems that affect the reliability of the BES. The program shall include:
- R1.1.** Maintenance and testing intervals and their basis.
  - R1.2.** Summary of maintenance and testing procedures.
- R2.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization on request (within 30 calendar days). The documentation of the program implementation shall include:
- R2.1.** Evidence Protection System devices were maintained and tested within the defined intervals.
  - R2.2.** Date each Protection System device was last tested/maintained.

**C. Measures**

- M1.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System that affects the reliability of the BES, shall have an associated Protection System maintenance and testing program as defined in Requirement 1.
- M2.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System that affects the reliability of the BES, shall have evidence it provided documentation of its associated Protection System maintenance and testing program and the implementation of its program as defined in Requirement 2.

**D. Compliance**

- 1. Compliance Monitoring Process**
  - 1.1. Compliance Monitoring Responsibility**

Regional Reliability Organization.

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

One calendar year.

**1.3. Data Retention**

The Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System, shall retain evidence of the implementation of its Protection System maintenance and testing program for three years.

The Compliance Monitor shall retain any audit data for three years.

**1.4. Additional Compliance Information**

The Transmission Owner and any Distribution Provider that owns a transmission Protection System and the Generator Owner that owns a generation Protection System, shall each demonstrate compliance through self-certification or audit (periodic, as part of targeted monitoring or initiated by complaint or event), as determined by the Compliance Monitor.

**2. Levels of Non-Compliance**

- 2.1. Level 1:** Documentation of the maintenance and testing program provided was incomplete as required in R1, but records indicate maintenance and testing did occur within the identified intervals for the portions of the program that were documented.
- 2.2. Level 2:** Documentation of the maintenance and testing program provided was complete as required in R1, but records indicate that maintenance and testing did not occur within the defined intervals.
- 2.3. Level 3:** Documentation of the maintenance and testing program provided was incomplete, and records indicate implementation of the documented portions of the maintenance and testing program did not occur within the identified intervals.
- 2.4. Level 4:** Documentation of the maintenance and testing program, or its implementation, was not provided.

**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
1	December 1, 2005	<ul style="list-style-type: none"> <li>1. Changed incorrect use of certain hyphens (-) to “en dash” (–) and “em dash (—).”</li> <li>2. Added “periods” to items where appropriate.</li> <li>3. Changed “Timeframe” to “Time Frame” in item D, 1.2.</li> </ul>	01/20/05
1a	February 17, 2011	<ul style="list-style-type: none"> <li>4. Added Appendix 1 - Interpretation</li> </ul>	Project 2009-17

**Standard PRC-005-1a — Transmission and Generation Protection System Maintenance and Testing**

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		regarding applicability of standard to protection of radially connected transformers	interpretation
1a	February 17, 2011	5. Adopted by Board of Trustees	

## Appendix 1

Requirement Number and Text of Requirement
<p><b>R1.</b> Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall have a Protection System maintenance and testing program for Protection Systems that affect the reliability of the BES. The program shall include:</p> <p><b>R1.1.</b> Maintenance and testing intervals and their basis.</p> <p><b>R1.2.</b> Summary of maintenance and testing procedures.</p> <p><b>R2.</b> Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization on request (within 30 calendar days). The documentation of the program implementation shall include:</p> <p><b>R2.1</b> Evidence Protection System devices were maintained and tested within the defined intervals.</p> <p><b>R2.2</b> Date each Protection System device was last tested/maintained.</p>
<b>Question:</b>
Is protection for a radially-connected transformer protection system energized from the BES considered a transmission Protection System subject to this standard?
<b>Response:</b>
<p>The request for interpretation of PRC-005-1 Requirements R1 and R2 focuses on the applicability of the term “transmission Protection System.” The NERC Glossary of Terms Used in Reliability Standards contains a definition of “Protection System” but does not contain a definition of transmission Protection System. In these two standards, use of the phrase transmission Protection System indicates that the requirements using this phrase are applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.</p> <p>A Protection System for a radially connected transformer energized from the BES would be considered a transmission Protection System and subject to these standards only if the protection trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element.</p>



**Exhibit C**

**Stakeholder Comments Received During Balloting and an Explanation of How  
Comments Were Considered**

## Project 2009-17: Interpretation of PRC-004-1 and PRC-005-1 for Y-W Electric and Tri-State Consideration of Comments on Initial Ballot (July 31-August 10, 2009)

### Summary Consideration:

The majority of negative voters provided concerns within three distinct areas: 1) The interpretation is defining a new term, “transmission Protection System,” which should not take place in an interpretation but rather as part of a standard revision; 2) The applicability of transmission Protection System; and, 3) The differences in the Regional Entity definitions of Bulk Electric System (BES) and that the use of the phrase “specific clarification may be required” created ambiguity within the interpretation. The drafting team has modified the interpretation to address these concerns and has provided responses to the comments received.

With regards to the concern that the interpretation was trying to define a new term “transmission Protection System,” the drafting team explained that this particular request was for an “interpretation of the specific phrase “transmission Protection System,” which is used in these standards, and that the response is meant only to clarify the use of this term in the context of these standards and does not propose a new defined term.

Another concern raised was with the applicability of the phrase “transmission Protection System.” The drafting team explained that this interpretation applies to all situations where the Protection System in question is designed to detect and initiate isolation of system faults on transmission elements identified as being included in the BES. To provide further clarity, the drafting team has modified the phrase “The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)” to now read “The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.” The drafting team explained that 1) if circumstances exist that are not covered by this interpretation, the NERC *Reliability Standards Development Procedure* allows entities to request interpretations to address this need and 2) it would be inappropriate to reject an interpretation of a standard because it may lead to further interpretation requests.

The final concern deals with the differing definitions of the BES within the Region Entities. The drafting team explained that under the present standards process, the definition of the BES is assigned to the Regional Entities, each of which has provided a definition of BES to both the industry and NERC. Resolving these differences is beyond the scope of this project. The drafting team further explained that the use of the phrase “specific clarification may be required” was meant to identify that there are differences among the Regional Entities in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition. To provide further clarity, the drafting team modified the phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” to now read “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”

If you feel that the drafting team overlooked your comments, please let us know immediately. Our goal is to give every comment serious consideration in this process. If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Gerry Adamski, at 609-452-8060 or at [gerry.adamski@nerc.net](mailto:gerry.adamski@nerc.net). In addition, there is a NERC Reliability Standards Appeals Process.<sup>1</sup>

<sup>1</sup> The appeals process is in the Reliability Standards Development Procedure: [http://www.nerc.com/files/RSDP\\_V6\\_1\\_12Mar07.pdf](http://www.nerc.com/files/RSDP_V6_1_12Mar07.pdf).

Voter	Entity	Segment	Vote	Comment
Kim Warren	Independent Electricity System Operator	2	Negative	<p>(1) The interpretation appears to “define” transmission Protection System, but in accordance with the Reliability Standards Development Procedure, an interpretation is not the appropriate process for defining a NERC term.</p> <p>(2) This interpretation appears to be applicable to a particular circumstance of a protection system. It is quite likely that this action will generate numerous other interpretation requests for variations of this system configuration and protection designs. We therefore believe that a more generally applicable solution is required.</p> <p>(3) In general, non-BES Protection Systems that do not initiate BES equipment action, or have any effect on the BES, should not be considered part of a transmission Protection System. However, the classification of non-BES Protection Systems that are designed to protect the BES against uncleared faults on non-BES elements that could be impactful on the BES, needs to be clarified.</p> <p>Finally, in the phrase “...designed to detect and initiate action for...” the interpretation seems to blur the distinction between a transmission protection system and a Special Protection System.</p>

**Response:** This particular request was for an interpretation of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.

The interpretation applies to all situations where the Protection System in question “is designed to detect and initiate isolation of system faults on transmission elements identified as being included in the Bulk Electric System (BES).” If other circumstances exist that are not covered by this interpretation, the NERC Reliability Standards Development Procedure allows entities to request interpretations to address this need. It would be inappropriate to reject an interpretation of a standard because it may lead to further requests for interpretation.

If the question is “whether it is possible to have “transmission Protection Systems that are electrically/physically located on or in non-BES facilities,” the answer is yes. For example, the relays connected on the low side of a tapped substation (that is not defined as part of the BES) designed serve as transmission line protection due to system configuration would be considered “transmission Protection Systems.”

The phrase “The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)” has been replaced with “The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.”

Voter	Entity	Segment	Vote	Comment
Michael Schiavone	Niagara Mohawk (National Grid Company)	3	Negative	<p>The interpretation appears to “define” transmission Protection System, but in accordance with the Reliability Standards Development Procedure, an interpretation is not the appropriate process for defining a NERC term. *</p> <p>This interpretation appears to be applicable to a particular circumstance of a protection system. It is quite likely that this action will generate numerous other interpretation requests for variations of this system configuration and protection designs.</p> <p>* Finally, in the phrase “...designed to detect and initiate action for...” the interpretation seems to blur the distinction between a transmission protection system and a Special Protection System. In general, non-BES equipment that does not initiate BES equipment action, or has any effect on the BES should not be considered part of a transmission Protection System</p>

**Response:** This particular request was for an interpretation of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.

The interpretation applies to all situations where the Protection System in question “is designed to detect and initiate isolation of system faults on transmission elements identified as being included in the Bulk Electric System (BES).” If other circumstances exist that are not covered by this interpretation, the NERC Reliability Standards Development Procedure allows entities to request interpretations to address this need. It would be inappropriate to reject an interpretation of a standard because it may lead to further requests for interpretation.

If the question is “whether it is possible to have ‘transmission Protection Systems that are electrically/physically located on or in non-BES facilities,” the answer is yes. For example, the relays connected on the low side of a tapped substation (that is not defined as part of the BES) designed serve as transmission line protection due to system configuration would be considered “transmission Protection Systems.”

The phrase “The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)” has been replaced with “The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.”

Voter	Entity	Segment	Vote	Comment
Kathleen Goodman	ISO New England, Inc.	2	Negative	<p>1. The interpretation appears to “define” transmission Protection System but in accordance with the Reliability Standards Development Procedure, an interpretation is not the appropriate process for defining a NERC term.</p> <p>2. This interpretation appears to be applicable to a particular circumstance of a protection system. It is quite likely that this action will generate numerous other interpretation requests for variations other system configuration and protection designs. 3. In general, passive non-BES equipment should not be considered part of a transmission Protection System.</p> <p>Finally, in the phrase “...designed to detect and initiate action for...” the interpretation seems to blur the distinction between a transmission protection system and a Special Protection System.</p>

**Response:** This particular request was for an interpretation of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.

The interpretation applies to all situations where the Protection System in question “is designed to detect and initiate isolation of system faults on transmission elements identified as being included in the Bulk Electric System (BES).” If other circumstances exist that are not covered by this interpretation, the NERC Reliability Standards Development Procedure allows entities to request interpretations to address this need. It would be inappropriate to reject an interpretation of a standard because it may lead to further requests for interpretation.

If the question is “whether it is possible to have ‘transmission Protection Systems that are electrically/physically located on or in non-BES facilities,” the answer is yes. For example, the relays connected on the low side of a tapped substation (that is not defined as part of the BES) designed serve as transmission line protection due to system configuration would be considered “transmission Protection Systems.”

The phrase “The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)” has been replaced with “The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.”

Voter	Entity	Segment	Vote	Comment
Terry L. Blackwell	Santee Cooper	1	Negative	<p>1. There is no mention of a minimum size of the potential source. Concerning a generator, this should be limited at least to the same size that makes it reportable as generation and subject to the generation protection system requirements.</p> <p>2. The mention of “networked low side system” seems beyond the scope of the standards. This could potentially extend the transmission bulk electric system protective elements down to the 230/69 and 115/69 kV transformers, as well as any of the 69 kV lines whose relay elements could possibly extend onto the high side of the transformers as backup protection.</p>
Zack Dusenbury		3		
Suzanne Ritter		6		
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.</p> <p>The reference to “networked low side system” in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a “transmission Protection System,” regardless of the voltage of the network voltage.</p>				
Steve Alexanderson	Central Lincoln PUD	3	Negative	<p>Central Lincoln votes no on this interpretation. Our compliments on the straight forward and concise treatment of the matter. While some entities may ask for a more prescriptive approach in dealing with the question of what size generation or network constitutes a “potential source”, Central Lincoln believes there is no reason for any more specificity. The controlling part of the interpreters’ statement deals with the purpose of the installed protection system in question. If the installation was not designed for transmission faults, there is no reason to look at potential source sizes. If the protection was designed for transmission faults, then the designers clearly considered the potential source sizable enough to matter. If a more prescriptive approach is really needed for reliability, this should be handled by the SAR rather than the Interpretation Request process; since it would require changing these standards, or the addition a new one. We also understand that some entities may object to the interpreters’ introduction of a “new” definition of “transmission protection system.” Central Lincoln would like to point out that both “transmission” and “protection system” are already in the NERC glossary, and that the interpreters’ use of the combination is consistent with the individual definitions.</p>

Voter	Entity	Segment	Vote	Comment
				<p>The reason for the no vote is that Central Lincoln joins other entities in its concern over the last sentence: "It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity." Central Lincoln is supportive of the intent, which re-iterates the Regional Entity's right to define the BES; but the verbiage presently gives the Regional Entity room to reject or modify the interpretation through "specific clarifications" in regard to the interpretation. This last sentence defeats the intent of the interpretation request from Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc. to clear up the differences between Regional Entities, by continuing to allow conflicting "specific clarifications" such as the ones from RFC and WECC that were referenced in the request. Central Lincoln would prefer verbiage that resembles the following:</p> <p>It should also be noted that the appropriate Regional Entity definition of the BES be considered in deciding whether certain aspects of transformer protection should be designated as a transmission Protection System.</p>
<p><b>Response:</b> The phrase "specific clarification may be required" is meant to identify that there are differences among Regional Entities in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES within a given Regional Entity, the protection schemes installed to detect faults on a radial line are not considered "transmission Protection Systems." However, they would be considered as such within a Regional Entity that includes radial lines in its BES definition. The phrase "It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity" has been replaced with "It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity."</p>				
Russell A Noble	Cowlitz County PUD	3	Negative	<p>Cowlitz votes negative with reluctance, but must take exception with the last sentence of the interpretation. This sentence gives room for the Regional Entity to reject or modify the interpretation by implying the Regional Entity may give "specific clarification" in regard to the interpretation. This last sentence defeats the intent of the interpretation request from Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc. to clear up the differences between Regional Entities. Cowlitz would prefer verbiage that resembles the following: It should also be noted that the appropriate Regional Entity definition of the BES be considered in deciding whether certain aspects of transformer protection should be</p>

Voter	Entity	Segment	Vote	Comment
				designated as a transmission Protection System.
<p><b>Response:</b> The phrase “specific clarification may be required” is meant to identify that there are differences among Regional Entities in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES within a given Regional Entity, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such within a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
John C. Collins	Platte River Power Authority	1	Negative	Clarity is needed to draw the lines of demarcation on “transmission Protection Systems.” However, the interpretation raises more questions.
<p><b>Response:</b> The interpretation applies to all situations where the Protection System in question is designed to detect and initiate isolation of system faults on transmission elements identified as being included in the BES. The phrase “The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)” has been replaced with “The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.”</p> <p>The drafting team would require more specifics related to what other questions are raised.</p>				
Jalal (John) Babik	Dominion Resources, Inc.	3	Negative	<p>Dominion believes the term ‘transmission Protection System’ is applicable to any Protection System that is designed to detect and initiate action for faults on transmission elements (lines, transformers, breakers, etc.) identified as being included in the BES. While we understand that the request for interpretation specifically addressed transformer protection on radial transmission lines, we do not believe that such a narrow interpretation is in the best interests of the industry and would have preferred this to be dealt with more broadly if it is going to be addressed in an interpretation. We believe that the interpretation should state that each Protection System is designed specifically for the elements it protects and each has a somewhat unique design and in some cases there may be justifiable regional differences.</p> <p>The Stakeholders are looking at these interpretations closely and if they are going to be implemented, they have to answer more questions than</p>
Mike Garton		5		
Louis S Slade		6		



Voter	Entity	Segment	Vote	Comment
				<p>they themselves might produce. Dominion suggests the following language:</p> <p>If a transformer's Protection System is designed to trip transmission elements other than the transformer high side isolating device to clear a fault, then that transformer has a direct impact on the associated transmission element. If, on the other hand, the transformer's Protection System is designed so as NOT to trip the associated transmission elements other than the transformer high side isolating device to clear the fault, then that transformer does not have a direct impact on that transmission element (other than loss load).</p> <p>We further suggest that the first assessment an entity needs to perform is to determine whether or not a Protection System has a direct impact on the associated transmission element.</p> <ul style="list-style-type: none"> <li>o If the assessment is that it does not, then the cited standard(s) and requirement(s) DO NOT apply.</li> <li>o If the assessment is that it does, then the entity needs to review regional criteria to determine if the impacted transmission element is designated by the region as being part of the BES.</li> <li>o If it is not, then the cited standard(s) and requirement(s) DO NOT apply.</li> <li>o However, if the impacted transmission element is designated by the region as being part of the BES, then the cited standard(s) and requirement(s) DO apply</li> </ul> <p>It is the entity's responsibility to ensure that the Protection Systems on the BES elements are reviewed and analyzed for misoperations. Since there will be regional differences interpreting the applicability of a System Protection on a radial line, we recommend that if an entity is not able to analyze the status of a radial line to contact the RRO to clarify the applicability regarding Protection Systems on the BES. (See RFC BES Definition FAQ and Interpretation)  <a href="http://www.rfirst.org/MiscForms/BESDefinition.aspx">http://www.rfirst.org/MiscForms/BESDefinition.aspx</a></p>

Voter	Entity	Segment	Vote	Comment
<p><b>Response:</b> Based on your comments, the drafting team has made the following changes:</p> <p>The phrase “The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)” has been replaced with “The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.”</p> <p>The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
Henry Ernst-Jr	Duke Energy Carolina	3	Negative	<p>Duke Energy votes “Negative” on this Interpretation because we believe it goes beyond the accepted role of an interpretation, and changes the requirements of PRC-004 and PRC-005 by introducing a definition of “transmission Protection System” which is in conflict with RFC’s Bulk Electric System Definition and RFC’s procedures for analyzing misoperations and implementing Corrective Action Plans. The definition introduced for “transmission Protection System” in the Interpretation is not consistent with RFC. The definition begins by stating that the term is applicable to “any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System.” Then a general exemption is given for radially connected transformer protection systems. The definition clarifies that its scope does include those transformers with low side “connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission system faults,...”. RFC’s “Clarification to the BES definition” does not include protective relays for these potential sources or network systems if they do not automatically trip a BES facility. Duke Energy believes that the definition of “transmission Protection System” and any changes to the requirements of PRC-004 and PRC-005 should be pursued via a SAR to revise the standards.</p>
<p><b>Response:</b> This particular request was for an ‘interpretation’ of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p>				

Voter	Entity	Segment	Vote	Comment
David A. Lapinski  David Frank Roth	Consumers Energy	3  4	Negative	Even though this interpretation seems reasonable from an engineering perspective, there seems to be a (perhaps unintended) expansion of the applicability of these NERC Standards to Protection Systems well outside the BES as defined within NERC and within the RFC. Such an expansion, if it is to happen, should be via a full standards development activity, not through an interpretation.
<p><b>Response:</b> The drafting team believes this interpretation does not expand the applicability of the cited standards. The interpretation only clarifies that in the context of these standards the phrase “transmission Protection System” applies to Protection Systems that are installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources.</p>				
Ajay Garg  Michael D. Penstone	Hydro One Networks, Inc.	1  3	Negative	<p>Hydro One Networks Inc. casts a negative vote with the following comments:</p> <ol style="list-style-type: none"> <li>1. The interpretation goes beyond being a mere clarification of the requirements. It changes the requirements of PRC-004 and PRC-005 by introducing a definition of “transmission Protection System. In accordance with the Reliability Standards Development Procedure, definitions and any changes to the requirements of PRC-004 and PRC-005 should be pursued via a SAR to revise the standards</li> <li>2. This interpretation appears to be applicable to a particular circumstance of a protection system. It is quite likely that, if this interpretation is adopted, will generate numerous other interpretation requests for variations of this system configuration and protection designs.</li> <li>3. In the phrase “...designed to detect and initiate action for...” the interpretation seems to blur the distinction between a transmission Protection System and a Special Protection System. In general, non-BES equipment that does not initiate BES equipment action, or has any effect on the BES should not be considered part of a transmission Protection System.</li> </ol>
<p><b>Response:</b> This particular request was for an interpretation of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p> <p>The interpretation applies to all situations where the Protection System in question “is designed to detect and initiate isolation of system faults on transmission elements identified as being included in the Bulk Electric System (BES).” If other circumstances exist that are not covered by this interpretation,</p>				

Voter	Entity	Segment	Vote	Comment
<p>the NERC Reliability Standards Development Procedure allows entities to request interpretations to address this need. It would be inappropriate to reject an interpretation of a standard because it may lead to further requests for interpretation.</p> <p>The phrase “The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)” has been replaced with “The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.”</p>				
Richard Salgo	Sierra Pacific Power Co.	1	Negative	I agree with the general concept of the interpretation. Such radial facilities ought not to be considered applicable to the requirements of the subject standards. However, the interpretation indicates that a radial transmission line feeding a distribution substation could be considered BES if the distribution station acted as the collector for small and insignificant amounts of generation (perhaps even an emergency generator at a customer premise). Clearly, there must be a threshold of significance above which there is an impact upon the otherwise radial line.
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.</p>				
Edward C Stein	Edward C Stein	8	Negative	I am voting no because a failure to trip of the low side distribution breakers will require that the high side breaker trips. Failure to do so may cause the BES breakers supplying the substation in question to trip.
<p><b>Response:</b> The drafting team concurs with this statement if the Regional Entity has included these facilities in its definition of the BES; however, they should not be included if the Regional Entity’s definition does not include these facilities.</p>				
Terry Harbour	MidAmerican Energy Co.	1	Negative	MidAmerican believes the interpretation goes beyond the role of an interpretation and that the defition of a Transmission Protection System should be considered using the SAR process.
<p><b>Response:</b> This particular request was for an interpretation of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p>				

Voter	Entity	Segment	Vote	Comment
Bud Tracy	Blachly-Lane Electric Co-op	3	Negative	<p>Blachly-Lane Electric Cooperative votes no on this ballot for the following reasons:</p> <p>1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC's generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.)</p> <p>2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus.</p> <p>3) In addition, we also believe that the term "the networked low side system" is too general. We believe that the following should be excluded from being considered as transmission Protection Systems:</p> <ul style="list-style-type: none"> <li>a) Networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and</li> <li>b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide 'meaningful' flow-through capability.</li> </ul> <p>4) The third paragraph, which re-iterates the Regional Entity's (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>

Voter	Entity	Segment	Vote	Comment
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.</p> <p>If the Protection System of the transformer’s primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to “networked low side system” in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a “transmission Protection System,” regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Dave Markham	Central Electric Cooperative, Inc. (Redmond, Oregon)	3	Negative	<p>Central Electric Cooperative votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC’s generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term “the networked low side system” is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak</p>

Voter	Entity	Segment	Vote	Comment
				<p>Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide 'meaningful' flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity's (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a "transmission Protection System," regardless of the size of the generation sources that created the need.</p> <p>If the Protection System of the transformer's primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to "networked low side system" in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a "transmission Protection System," regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Dave Hagen	Clearwater Power Co.	3	Negative	<p>Clearwater Power Company votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC's generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of</p>

Voter	Entity	Segment	Vote	Comment
				<p>clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term “the networked low side system” is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide ‘meaningful’ flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity’s (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.</p> <p>If the Protection System of the transformer’s primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to “networked low side system” in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a “transmission Protection System,” regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Roman Gillen	Consumers Power Inc.	3	Negative	<p>Consumers Power, Inc votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system</p>



Voter	Entity	Segment	Vote	Comment
				<p>that connects a generator that meets NERC's generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term "the networked low side system" is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide 'meaningful' flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity's (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a "transmission Protection System," regardless of the size of the generation sources that created the need.</p> <p>If the Protection System of the transformer's primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to "networked low side system" in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a "transmission Protection System," regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				

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Roger Meader	Coos-Curry Electric Cooperative, Inc	3	Negative	<p>Coos-Curry Electric Cooperative votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC's generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term "the networked low side system" is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide 'meaningful' flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity's (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>

**Response:** The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a "transmission Protection System," regardless of the size of the generation sources that created the need.

If the Protection System of the transformer's primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating

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<p>action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to “networked low side system” in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a “transmission Protection System,” regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Dave Sabala	Douglas Electric Cooperative	3	Negative	<p>Douglas Electric Cooperative votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC’s generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term “the networked low side system” is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide ‘meaningful’ flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity’s (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>

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<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.</p> <p>If the Protection System of the transformer’s primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to “networked low side system” in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a “transmission Protection System,” regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Bryan Case	Fall River Rural Electric Cooperative	3	Negative	<p>Fall River Rural Electric Cooperative votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC’s generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term “the networked low side system” is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary</p>

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<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a "transmission Protection System," regardless of the size of the generation sources that created the need.</p> <p>If the Protection System of the transformer's primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to "networked low side system" in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a "transmission Protection System," regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Michael Henry	Lincoln Electric Cooperative, Inc.	3	Negative	Lincoln Electric Cooperative votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC's generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of

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				<p>clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term “the networked low side system” is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide ‘meaningful’ flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity’s (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>

**Response:** The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.

If the Protection System of the transformer’s primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.

The reference to “networked low side system” in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a “transmission Protection System,” regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).

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Rick Crinklaw	Lane Electric Cooperative, Inc.	3	Negative	<p>Lane Electric Cooperative, Inc. votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC's generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term "the networked low side system" is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide 'meaningful' flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity's (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>

**Response:** The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a "transmission Protection System," regardless of the size of the generation sources that created the need.

If the Protection System of the transformer's primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating

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<p>action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to “networked low side system” in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a “transmission Protection System,” regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Richard Reynolds	Lost River Electric Cooperative	3	Negative	<p>Lost River Electric Cooperative votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC’s generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term “the networked low side system” is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide ‘meaningful’ flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity’s (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>



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<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.</p> <p>If the Protection System of the transformer’s primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to “networked low side system” in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a “transmission Protection System,” regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Jon Shelby	Northern Lights Inc.	3	Negative	<p>Northern Lights, Inc. votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC’s generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term “the networked low side system” is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at</p>

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<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a "transmission Protection System," regardless of the size of the generation sources that created the need.</p> <p>If the Protection System of the transformer's primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to "networked low side system" in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a "transmission Protection System," regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Ray Ellis	Okanogan County Electric Cooperative, Inc.	3	Negative	<p>Okanogan County Electric Cooperative votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC's generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the</p>

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				<p>transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term “the networked low side system” is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide ‘meaningful’ flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity’s (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.</p> <p>If the Protection System of the transformer’s primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to “networked low side system” in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a “transmission Protection System,” regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Aleka K Scott	Pacific Northwest Generating Cooperative	4	Negative	<p>PNGC Power votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC’s generator registration criteria</p>

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				<p>for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term “the networked low side system” is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide ‘meaningful’ flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity’s (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.</p> <p>If the Protection System of the transformer’s primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to “networked low side system” in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a “transmission Protection System,” regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Heber Carpenter	Raft River Rural Electric Cooperative	3	Negative	Raft River Rural Electric Cooperative votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system)

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				<p>and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC's generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term "the networked low side system" is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide 'meaningful' flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity's (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>

**Response:** The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a "transmission Protection System," regardless of the size of the generation sources that created the need.

If the Protection System of the transformer's primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.

The reference to "networked low side system" in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a "transmission Protection System," regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not

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mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).				
Ken Dizes	Salmon River Electric Cooperative	3	Negative	<p>Salmon River Electric Cooperative votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC's generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term "the networked low side system" is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide 'meaningful' flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity's (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a "transmission Protection System," regardless of the size of the generation sources that created the need.</p>				

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<p>If the Protection System of the transformer's primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to "networked low side system" in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a "transmission Protection System," regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Steve Eldrige	Umatilla Electric Cooperative	3	Negative	<p>Umatilla Electric Cooperative votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC's generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term "the networked low side system" is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide 'meaningful' flow-through capability. 4) The third paragraph, which re-iterates the Regional</p>

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				Entity's (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.</p> <p>If the Protection System of the transformer’s primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to “networked low side system” in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a “transmission Protection System,” regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Marc Farmer	West Oregon Electric Cooperative, Inc.	3	Negative	West Oregon Electric Cooperative, Inc. votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC’s generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term “the networked low side system” is too general. We believe that the following



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				<p>should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide 'meaningful' flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity's (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a "transmission Protection System," regardless of the size of the generation sources that created the need.</p> <p>If the Protection System of the transformer's primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to "networked low side system" in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a "transmission Protection System," regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Gregory L. Pieper	Xcel Energy, Inc.	1	Negative	Please refer to Xcel Energy's segment 3 comments.
<p><b>Response:</b> There is no Xcel Energy Segment 3 comment.</p>				
Terry L Baker	Platte River Power Authority	3	Negative	PRPA does not believe the interpretation provides clarity, or consistency within the regions. Networked low side system needs to be defined.
<p><b>Response:</b> The term "networked low side system" in this case does not refer to any specific voltage level. It is used to identify location where the low side of the transformer has a normally closed system configuration to another system source. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				

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Catherine Koch	Puget Sound Energy, Inc.	1	Negative	PSE generally supports the response to the question however the last sentence creates confusion as to what "variance in the Regional Entity definitions of the BES" means. Please clarify the response to describe if the Regional Entity definition of the BES must be formally approved by FERC or NERC or whether it can be made defined informally. The ability for a Registered Entity to know how NERC's response to this question can vary needs to be clear and transparent. PSE understands that at this point since WECC does not have a FERC approved definition of the BES different from NERC, PSE assumes there is no regional variation to what NERC's response is as provided. Please confirm that PSE is interpreting the last sentence of NERC's response correctly as it applies to the WECC region.
<p><b>Response:</b> The phrase “specific clarification may be required” is meant to identify that there are differences among Region Entities in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES within a given Regional Entity, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” But they would be considered as such within a Regional Entity that includes radial lines in its BES definition.</p> <p>Under present standards, the definition of the BES is assigned to the Regional Entity. Each Region has a definition of the BES and has provided that definition to NERC.</p> <p>The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
William SeDoris	Northern Indiana Public Service Co.	3	Negative	The final sentence in the interpretation appears to be a disclaimer that needs to be addressed. Variance in Regional Entity definitions of the BES should be eliminated by NERC especially since there are entities that span multiple regions
Joseph O'Brien		6		
<p><b>Response:</b> The Drafting Team acknowledges this fact and acknowledges that there are differences in the Regional Entity definitions of the BES; however, under present standards, the definition of the BES is assigned to the Regional Entity. Each Region has a definition of the BES and has provided that definition to NERC. The phrase “specific clarification may be required” is meant to identify that there are differences among Regional Entities in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a given Region, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of</p>				

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the regional definition, if needed, should be directed to the appropriate Regional Entity.”				
Fred E. Young	Northern California Power Agency	4	Negative	The interpretation leaves the door open for the Regional Entities to make the determination. This provides additional ambiguity and uncertainty.
<p><b>Response:</b> The Drafting Team acknowledges this fact and acknowledges that there are differences in the Regional Entity definitions of the BES; however, under present standards, the definition of the BES is assigned to the Regional Entity. Each Regional Entity has a definition of the BES and has provided that definition to NERC. The phrase “specific clarification may be required” is meant to identify that there are differences among Regions in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a given Region, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
Daniel Duff	Liberty Electric Power LLC	5	Negative	The interpretation leaves the question unresolved. The phrase "specific clarification may be required from the appropriate RC" negates the guidance in paragraph 2, and leaves the requesting entities without a resolution of the question.
<p><b>Response:</b> The Drafting Team acknowledges this fact and acknowledges that there are differences in the Regional Entity definitions of the BES; however, under the present standards process, the definition of the BES is assigned to the Regional Entity. Each Regional Entity has a definition of the BES and has provided that definition to NERC. The phrase “specific clarification may be required” is meant to identify that there are differences among Regions in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a given Region, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
Gordon Pietsch	Great River Energy	1	Negative	The last sentence of the interpretation removes the clarity that the first two paragraphs has created.
Sam Kokkinen		3		

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Cynthia E Sulzer  Donna Stephenson		5  6		
<p><b>Response:</b> The Drafting Team acknowledges this fact and acknowledges that there are differences in the Regional Entity definitions of the BES; however, under the present standards process, the definition of the BES is assigned to the Regional Entity. Each Regional Entity has a definition of the BES and has provided that definition to NERC. The phrase “specific clarification may be required” is meant to identify that there are differences among Regions in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a given Region, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
Robert Kondziolka  John T Underhill  Glen Reeves  Mike Hummel	Salt River Project	1  3  5  6	Negative	SRP believes that the protective relays (Differential and Overcurrent) for transformers tapped off a Bulk Electric System line should be included under PRC-005 and PRC-004. In reality, the line relaying will not be able to discern a difference between a fault on the line and a fault on the high voltage winding of the transformer. Therefore, a transformer fault can and will cause the line from which it is tapped to trip. The relays protecting the transformer are just as important as the relays protecting the BES facility.
<p><b>Response:</b> The subject Protection Systems are covered by this interpretation only if the transformers noted are included in the scope of the Regional Entity definition of the BES. The drafting team believes the commenter’s recommendation would modify the applicability of the standard.</p>				

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Henry G. Masti	New York State Electric & Gas Corp.	1	Negative	<p>The interpretation appears to “define” transmission Protection System, but in accordance with the Reliability Standards Development Procedure, an interpretation is not the appropriate process for defining a NERC term.</p> <p>* This interpretation appears to be applicable to a particular circumstance of a protection system. It is quite likely that this action will generate numerous other interpretation requests for variations of this system configuration and protection designs.</p> <p>* Finally, in the phrase “...designed to detect and initiate action for...” the interpretation seems to blur the distinction between a transmission protection system and a Special Protection System. In general, non-BES equipment that does not initiate BES equipment action, or has any effect on the BES should not be considered part of a transmission Protection System</p>
<p><b>Response:</b> This particular request was for an interpretation of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p> <p>The interpretation applies to all situations where the Protection System in question “is designed to detect and initiate action for system faults on transmission elements identified as being included in the BES.” If other circumstances exist that are not covered by this interpretation, the NERC Reliability Standards Development Procedure allows entities to request interpretations to address this need. It would be inappropriate to reject an interpretation of a standard because it may lead to further requests for interpretation.</p> <p>The phrase “The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)” has been replaced with “The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.”</p>				
Peter T Yost	Consolidated Edison Co. of New York	3	Negative	<p>The interpretation appears to “define” transmission Protection System, but in accordance with the Reliability Standards Development Procedure, an interpretation is not the appropriate process for defining a NERC term. *</p> <p>This interpretation appears to be applicable to a particular circumstance of a protection system. It is quite likely that this action will generate numerous other interpretation requests for variations of this system configuration and protection designs. *</p> <p>Finally, in the phrase “...designed to detect and initiate action for...” the interpretation seems to blur the distinction between a transmission protection system and a Special Protection System. In</p>

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<p><b>Response:</b> This particular request was for an interpretation of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p> <p>The interpretation applies to all situations where the Protection System in question “is designed to detect and initiate action for system faults on transmission elements identified as being included in the BES.” If other circumstances exist that are not covered by this interpretation, the NERC Reliability Standards Development Procedure allows entities to request interpretations to address this need. It would be inappropriate to reject an interpretation of a standard because it may lead to further requests for interpretation.</p> <p>The phrase “The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)” has been replaced with “The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.”</p>				
<p>Christopher L de Graffenried</p>	<p>Consolidated Edison Co. of New York</p>	<p>1</p>	<p>Negative</p>	<p>The NPCC Regional Standards Committee (RSC) has conducted an extensive review of the interpretation. The RSC has reached a consensus and is recommending a vote to "reject" the interpretation with the following comments. * The interpretation appears to “define” transmission Protection System, but in accordance with the Reliability Standards Development Procedure, an interpretation is not the appropriate process for defining a NERC term. * This interpretation appears to be applicable to a particular circumstance of a protection system. It is quite likely that this action will generate numerous other interpretation requests for variations of this system configuration and protection designs. * Finally, in the phrase “...designed to detect and initiate action for...” the interpretation seems to blur the distinction between a transmission protection system and a Special Protection System. In general, non-BES equipment that does not initiate BES equipment action, or has any effect on the BES should not be considered part of a transmission Protection System.</p>
<p><b>Response:</b> This particular request was for an interpretation of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p> <p>The interpretation applies to all situations where the Protection System in question “is designed to detect and initiate action for system faults on transmission elements identified as being included in the BES.” If other circumstances exist that are not covered by this interpretation, the NERC Reliability Standards</p>				

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<p>Development Procedure allows entities to request interpretations to address this need. It would be inappropriate to reject an interpretation of a standard because it may lead to further requests for interpretation.</p> <p>The phrase “The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)” has been replaced with “The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.”</p>				
Diane J. Barney	National Association of Regulatory Utility Commissioners	9	Negative	The interpretation appears to offer a definition for "transmission Protection System" which can only take place through the SAR process.
<p><b>Response:</b> This particular request was for an ‘interpretation’ of the specific phrase “transmission Protection System”, which is used in these Standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p>				
Donald E. Nelson	Commonwealth of Massachusetts Department of Public Utilities	9	Negative	The interpretation appears to offer a definition for "Transmission Protection System" which can only take place through the SAR process.
<p><b>Response:</b> This particular request was for an interpretation of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p>				
Larry E Watt	Lakeland Electric	1	Negative	This standard update seems to change the definitino of a protection system. If this is the intent - then this process needs to begin with a SAR.
<p><b>Response:</b> This particular request was for an interpretation of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p>				
Karl Bryan	U.S. Army Corps of Engineers Northwestern Division	5	Negative	The interpretation did not address the disparity between the 2 Regional Entities examples given.
<p><b>Response:</b> The Drafting Team acknowledges this fact and acknowledges that there are differences in the Regional Entity definitions of the BES; however, under the present standards process, the definition of the BES is assigned to the Regional Entity. Each Regional Entity has a definition of the BES and has</p>				

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<p>provided that definition to NERC.</p> <p>The phrase “specific clarification may be required” is meant to identify that there are differences among Regions in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a given Region, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
<p>Michael Gammon</p> <p>Charles Locke</p> <p>Thomas Saitta</p>	<p>Kansas City Power &amp; Light Co.</p>	<p>1</p> <p>3</p> <p>6</p>	<p>Negative</p>	<p>The interpretation offered here does not substantially provide a clarification of what constitutes equipment that falls inside the BES and the PRC-004 and PRC-005 requirements. There are many different types of transmission configurations involving radial transformers with load and generation which makes this interpretation an extremely difficult challenge to fully express and clarify.</p>
<p><b>Response:</b> The interpretation applies to all situations where the Protection System in question is designed to detect and initiate isolation of system faults on transmission elements identified as being included in the BES. The phrase “The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)” has been replaced with “The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.”</p>				
<p>Scott Heidtbrink</p>	<p>Kansas City Power &amp; Light Co.</p>	<p>5</p>	<p>Negative</p>	<p>Not a good enough clarification of what constitutes equipment that falls inside the BES and the PRC-004 and PRC-005 requirements.</p>
<p><b>Response:</b> The interpretation applies to all situations where the Protection System in question is designed to detect and initiate isolation of system faults on transmission elements identified as being included in the BES. The phrase “The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)” has been replaced with “The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.”</p>				
<p>James Tucker</p>	<p>Deseret Power</p>	<p>1</p>	<p>Negative</p>	<p>The notion that if there is any source on the radial system makes it a protection system is a problem for me.</p>



Voter	Entity	Segment	Vote	Comment
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.</p>				
Denise Roeder	North Carolina Municipal Power Agency #1	3	Negative	<p>The original Request for Clarification gave opposing illustrations of how radially-connected transformer protection systems have been viewed by different regions. The first paragraph of the response seems clear that the relevant systems are only those identified as part of the BES. However, the second paragraph that addresses radially-connected transformer protection systems, by not mentioning the BES specifically, still leaves it unclear whether there could be inconsistencies in the application of these standards when left to specific clarification by the Regional Entities. It would have been better if the second paragraph also included the term "BES" when discussing the circumstances of a radial connection that would be included. The response should have said the standards are applicable for systems installed to detect and initiate actions for "BES" transmission system faults.</p>
<p><b>Response:</b> The phrase “specific clarification may be required” is meant to identify that there are differences among Regions in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a given Region, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p> <p>The first paragraph of the interpretation states “any Protection Systems that is designed.... on transmission elements... included in the BES.” It does not say that these Protection Systems are “identified as being on the BES.”</p> <p>The drafting team acknowledges that the differences in the Regional Entity definitions of the BES can result in different applicability of the standards being addressed in this interpretation. This interpretation is limited to the phrase “transmission Protection System.” Resolving differences in Regional Entity definitions of the BES is beyond the scope of this project.</p>				

Voter	Entity	Segment	Vote	Comment
James B Lewis	Consumers Energy	5	Negative	The paragraph in the interpretation beginning with "In general, a radially..." is overly broad. The simple act of connecting a 5 kw wind turbine or similar sized low head hydro unit (an infinitesimal potential source) to "the transformer low side" should not create a part of a transmission Protection System. I believe this could be addressed by setting a size requirement for the potential source such as a size which required listing on the compliance registry.
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a "transmission Protection System," regardless of the size of the generation sources that created the need.</p>				
Jeff Knottek	City Utilities of Springfield, Missouri	1	Negative	The second paragraph of the interpretation only adds more confusion to the issue. The first paragraph defined which protection systems apply. "In general" leads us to wonder what are the exceptions? Is this going to require another interpretation? Unless every possible scenario is addressed, there will be questions. This paragraph should be deleted. Also, there needs to be consistency amongst regions for what the BES is.
<p><b>Response:</b> The interpretation applies to all situations where the Protection System in question "is designed to detect and initiate isolation of system faults on transmission elements identified as being included in the Bulk Electric System (BES)." If other circumstances exist that are not covered by this interpretation, the NERC Reliability Standards Development Procedure allows entities to request interpretations to address this need. It would be inappropriate to reject an interpretation of a standard because it may lead to further requests for interpretation. The phrase "The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)" has been replaced with "The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources."</p>				
Brad Chase	Orlando Utilities Commission	1	Negative	This Interpretation goes beyond the accepted role of an interpretation, and changes the requirements of PRC-004 and PRC-005 by introducing a definition of "transmission Protection System" which is in conflict with RFC's Bulk Electric System Definition and RFC's procedures for analyzing misoperations and implementing Corrective Action Plans.
<p><b>Response:</b> This particular request was for an interpretation of the specific phrase "transmission Protection System," which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p>				

Voter	Entity	Segment	Vote	Comment
Liam Noailles	Northern States Power Co.	5	Negative	We are supportive of the interpretation describing how a radially connected transformer protection system is treated. However the language regarding a “potential source” introduces further confusion. We believe that if language regarding potential sources is to be included in the interpretation then it should be clarified so as to not require additional interpretation.
<p><b>Response:</b> The reference to “networked low side system” in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the protection system would qualify as a “transmission Protection System,” regardless of the voltage of the network voltage.</p>				
David F. Lemmons	Xcel Energy, Inc.	6	Negative	We are supportive of the interpretation describing how a radially connected transformer protection system is treated. However the language regarding a “potential source” introduces further confusion. We believe that if language regarding potential sources is to be included in the interpretation then it should be clarified so as to not require additional interpretation.
<p><b>Response:</b> The term “networked low side system” in this case does not refer to any specific voltage level. It is used to identify location where the low side of the transformer has a normally closed system configuration to another system source. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Louise McCarren	Western Electricity Coordinating Council	10	Negative	<p>We would consider the protection system for a transformer with a High Side Voltage greater than 100Kv, connected to a transmission line at greater than 100KV by a tap as a BES protection system if:</p> <ol style="list-style-type: none"> <li>1) the transformer tap connection had two power supplies. Or</li> <li>2) the transformer protection system had direct communication with another BES relay or protection system such as a transfer trip.</li> </ol> <p>The current definition of BES specifies that a radial transmission line serving only load is not considered as BES IF there is only a single power source. WECC considers these tapped connections as having two power sources. We also believe these transformer protection systems for this configuration should be considered as BES protection systems and subject to PRC-005 because of the potential impact on the BES should they fail to operate. If a tapped transformer has a relay protection failure, the backup protection would be 2 remote breakers in the BES which would isolate not</p>

Voter	Entity	Segment	Vote	Comment
				only the affected transformer and its load but any other tapped circuits between the open breakers and also would remove a section of BES transmission from service. It is clear that a failure or misoperation of this transformer protection equipment would impact the BES and we believe it should be considered as an applicable BES protection system.
<p><b>Response:</b> The Drafting Team acknowledges this fact and acknowledges that there are differences in the Regional Entity definitions of the BES; however, under the present standards process, the definition of the BES is assigned to the Regional Entity. Each Regional Entity has a definition of the BES and has provided that definition to NERC. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
Paul B. Johnson	American Electric Power	1	Negative	While AEP generally agrees with the response offered in the interpretation, we do not believe that is appropriate to define a term used in the standard through an interpretation, especially where it changes the meaning of requirements, rather than through the standard development process. It also concerns AEP that there seem to be regional differences in what constitutes the BES and that this interpretation is in conflict with some of the regions. Without a common knowledge of what constitutes the BES, it only creates a greater lack of clarity as Interpretations attempt to stipulate what is included and what is not included in the BES, particularly when it differs from the regions.
<p><b>Response:</b> This particular request was for an “interpretation” of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p> <p>The phrase “specific clarification may be required” is meant to identify that there are differences among Regions in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a given Region, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				

Voter	Entity	Segment	Vote	Comment
Raj Rana	American Electric Power	3	Negative	While AEP generally agrees with the response offered in the interpretation, we do not believe that is appropriate to define a term used in the standard through an interpretation, especially where it changes the meaning of requirements, rather than through the standard development process. It also concerns AEP that there seem to be regional differences in what constitutes the BES and that this interpretation is in conflict with some of the regions. Without a common knowledge of what constitutes the BES, it only creates a greater lack of clarity as Interpretations attempt to stipulate what is included and what is not included in the BES, particularly when it differs from the regions.
<p><b>Response:</b> This particular request was for an interpretation of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p> <p>The phrase “specific clarification may be required” is meant to identify that there are differences among Regions in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a given Region, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
Brock Ondayko	AEP Service Corp.	5	Negative	While AEP generally agrees with the response offered in the interpretation, we do not believe that is appropriate to define a term used in the standard through an interpretation, especially where it changes the meaning of requirements, rather than through the standard development process. It also concerns AEP that there seem to be regional differences in what constitutes the BES and that this interpretation is in conflict with some of the regions. Without a common knowledge of what constitutes the BES, it only creates a greater lack of clarity as Interpretations attempt to stipulate what is included and what is not included in the BES, particularly when it differs from the regions.
<p><b>Response:</b> This particular request was for an “interpretation” of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p> <p>The phrase “specific clarification may be required” is meant to identify that there are differences among Regions in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a</p>				

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<p>given Region, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
Edward P. Cox	AEP Marketing	6	Negative	<p>While AEP generally agrees with the response offered in the interpretation, we do not believe that is appropriate to define a term used in the standard through an interpretation, especially where it changes the meaning of requirements, rather than through the standard development process. It also concerns AEP that there seem to be regional differences in what constitutes the BES and that this interpretation is in conflict with some of the regions. Without a common knowledge of what constitutes the BES, it only creates a greater lack of clarity as Interpretations attempt to stipulate what is included and what is not included in the BES, particularly when it differs from the regions.</p>
<p><b>Response:</b> This particular request was for an “interpretation” of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p> <p>The phrase “specific clarification may be required” is meant to identify that there are differences among Regions in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a given Region, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
Kenneth Goldsmith	Alliant Energy Corp. Services, Inc.	4	Affirmative	<p>While I am voting affirmative, we believe this is a misuse of the interpretation process. This should go through the SAR process.</p>
<p><b>Response:</b> The Team acknowledges your affirmative response and thanks you for your clarifying comment.</p> <p>This particular request was for an interpretation of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p>				

Voter	Entity	Segment	Vote	Comment
Robert Martinko	FirstEnergy Energy Delivery	1	Affirmative	FirstEnergy generally supports the Interpretation and is voting AFFIRMATIVE, but believes the last paragraph only confuses the matter and should be removed from the Interpretation. For both Regional Entity examples the interpretation response provides clarity and the same endpoint can now be reached regarding what would be in and out of scope for the transmission Protection System. The first two paragraphs are sufficient to address the question raised regarding what constitutes a "transmission Protection System" with the key phrase in the response being "... any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc) identified as being included in the Bulk Electric System (BES)."
<p><b>Response:</b> The Team acknowledges your affirmative response and thanks you for your clarifying comment.</p> <p>The phrase "specific clarification may be required" is meant to identify that there are differences among Regions in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a given Region, the protection schemes installed to detect faults on a radial line are not considered "transmission Protection Systems." However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase "It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity" has been replaced with "It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity."</p>				
Joanne Kathleen Borrell	FirstEnergy Solutions	3	Affirmative	FirstEnergy generally supports the Interpretation and is voting AFFIRMATIVE, but believes the last paragraph only confuses the matter and should be removed from the Interpretation. For both Regional Entity examples the interpretation provides clarity and the same endpoint can now be reached regarding what would be in and out of scope for the transmission Protection System. The first two paragraphs are sufficient to address the question raised regarding what constitutes a "transmission Protection System" with the key phrase in the response being "... any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc) identified as being included in the Bulk Electric System (BES)."
Kenneth Dresner		5		
Mark S Travaglianti		6		
<p><b>Response:</b> The Team acknowledges your affirmative response and thanks you for your clarifying comment.</p> <p>The phrase "specific clarification may be required" is meant to identify that there are differences among Regions in what facilities are included in the BES;</p>				

Voter	Entity	Segment	Vote	Comment
<p>therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a given Region, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
Douglas Hohlbaugh	Ohio Edison Company	4	Affirmative	<p>FirstEnergy generally supports the Interpretation and is voting AFFIRMATIVE, but believes the last paragraph only confuses the matter and should be removed from the Interpretation. For both Regional Entity examples the interpretation response provides clarity and the same endpoint can now be reached regarding what would be in and out of scope for the transmission Protection System. The first two paragraphs are sufficient to address the question raised regarding what constitutes a "transmission Protection System" with the key phrase in the response being "... any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc) identified as being included in the Bulk Electric System (BES)."</p>
<p><b>Response:</b> The Team acknowledges your affirmative response and thanks you for your clarifying comment.</p> <p>The phrase “specific clarification may be required” is meant to identify that there are differences among Regions in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a given Region, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
Harold Taylor, II	Georgia Transmission Corporation	1	Affirmative	<p>I would like to see a more firm stand on what constitutes transmission asset/protection and what is distribution. Example: A distribution provider may have a peak shaving generator with no intention of export to the transmission system. A reverse power relay applied to the bank lowside may be designated as transmission protection, but bank differentials and backup overcurrents should not be. Example: Transmission breakers may be required to protect distribution banks due to available fault current but they should not be considered as being applied for transmission protection.</p>



Voter	Entity	Segment	Vote	Comment
<p><b>Response:</b> The Team acknowledges your affirmative response and thanks you for your clarifying comment.</p> <p>The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.</p>				
James A Ziebarth	Y-W Electric Association, Inc.	4	Affirmative	<p>Y-WEA thanks the standard drafting team for their work on this interpretation. While we have some serious reservations about the clarity of the language in the interpretation regarding protection systems installed where there may be a generator connected downline, Y-WEA feels that the need for a general exclusion of protection systems for radial facilities outweighs these concerns. It should be noted, however, that the language about downstream connected generators and the design intent of a protection system could potentially be broadly interpreted and applied unless the drafting team added to the interpretation some additional criteria relating to generator size and/or specifically who makes the determination as to the intended design of a protection system and whether or not the protection system was intended to react to transmission system faults.</p>
<p><b>Response:</b> The Team acknowledges your affirmative response and thanks you for your clarifying comment.</p> <p>The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.</p>				
Terry Bilke	Midwest ISO, Inc.	2	Abstain	<p>Several of our members have expressed concern with this interpretation. We would like to hear others' positions before casting a final ballot.</p>
<p><b>Response:</b> The Team acknowledges your response and thanks you for your clarifying comment.</p>				

## **Project 2009-17: Interpretation of PRC-004-1 and PRC-005-1 for Y-W Electric and Tri-State Consideration of Comments for Initial Ballot of Revision 1 (November 19–December 7, 2009)**

### **Summary Consideration:**

Several commenters expressed concern that low-voltage networks and small generators do not have a material impact on the reliability of the Bulk Electric System (BES) or that discussion of low-voltage networks or “transmission system faults” was not clear. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”

Several commenters expressed concern that the interpretation has created a defined term, “transmission Protection System,” and that definitions should be developed through the NERC standards development process. The drafting team has modified the first paragraph of the interpretation to clarify our intent is to interpret the applicability of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2; not to define the term “transmission Protection System.” The last sentence now reads, “In these two standards, use of the phrase “transmission Protection System” indicates that the requirements using this phrase are applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”

Some commenters expressed concern that the interpretation is in conflict with regional definitions of the BES or that it attempts to interpret these regional definitions. Other commenters expressed concern that the final paragraph in the interpretation regarding regional differences in definitions of the BES amounted to a disclaimer and undermined the interpretation. The drafting team believes the interpretation, as modified, avoids potential conflicts with regional definitions and believes that references to the BES are valid for the existing definition of the BES and also will be applicable if a NERC-wide methodology for determining BES facilities is developed. The drafting team acknowledges the concern with the last paragraph of the interpretation. The drafting team has removed the paragraph, believing it is not needed to respond to the request for interpretation.

Two commenters expressed concern that faults on non-BES elements could have a material impact on the BES if a protection system failure were to occur. The drafting team acknowledges the potential for faults on non-BES elements to impact the BES and had extensive discussion regarding this concern. However, the drafting team believes that extending applicability of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2 to non-BES elements would change these standards. Such a change would require a Standard Authorization Request (SAR). A majority of the drafting team believes the modifications to the interpretation are adequate and that a SAR to modify the standard is not necessary.

If you feel that the drafting team overlooked your comments, please let us know immediately. Our goal is to give every comment serious consideration in this process. If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Gerry Adamski, at 609-452-8060 or at [gerry.adamski@nerc.net](mailto:gerry.adamski@nerc.net). In addition, there is a NERC Reliability Standards Appeals Process.<sup>1</sup>

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<sup>1</sup> The appeals process is in the Reliability Standards Development Procedure: [http://www.nerc.com/files/RSDP\\_V6\\_1\\_12Mar07.pdf](http://www.nerc.com/files/RSDP_V6_1_12Mar07.pdf).

Voter	Entity	Segment	Vote	Comment
Kirit S. Shah  Mark Peters	Ameren Services	1  3	Negative	1. We know of no situation where these networks or small (< 20MVA ) generator have a material impact on the reliability of the BES. Many co-ops, municipals, and customers operate with a networked sub-transmission or medium voltage system which would make their back-feed protection a transmission protection system per this definition. 2. If this interpretation is approved, the owning entity is responsible for compliance. The TO to which they're connected is not responsible. NERC and regional entities are responsible for assuring that all entities (e.g. co-ops, municipals, and even retail customers) are registered, and then enforcing NERC standards. This could significantly increase compliance enforcement burden with little material improvement in BES reliability. 3. We believe that all transformer taps with low-side voltage below 100kV should be excluded.
<p><b>Response:</b> The drafting team has modified the interpretation in response to the comments received. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is "installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES."</p>				
Larry E Watt	Lakeland Electric	1	Negative	Based on the NERC definition and FERC Order 693, the Interpretation Team has overstepped their bounds by attempting to define 'transmission Protection Systems' as they apply to the regional definitions of Bulk Electric System. All requests for interpretation of regional definitions of the Bulk Electric System and regional documents supporting the definition should be directed to the appropriate Regional Entity for review and comment.
<p><b>Response:</b> The drafting team has modified the first paragraph of the interpretation to clarify our intent is to interpret the applicability of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2, not to define the term "transmission Protection System." The last sentence now reads, "In these two standards, use of the phrase transmission Protection System indicates that the requirements using this phrase are applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES."</p>				
Peter T Yost  Edwin E	Consolidated Edison Co. of New York	3  5	Negative	Con Edison votes no on this ballot for the following reason: the term "networked low side system" is unclear. We believe the term should be revised to "low side system supplied from multiple transmission substations". This revision is better aligned with the language regarding radial exclusions in the NERC definition of Bulk Electric System.

Voter	Entity	Segment	Vote	Comment
Thompson  Nickesha P Carrol		6		
<p><b>Response:</b> The drafting team has modified the interpretation in response to the comments received. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p>				
Douglas E. Hils  Robert Smith  Henry Ernst Jr	Duke Energy Carolina	1  5  3	Negative	<p>Duke Energy votes “Negative” on this Interpretation because of the sentence “In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission system faults, then these Protection Systems would be considered transmission Protection Systems.” This sentence is in conflict with the RFC BES definition which states that “The ReliabilityFirst Bulk Electric System excludes: (1) radial facilities connected to load serving facilities or individual generation resources smaller than 20 MVA or a generation plant with aggregate capacity less than 75 MVA where the failure of the radial facilities will not adversely affect the reliable steady-state operation of other facilities operated at voltages of 100 kV or higher...”</p>
<p><b>Response:</b> The drafting team has modified the interpretation in response to the comments received. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p>				
Louise McCarren	Western Electricity Coordinating Council	10	Negative	<p>During the first ballot of this interpretation the following comment was submitted We would consider the protection system for a transformer with a High Side Voltage greater than 100Kv, connected to a transmission line at greater than 100KV by a tap as a BES protection system if: 1) the transformer tap connection had two power supplies. Or 2) the transformer protection system had direct communication with another BES relay or protection system such as a transfer trip. The current definition of BES specifies that a radial transmission line serving only</p>

Voter	Entity	Segment	Vote	Comment
				<p>load is not considered as BES IF there is only a single power source. WECC considers these tapped connections as having two power sources. We also believe these transformer protection systems for this configuration should be considered as BES protection systems and subject to PRC-005 because of the potential impact on the BES should they fail to operate. If a tapped transformer has a relay protection failure, the backup protection would be 2 remote breakers in the BES which would isolate not only the affected transformer and its load but any other tapped circuits between the open breakers and also would remove a section of BES transmission from service. It is clear that a failure or misoperation of this transformer protection equipment would impact the BES and we believe it should be considered as an applicable BES protection system. The changes made to the current interpretation did not alter the interpretation to address these concerns</p>
<p><b>Response:</b> The interpretation does not impact the definition of the Bulk Electric System or its application within each region. The drafting team acknowledges the potential for faults on non-Bulk Electric System elements to impact the Bulk Electric System and had extensive discussion regarding this concern. However, the drafting team is required to base the interpretation on the text of the existing standard and supporting documents, such as defined terms in the NERC Glossary. The drafting team believes that extending applicability of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2 to non-Bulk Electric System elements would change these standards. Such a change would require a Standard Authorization Request (SAR). A majority of the drafting team believes the modifications to the interpretation are adequate and that a SAR to modify the standard is not necessary.</p>				
George R. Bartlett	Entergy Corporation	1	Negative	<p>We believe that there must be a minimum MW value for low side sources potentially contributing fault energy into the BES. It does not seem reasonable to include every single distributed generation source (no matter the size) and its associated protection schemes in the scope of transmission protection schemes under these standards. We suggest the following points to exclude the applicability of relaying protection schemes applied to transformers operated with low sides less than 100kV: Â· Protection schemes designed primarily to protect the transformer itself AFTER the BES branch is isolated through its associated transmission line protection scheme - i.e. overcurrent schemes which isolate tapped transformers from damaging currents which might otherwise be backfed through the transformer's networked or paralleled low side for permanent line faults or isolated transmission load. Â· Protection schemes designed to operate AFTER the clearing of a transmission BES branch to prevent overvoltage conditions which might damage other distribution or transmission assets such as insulators, bushings, lightning arresters, breakers, PT's, CT's, power transformer windings etc. due to a permanent line to ground fault on the isolated BES branch backfed through a delta connected primary</p>
Matt Wolf		3		
Stanley M Jaskot		5		
Terri F Bennet		6		

Voter	Entity	Segment	Vote	Comment
				winding. (i.e. reverse power schemes, zero sequence overvoltage, etc). We support having a reasonable grace period established to allow all entities to come into compliance with any interpretation of a standard when such interpretations represent a significant difference in the initial understanding and application of that standard. We further support waiving or otherwise making special allowance for retroactive compliance requirements when interpretations represent a significant change in the industry's understanding and application of a standard.
<p><b>Response:</b> The drafting team has modified the interpretation in response to the comments received. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p> <p>Based on NERC’s standards development process, as defined in the <i>Reliability Standards Development Procedure</i>, interpretations become effective when approved by regulatory authorities; therefore, implementation plans are not applicable. The drafting team believes that the revised interpretation will not be viewed as a “significant change in the industry's understanding and application of a standard,” and believes the changes to this interpretation will address the commenter’s concern.</p>				
Stephen Lesniak	Commonwealth Edison Co.	3	Negative	Exelon does not believe that protection equipment that trips non-BES equipment poses a threat to the Bulk Electric System. Exelon knows of no evidence within its’ system or on the systems of others where this equipment has led to anything approaching a Bulk Electric System event. Therefore protective equipment designed to detect BES faults that does not trip a BES element should not be subject to the substantial additional expense and burden of record keeping and compliance required by a NERC standard. The definition of a Transmission Protection System should be changed to include only those devices designed to detect transmission level faults and trip BES level elements.
<p><b>Response:</b> The drafting team has modified the interpretation in response to the comments received. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p>				
Suzanne Ritter Terry L.	Santee Cooper	6	Negative	Further clarity is needed in the sentence "In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission system faults, then these Protection Systems would be considered transmission Protection Systems." Specifically,

Voter	Entity	Segment	Vote	Comment
Blackwell		1		<p>what is meant by "installed to detect and initiate actions for transmission system faults?" If there is a networked subtransmission system (less than 100 kV), there sometimes are protection system elements that could "detect and initiate actions for transmission system faults" eventually, just based on the settings needed to protect the subtransmission element. However, they are not "installed to detect and initiate actions for transmission system faults." They are installed to protect the subtransmission elements. Also, sometimes there are protection system elements on small, sub-transmission generators that are "installed to detect and initiate actions for transmission system faults," but not necessarily for the protection of the transmission system element, just as a precaution for the unit itself. These protection systems are not really significant to the transmission system. For instances like these, the ramifications for the possible expansion of this definition of "transmission protection system," based on the wording of these sentences, could be both significant and open to further interpretation. The significance to entities of such an interpretation seems to warrant this subject being handled within the actual standard, instead of an interpretation (based on the note that says, "Note: an Interpretation cannot be used to change a standard"), unless the interpretation is specifically clarified to make sure it is only taken as pertaining to protection systems for potential sources (generator or networked low side system) that are installed specifically to protect a transmission element, not just that may be able to operate for a fault on a transmission system element. Suggest at least wording the sentence as "... and there are Protection Systems primarily installed to protect the associated transmission system element by detecting and initiating actions for transmission system faults, then these Protection Systems would be considered transmission Protection Systems."</p>
<p><b>Response:</b> The drafting team has modified the interpretation in response to the comments received. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is "installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES."</p>				
Alan Gale	City of Tallahassee	5	Negative	<p>I appreciate Y-WEA's and Tri-State's effort to obtain a clarification so that "[t]hose who are subject to Commission penalties need to know, in advance, what they must do to avoid a penalty" as Commissioner Moeller reiterated in his concurring opinion to the FPL settlement. However, the questions asked must be addressed at the regional level. It is possible that two different regions have two different definitions of what the BES is. Where is the boundary line</p>

Voter	Entity	Segment	Vote	Comment
				for the BES? Can you have sub-transmission components of the BES? Does a small local generator make it a transmission system and part of the BES? The interpretation provided even states that this clarification should come from the Regional Entity.
<p><b>Response:</b> The drafting team has modified the interpretation to avoid potential conflicts with regional definitions of the Bulk Electric System. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.” This interpretation clarifies the protective relays to which PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2 are applicable. The drafting team acknowledges that by referring to the Bulk Electric System in the interpretation, the applicability is dependent on the definition of Bulk Electric System in each region, similar to application of any other standard that references the Bulk Electric System.</p>				
John J. Moraski	Baltimore Gas & Electric Company	1	Negative	If the highlighted change below (i.e., *normally*) were made that would cause BGE to favor the interpretation. BGE often has slow acting low-side reverse directional relays enabled on radial transformers to protect the transformer against the effects of a transmission line fault in the improbable circumstance that abnormal switching has provided a fault current source at the distribution voltage level. The interpretation as written would incent BGE to disable that protection in order to avoid regulatory risk, an action that would not serve reliability. It is worth noting that when such a relay operates it is after the fault has already been cleared at the transmission terminals, so the benefit of the relay is to the transformer, not to the BES. In general, a radially connected transformer protection system energized from the BES would not be considered a transmission Protection System. In the event that the transformer low side is *normally* connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission system faults, then these Protection Systems would be considered transmission Protection Systems.
<p><b>Response:</b> The drafting team has modified the interpretation in response to the comments received. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p>				
Lee Schuster	Florida Power Corporation	3	Negative	Progress is voting Negative and supports the position held by FRCC, as explained in their comments in this ballot. The requester of the interpretation asked for an interpretation and definition of the undefined term “transmission Protection System”. Definitions should be



Voter	Entity	Segment	Vote	Comment
				developed through the NERC Reliability Standards Development Procedure by submitting a SAR and requesting that a term be defined. The interpretation development process should not be used to create a new defined term, as requested by the requester in this Project.
<p><b>Response:</b> The drafting team has modified the first paragraph of the interpretation to clarify our intent is to interpret the applicability of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2, not to define the term “transmission Protection System.” The last sentence now reads, “In these two standards use of the phrase transmission Protection System indicates that the requirements using this phrase are applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p>				
Sam Waters  Wayne Lewis	Progress Energy Carolinas	3  5	Negative	Progress is voting Negative and supports the position held by FRCC, as explained in their comments in this ballot. The requester of the interpretation asked for an interpretation and definition of the undefined term “transmission Protection System”. Definitions should be developed through the NERC Reliability Standards Development Procedure by submitting a SAR and requesting that a term be defined. The interpretation development process should not be used to create a new defined term, as requested by the requester in this Project.
<p><b>Response:</b> The drafting team has modified the first paragraph of the interpretation to clarify our intent is to interpret the applicability of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2, not to define the term “transmission Protection System.” The last sentence now reads, “In these two standards use of the phrase transmission Protection System indicates that the requirements using this phrase are applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p>				
John Bussman	Associated Electric Cooperative, Inc.	1	Negative	Response: The request for interpretation of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2 focuses on the applicability of the term “transmission Protection System.” The NERC Glossary of Terms Used in Reliability Standards contains a definition of “Protection System” but does not contain a definition of transmission Protection System. The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources. In general, a radially connected transformer protection system energized from the BES would not be considered a transmission Protection System. In the event that the transformer low side is connected to a potential source (generator

Voter	Entity	Segment	Vote	Comment
				<p>or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission system faults, then these Protection Systems would be considered transmission Protection Systems. It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity. We believe one of the main problems with this interpretation is that “transmission system faults” is not defined. Are these faults on the BES? If so, we can better define which relays should be in the testing program. Still, for low voltage faults not on the BES, the BES can be impacted if the fault does not clear properly Another concern is where the generator source ends. That is, If an entity has a wind farm or other generator source at 10 or 20 MW (we have some as low as a few MWs) connected through two transformers 12.47 KV/ 69kV then 69kV/161kV before it is connected to the 100KV system; does all the relaying in between 12.47 and 100 kV have to be included within the relay maintenance test program. We don’t think that it would be necessary since the fault contribution would be negligible and the affect on the reliability of the BES is minimal. There is a concern with the term networked low side system. At AECl there are many 69KV loops that start at the 161kV transmission system and end back at the 161kV system with a number of transformations in between. Therefore, based on the interpretation; all relay systems within the 69kV network would be required to be included in the relay maintenance and testing program. We don’t believe that was the intent of the interpretation. We understand the intent of the interpretation. However, generator sources should be limited to those above some minimum MW value. In addition, the interpretation should limit the sub-100 kV Protection Systems that would be considered transmission Protection Systems to those associated with the first protective device downstream from the Bulk Electric System. The last item of concern is an implementation plan. If entities have not interrelated the standard per this interpretation when does the interpretation go into effect? There should be some amount of time that an entity has to have it included in their relay maintenance and test program. It should not be retroactive back to June 18, 2007.</p>

**Response:** The drafting team has modified the interpretation in response to the comments received. The drafting team believes these modifications avoid potential conflicts with regional definitions of the Bulk Electric System. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”

Voter	Entity	Segment	Vote	Comment
Michael K Wilkerson	Northern Indiana Public Service Co.	5	Negative	The final sentence in the interpretation appears to be a disclaimer that needs to be addressed. Variance in Regional Entity definitions of the BES should be eliminated by NERC especially since there are entities that span multiple regions.
Joseph O'Brien		6		
<p><b>Response:</b> The drafting team has removed the last paragraph from the interpretation. The drafting team acknowledges the concern with this paragraph raised by several commenters and believes this paragraph is not needed to respond to the request for interpretation.</p>				
James L. Jones	Southwest Transmission Cooperative, Inc.	1	Negative	The last sentence of the interpretation completely throws the whole issue back to the regions who have not been consistent in the first place. (It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.)
<p><b>Response:</b> The drafting team has removed the last paragraph from the interpretation. The drafting team acknowledges the concern with this paragraph raised by several commenters and believes this paragraph is not needed to respond to the request for interpretation.</p>				
Jason L Marshall	Midwest ISO, Inc.	2	Negative	We believe the interpretation would be accurate and correct with just the first two paragraphs. The last paragraph should be deleted as it undermines the first two paragraphs.
<p><b>Response:</b> The drafting team has removed the last paragraph from the interpretation. The drafting team acknowledges the concern with this paragraph raised by several commenters and believes this paragraph is not needed to respond to the request for interpretation.</p>				
Bob C. Thomas	Illinois Municipal Electric Agency	4	Negative	Actual interpretation is acceptable; however, IMEA's understanding is there is concern within the industry that the last sentence compromises the interpretation.
<p><b>Response:</b> The drafting team has removed the last paragraph from the interpretation. The drafting team acknowledges the concern with this paragraph raised by several commenters and believes this paragraph is not needed to respond to the request for interpretation.</p>				
Bruce Merrill	Lincoln Electric System	3	Negative	The old and new NERC definition of a transmission protection system seem to include only relays that detect faults on the BES and not relays that protect a radially connected transformer. However, we see from the Request for Interpretation that ReliabilityFirst includes

Voter	Entity	Segment	Vote	Comment
Dennis Florom  Erik Ruskamp		5  6		breaker failure protection for the transformer high side breaker and WECC includes all of the transformer protection. These protection systems do not detect faults on the BES but can trip an element of the BES. These regional entities are going a step further than NERC. This could present a problem in an audit situation.
<p><b>Response:</b> This interpretation clarifies the protective relays to which PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2 are applicable. The drafting team acknowledges that by referring to the Bulk Electric System in the interpretation, the applicability is dependent on the definition of Bulk Electric System in each region, similar to application of any other standard that references the Bulk Electric System.</p>				
Linda Campbell	Florida Reliability Coordinating Council	10	Negative	<p>The requesters have asked NERC to define ‘transmission Protection System’ and to effectively make a determination of which regional (WECC or RFC) definition of Bulk Electric System is correct. This is an inappropriate use of the Interpretation Process for several reasons. Definitions should be developed through the NERC Reliability Standards Development Procedure by submitting a Standard Authorization Request (SAR) to the standards process manager requesting that a term be defined. Development of a definition for one Reliability Standard interpretation may not consider the impact to the other Reliability Standards that will also use that same definition. Furthermore the Standards Development Procedure ensures that industry vetting is applied to establish consensus. The responsibility of defining Bulk Electric System resides with the regions. This is clearly stated in the NERC definition of the term: “As defined by the Regional Reliability Organization, the electrical generation resources, transmission lines, interconnections with neighboring systems, and associated equipment, generally operated at voltages of 100 kV or higher. Radial transmission facilities serving only load with one transmission source are generally not included in this definition”. Additionally, In Order 693, Paragraph 77, FERC directed NERC to provide them with a complete set of regional definitions of the bulk electric system and any regional documents that identify critical facilities to which the Reliability Standards apply (i.e. facilities below a 100kV threshold that have been identified by the regions as critical to system reliability). The NERC definition and FERC Order 693 clearly identify that the responsibility for the definition of the Bulk Electric System resides with the Regional Entities. Based on the NERC definition and FERC Order 693, the Interpretation Team has overstepped their bounds by attempting to define ‘transmission Protection Systems’ as they apply to the regional definitions of Bulk Electric System. All requests for interpretation of regional definitions of the Bulk Electric System and regional documents supporting the definition should be directed to the appropriate Regional Entity for review and comment.</p>

Voter	Entity	Segment	Vote	Comment
<p><b>Response:</b> The drafting team has modified the interpretation to avoid potential conflicts with regional definitions of the Bulk Electric System. The discussion regarding low-voltage networks has been removed from the second paragraph and the first paragraph has been modified. The drafting team also has modified the first paragraph of the interpretation to clarify our intent is to interpret the applicability of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2, not to define the term “transmission Protection System.” The last sentence now reads, “In these two standards use of the phrase transmission Protection System indicates that the requirements using this phrase are applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p>				
<p>Glen Reeves</p> <p>Robert Kondziolka</p> <p>John T. Underhill</p> <p>Mike Hummel</p>	<p>Salt River Project</p>	<p>5</p> <p>1</p> <p>3</p> <p>6</p>	<p>Negative</p>	<p>The term "transmission system faults" used in the interpretation needs to be defined. Is "transmission system" synonymous with "Bulk Electric System"?</p>
<p><b>Response:</b> The drafting team has modified the interpretation to remove the phrase “transmission system faults.” The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p>				
<p>Chris W Bolick</p>	<p>Associated Electric Cooperative, Inc.</p>	<p>3</p>	<p>Negative</p>	<p>The term transmission system faults is undefined</p>
<p><b>Response:</b> The drafting team has modified the interpretation to remove the phrase “transmission system faults.” The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p>				

Voter	Entity	Segment	Vote	Comment
Terry Harbour	MidAmerican Energy Co.	1	Negative	This interpretation could inappropriately pull in distribution protection systems (such as 13 or 69 kV breakers) on the low side of a transformer
<p><b>Response:</b> The drafting team has modified the interpretation in response to the comments received. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p>				
Kim Warren	Independent Electricity System Operator	2	Negative	We continue to have certain reservations regarding the interpretation as drafted because the revisions have failed to address what in our view is its limited scope. The interpretation now reads in part: “... any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)...” Our point is that it is possible for (lower voltage) faults on non-BES elements to impact the BES if those faults are not cleared properly, so that any protection system installed with the intention of detecting and initiating action in such cases where the fault is impactful, should also be classified as a transmission protection system. In short, we believe the goal of a transmission protection system should be to protect the BES from faults that may have an adverse impact on it whether these faults occur on BES elements or not, and as such the “test” of what constitutes a transmission protection should be expanded beyond merely faults on BES elements. Notwithstanding the DT’s response to our previous comment on this issue, the current version of the interpretation does not make this clear.
<p><b>Response:</b> The drafting team acknowledges the potential for faults on non-Bulk Electric System elements to impact the Bulk Electric System and had extensive discussion regarding this concern. However, the drafting team is required to base the interpretation on the text of the existing standard and supporting documents, such as defined terms in the NERC Glossary. The drafting team believes that extending applicability of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2 to non-Bulk Electric System elements would change these standards. Such a change would require a Standard Authorization Request (SAR). A majority of the drafting team believes the modifications to the interpretation are adequate and that a SAR to modify the standard is not necessary.</p>				
Gregory L Pieper	Xcel Energy, Inc.	1	Negative	We felt that the drafting team’s response to our comment in the last ballot was very helpful and addressed our concern. However, no corresponding clarification was made to the interpretation. Interpretations should not introduce new ambiguity. We feel that it is the drafting team’s responsibility to ensure that the issues relating to “potential sources” is clear in the interpretation and modifications should be made. One suggested way to clarify the

Voter	Entity	Segment	Vote	Comment
Michael Ibold  David F. Lemmons		3  6		interpretation is to add some of the language in the drafting team's response to our comment in the last ballot.
<p><b>Response:</b> The drafting team agrees it is important that an interpretation should not introduce new ambiguity. The drafting team has modified the interpretation in response to the comments received. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p>				
Paul B. Johnson  Raj Rana  Brock Ondayko  Edward P. Cox	American Electric Power	1  3  5  6	Negative	<p>While AEP generally agrees with the interpretation provided by the SDT, we do not believe that the interpretation process is being used appropriately in this instance. First, AEP does not believe it is appropriate to define a term used in the standard through an interpretation, especially when such a definition changes the meaning of the standard's requirements. Establishing a definition for the term "transmission Protection System" should be done in the standard development process and through the NERC glossary development process. To justify doing otherwise by stating that the term is already used (but not defined) in the standard, does not seem to be a logical approach. In the case of the acknowledged differences among Regional Entity definitions of the BES, regional BES differences should be identified within the standard. Alternatively, the applicable definition of "transmission Protection System" facilities should be provided on a national basis, with the regions provided the opportunity to create exceptions through the regional standards development process. To simply direct responsible entities to independently seek specific clarification for each Regional Entity, as is written in the third paragraph of the interpretation, is inconsistent with how regional differences have been managed in other standards developed through the national and regional standards development process. Furthermore, the approach of directing responsible entities to request specific clarification of the regional (BES) definition (as applicable to "transmission Protection System") of the appropriate Regional Entity, does not provide a formal and consistent basis under which responsible entities can demonstrate full compliance with the standard.</p>
<p><b>Response:</b> The drafting team has modified the first paragraph of the interpretation to clarify our intent is to interpret the applicability of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2, not to define the term “transmission Protection System.” The drafting team also has modified the interpretation to avoid potential</p>				

Voter	Entity	Segment	Vote	Comment
<p>conflicts with regional definitions of the Bulk Electric System. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified. The last sentence now reads, "In these two standards use of the phrase transmission Protection System indicates that the requirements using this phrase are applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES."</p> <p>The drafting team has removed the last paragraph from the interpretation. The drafting team acknowledges the concern with this paragraph raised by several commenters and believes this paragraph is not needed to respond to the request for interpretation</p>				
David H. Boguslawski	Northeast Utilities	1	Affirmative	Support with comments: 1) Suggest replacing phrase "from all local sources" with "from all terminals that must open to clear the fault from the BES" -- since introducing the concept of "local" may cause some confusion. 2) Suggest that the definition of Transmission protection system be added to the NERC glossary of terms.
<p><b>Response:</b> The drafting team acknowledges your affirmative response and clarifying comment. The drafting team has modified the interpretation in line with the commenter's suggestion. The first paragraph has been modified to clarify that a transmission Protection System is "installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES."</p>				
Richard Salgo	Sierra Pacific Power Co.	1	Affirmative	The clarifications provided in this revision to the interpretation address our previous concerns.
<p><b>Response:</b> The drafting team acknowledges your affirmative response and clarifying comment. The drafting team thanks you for your participation in this project.</p>				
James A Maenner	James A Maenner	8	Affirmative	While I agree with this interpretation, the issue has unveiled problems concerning regional differences. By allowing each region to define the Bulk Electric System consensus on transmission applicability will be difficult to achieve. I suggest the development of a NERC-wide methodology for determining BES facilities.
<p><b>Response:</b> The drafting team acknowledges your affirmative response and clarifying comment. The drafting team has modified the interpretation to avoid potential conflicts with regional definitions of the Bulk Electric System. The drafting team believes this revised interpretation will be applicable for the existing definition of the Bulk Electric System, and also will be applicable if a NERC-wide methodology for determining BES facilities is developed.</p>				



**Consideration of Comments on Initial Ballot — Interpretation Y-W Electric and Tri-State (Revision 2) (Project 2009-17)  
Initial Ballot (April 28-May 10, 2010)**

**Summary Consideration:**

The majority of the commenters stated, in various ways, concerns regarding what could be construed as a BES element and requested further clarification. The SDT explained that providing a clarification or further defining a BES element was outside the scope of the interpretation. The SDT believes that references to the BES in the interpretation are clear and valid in the context of the existing NERC definition of the BES (as defined by the Regional Reliability Organization per the NERC Glossary of Terms). The SDT further explained that the request for interpretation did not ask for clarification as to when a piece of equipment was considered a BES element. Y-W Electric Association, INC. and Tri-State Generation and Transmission Association, Inc. requested an interpretation of the term “transmission Protection System” and specifically whether protection for a radially-connected transformer protection system energized from the BES was considered a transmission Protection System and if it is subject to these standards. The SDT believes that the interpretation clearly answers both the general and specific aspects of the request.

A couple of commenters indicated that some Protection Systems were installed strictly for the purpose of protecting generators, substation transformers and Distribution Systems downstream. They were concerned that, based on this interpretation, they would now be considered transmission Protection Systems. The SDT explained that in order to be considered a “transmission Protection System”, all three of the aspects of the interpretation must be met:

- (1) installed for the purpose of detecting Faults on the transmission elements,
- (2) the protected element is identified as included in the BES, and
- (3) trips an interrupting device that interrupts current supplied directly from the BES.

The definition of Bulk Electric System: As defined by the Regional Reliability Organization, the electrical generation resources, transmission lines, interconnections with neighboring systems, and associated equipment, generally operated at voltages of 100 kV or higher. Radial transmission facilities serving only load with one transmission source are generally not included in this definition.

If you feel that the drafting team overlooked your comments, please let us know immediately. Our goal is to give every comment serious consideration in this process. If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Herbert Schrayshuen, at 609-452-8060 or at herb.schrayshuen@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.<sup>1</sup>

Voter	Entity	Segment	Vote	Comment
Larry E Watt	Lakeland Electric	1	Negative	a protection system installed on that non-BES transformer could be determined to be a "transmission Protection System" with this interpretation. This contradicts the example.

<sup>1</sup> The appeals process is in the Reliability Standards Development Procedure: [http://www.nerc.com/files/RSDP\\_V6\\_1\\_12Mar07.pdf](http://www.nerc.com/files/RSDP_V6_1_12Mar07.pdf).

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Voter	Entity	Segment	Vote	Comment
<p><b>Response:</b> The interpretation states that the requirements are “applicable to any Protection System that is installed for the purpose of detecting Faults on <u>Transmission elements</u> (lines, buses, transformers, etc.) <u>identified as being included in the Bulk Electric System</u>” (emphasis added). A Protection System installed on a non-BES transformer is not included in this list. This interpretation therefore excludes the possibility that the commenter’s example could be determined to be a “transmission Protection System.”</p>				
Horace Stephen Williamson	Southern Company Services, Inc.	1	Negative	<p>Although we are in agreement with the first part of the definition that has been proposed for the phase 'transmission Protection System' as "any Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System" we do not concur with the modification to the qualifier noted as 'and trips an interrupting device that interrupts current supplied directly from the BES'. We feel that the original applicability to 'and initiates action to clear the protected element from all local sources' more accurately addresses the transmission reliability concerns. As now proposed, a 230/69-kV facility that is interconnected with other non- BES 69-kV sources (other substations or generation facilities) and has Protection Systems installed to detect faults on the 230-kV source (.. Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System..) and trips a 69-kV device, would not be included since it isn't tripping a device ' that interrupts current supplied directly from the BES'.</p>
Richard J. Mandes	Alabama Power Company	3	Negative	
Anthony L Wilson	Georgia Power Company	3	Negative	
Gwen S Frazier	Gulf Power Company	3	Negative	
Don Horsley	Mississippi Power	3	Negative	
<p><b>Response:</b> The drafting team believes the present interpretation appropriately addresses the reliability concern. In the commenters' example, if a failure to interrupt the Fault current from the 69 kV system resulted in a reliability concern the 69 kV Elements could be identified as BES Elements.</p>				
George Tatar	Black Hills Corp	5	Negative	BHP voted No because of the qualifiers "that interrupts current supplied directly from the BES' and 'the transformer is a BES element". These qualifiers force the issue of whether a

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Voter	Entity	Segment	Vote	Comment
				transformer fed from a non-BES line can be considered a BES transformer. Because the interpretation, as written, does not allow the entities question to be consistently and reliably answered, BHP is voting NO.
<p><b>Response:</b> Deciding whether the transformer in the commenter’s example is a BES element is outside the scope of the interpretation. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms).</p>				
Eric Egge	Black Hills Corp	1	Negative	Black Hills Power respectfully votes against the interpretation because of the qualifiers ‘that interrupts current supplied directly from the BES’ and ‘the transformer is a BES element’. These qualifiers force the issue of whether a transformer fed from a non-BES line can be considered a BES transformer. This issue arises because of disagreement of whether a radial transmission line tapped off the BES serving only load is part of the BES, and that question arises from different interpretation of what constitutes ‘one’ source or ‘two’ sources. Although the interpretation must be limited in scope to the standards affected, the original interpretation request from the submitting entities asks whether ‘protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System’. Because the interpretation as written does not allow the entities’ question to be consistently and reliably answered, Black Hills Power is voting “No”.
<p><b>Response:</b> Deciding whether the transformer in the commenter’s example is a BES element is outside the scope of the interpretation. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms).</p>				
Danny McDaniel	Cleco Power LLC	1	Negative	Cleco agrees with the intent of the interpretation but disagrees that an Entity must determine if the transformer or line is a BES element. Additional clarification is required. Protection systems on radially connected transformers or lines serving load only that do not interrupt transmission grid flow as part of its protection scheme should not be part of the transmission Protection System. If the protection scheme tripped load served by the radially connected line or transformer and additional flows between transmission substations, the protection scheme would be part of the transmission Protection System.
Bryan Y Harper	Cleco Utility Group	3	Negative	
Matthew D Cripps	Cleco Power LLC	6	Negative	
<p><b>Response:</b> The drafting team has not stated in this interpretation what Entity is responsible for determining if a transformer or a line is a BES element. Deciding whether a transformer or line is a BES element is outside the scope of the interpretation. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization</p>				

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Voter	Entity	Segment	Vote	Comment
per the NERC Glossary of terms).				
Terry Harbour	MidAmerican Energy Co.	1	Negative	<p>Comment: Further clarification is required regarding the definition of a “BES element” (e.g., What is a BES transformer?). Receiving current from the BES is not a suitable criterion for applicability. As currently written 115kV/12kV distribution transformers could be incorrectly classified as a BES elements (without a clear definition) because they receive current from the BES. The concept of “no potential loop” back to the BES as presented in one of the examples is incorrect as this could bring in all facilities into scope regardless of voltage when that facility could be tied to another 100 kV and greater source. This could include lower voltage distribution based networks or possibly 15 kV class feeders with ties to adjacent feeders also fed from nearby BES substations. We propose the following definitions. Non-GSU transformers must have all windings (excluding any tertiary) rated at 100kV and above to be classified as a BES transformer. GSU transformers must have one winding rated at 100kV and above in order to be classified to be a BES transformer. These definitions are consistent with the bright line 100 kV and greater concept.</p>
<p><b>Response:</b> Providing clarification regarding the definition of a “BES element” is outside the scope of the interpretation. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms).</p>				
Kenneth Goldsmith	Alliant Energy Corp. Services, Inc.	4	Negative	<p>Further clarification is required regarding the definition of "BES Element" (e.g. What is a BES transformer?). Receiving current from the BES is not a suitable criterion for applicability. As currently written 115 kV/12 kV distribution transformers would incorrectly be classified as as BES Element because they receive current from the BES. We propose the following definitions: Non-GSU Transformers -- Must have all windings (excluding the tertiary winding) rated at 100 kV and above to be classified as a BES Transformer. GSU Transformers -- Must have a primary winding rated at 100 kV or above in order to be classified as a BES Transformer.</p>
<p><b>Response:</b> Providing clarification regarding the definition of a “BES element” is outside the scope of the interpretation. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms).</p>				

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Voter	Entity	Segment	Vote	Comment
Randi Woodward	Minnesota Power, Inc.	1	Negative	Further clarification is required regarding the definition of a “BES Element” (e.g., What is a BES transformer?). We propose the following definitions: - Non GSU transformers must have all windings (excluding tertiary windings) rated at 100kV and above in order to be classified as a BES transformer. - GSU transformers must have a primary winding rating at 100kV and above in order to be classified as a BES transformer.
<p><b>Response:</b> Providing clarification regarding the definition of a “BES element” is outside the scope of the interpretation. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms).</p>				
Bruce Merrill	Lincoln Electric System	3	Negative	Further clarification is required regarding the definition of a “BES element” (e.g., What is a BES transformer?). Receiving current from the BES is not a suitable criterion for applicability. As currently written 115kV/12kV distribution transformers would incorrectly be classified as a BES element because they receive current from the BES. We propose the following definitions: Non-GSU transformers must have all windings (excluding the tertiary winding) rated at 100kV and above in order to be classified to be a BES transformer. GSU transformers must have a primary winding rated at 100kV and above in order to be classified to be a BES transformer.
Eric Ruskamp	Lincoln Electric System	6	Negative	
<p><b>Response:</b> Providing clarification regarding the definition of a “BES element” is outside the scope of the interpretation. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms).</p>				
Dan R. Schoenecker	Midwest Reliability Organization	10	Negative	Further clarification is required regarding the definition of a “BES element” (e.g., What is a BES transformer?). Receiving current from the BES is not a suitable criterion for applicability. As currently written 115kV/12kV distribution transformers would incorrectly be classified as a BES element because they receive current from the BES.
<p><b>Response:</b> Providing clarification regarding the definition of a “BES element” is outside the scope of the interpretation. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms).</p>				
Michelle Rheault	Manitoba Hydro	1	Negative	Manitoba Hydro does not agree with the statement “A Protection System for a radially connected transformer energized from the BES would be considered a transmission Protection System and subject to these standards only if the protection trips an interrupting

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Voter	Entity	Segment	Vote	Comment
Greg C Parent	Manitoba Hydro	3	Negative	device that interrupts current supplied directly from the BES and the transformer is a BES element". We feel that consideration of the transformer low side being networked or connected to a source should determine if it is a transmission Protection System, as stated in previous interpretation. If a radially connected transformer trips an interrupting device that interrupts current supplied directly from the BES, and the interrupting device is in a ring bus configuration, this does not affect, the remaining BES transmission lines on that ring. Why did the last interpretation state that a radially connected transformer is not a transmission Protection System, and this interpretation states that it is a transmission Protection System? Would a radially connected transformer not be the same as a radially connected line, which does not fall under PRC-005-1?
Daniel Prowse	Manitoba Hydro	6	Negative	
<p><b>Response:</b> Changes between the previous interpretation and the current interpretation to remove the reference to low-side networks were made in response to comments. The drafting team believes the reference to interrupting current supplied from the BES provides more clarity than the previous reference to low-side networks. With regard to the commenters' comparison of the previous and present interpretations, please note that the present interpretation does not state that a Protection System on a radially connected transformer is a "transmission Protection System."</p>				
Paul Shipps	Lakeland Electric	6	Negative	Needs better wording on "interrupts current supplied directly from the BES", not having to determine what the purpose of back-up protection is.
<p><b>Response:</b> The drafting team spent considerable time drafting this phrase and does not believe that additional clarity is necessary.</p>				
James R. Keller	Wisconsin Electric Power Marketing	3	Negative	The Comment Period and Ballot Period should not overlap. The industry and Standard Drafting Team should have opportunity to review comments prior to a ballot.
Linda Horn	Wisconsin Electric Power Co.	5	Negative	
<p><b>Response:</b> The drafting team is unaware of any overlap during development of this interpretation. There is no comment period for interpretations – comments are limited to those submitted with ballots. The present interpretation and responses to comments from the previous ballot were posted at the start of the 30-day pre-ballot window which was open from March 29 to April 28. The 30-day pre-ballot window provides the industry with the opportunity to review comments prior to the ballot window which was open from April 28 to May 10.</p>				

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Voter	Entity	Segment	Vote	Comment
Chifong L. Thomas	Pacific Gas and Electric Company	1	Negative	The interpretation applies Requirements R1 and R3 in PRC-004-1, and to 1 and R2 in PRC-005-1. PG&E is concerned that, as written, the interpretation could introduce confusion for the generator Protection System. The interpretation states, "a Protection System for a radially connected transformer energized from the BES would be considered a transmission Protection System and subject to these standards only if the protection trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element." However, from NERC Glossary of Terms, the definition of BES includes "the electrical generation resources, transmission lines, interconnections with neighboring systems, and associated equipment, generally operated at voltages of 100 kV or higher". Therefore, if a generator protection trips the generator, the generator protection system can also be deemed a transmission Protection System because the generator is included in the BES. PG&E suggests that the interpretation be modified to state, "a Protection System for a radially connected transformer, which serves only Load and energized from the BES, would be considered a transmission Protection System and subject to these standards only if the protection trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element."
<p><b>Response:</b> In order to be considered a "transmission Protection System," all three aspects of the interpretation must be met: (1) installed for the purpose of detecting Faults on Transmission Elements, (2) the protected Element is identified as included in the BES, and (3) trips an interrupting device that interrupts current supplied directly from the BES. Generator protection installed to detect Faults on the generator or generator step-up transformer or to protect the generator against abnormal operating conditions do not meet the first aspect and would not be considered "transmission Protection Systems."</p>				
Robert Kondziolka	Salt River Project	1	Negative	The Interpretation does not answer the question asked. It bases its guidance on whether or not the transformer is a BES element. Determining whether the transformer is a BES element causes the confusion and inconsistencies we believe the Interpretation request wanted to resolve.
John T. Underhill	Salt River Project	3	Negative	
Glen Reeves	Salt River Project	5	Negative	
<p><b>Response:</b> The request for interpretation did not ask for clarification as to when a transformer is considered to be a BES element. Y-W Electric Association, Inc. (Y-WEA) and Tri-State Generation and Transmission Association, Inc. (Tri-State) requested an interpretation of the term "transmission Protection System" and specifically whether protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System and is subject to these standards. The drafting team believes the interpretation clearly answers both the general and specific aspects of this request. Providing clarification regarding the definition of a "BES element" is outside the scope of the interpretation.</p>				
Karl Bryan	U.S. Army Corps of Engineers	5	Negative	The interpretation does not clearly answer the question posed by the "request for interpretation". The intent of the Reliability Standards is to have one set of rules for the BES

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Voter	Entity	Segment	Vote	Comment
	Northwestern Division			and yet the Regional Entities appear to be carving out exceptions that are going beyond the intent of a reliable BES. In regards to this particular issue, either the transformer feeding a radial load is in or out of the BES and the disparity amongst the REs (RFirst and WECC) needs to be fixed.
<p><b>Response:</b> The request for interpretation did not ask for clarification as to when a transformer is considered to be a BES element. Y-W Electric Association, Inc. (Y-WEA) and Tri-State Generation and Transmission Association, Inc. (Tri-State) requested an interpretation of the term "transmission Protection System" and specifically whether protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System and is subject to these standards. The drafting team believes the interpretation clearly answers both the general and specific aspects of this request. Providing clarification regarding the definition of a "BES element" is outside the scope of the interpretation.</p>				
Anthony Jankowski	Wisconsin Energy Corp.	4	Negative	The interpretation is contrary to the NERC BES definition and the RFC BES definition.
<p><b>Response:</b> The drafting team cannot respond without clarification as to how the interpretation is contrary to the definition of BES. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms).</p>				
Gregory J Le Grave	Wisconsin Public Service Corp.	3	Negative	The interpretation needs to be further clarified to state: BES transformers are defined as: Generator step-up transformers that have high side voltage of 100Kv or greater. Or Transformers that have a high and low side voltages of 100Kv or greater.
Leonard Rentmeester	Wisconsin Public Service Corp.	5	Negative	
<p><b>Response:</b> The request for interpretation did not ask for a definition of what constitutes a BES transformer. Y-W Electric Association, Inc. (Y-WEA) and Tri-State Generation and Transmission Association, Inc. (Tri-State) requested an interpretation of the term "transmission Protection System" and specifically whether protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System and is subject to these standards. The drafting team believes the interpretation clearly answers both the general and specific aspects of this request. Providing clarification regarding the definition of "BES transformers" is outside the scope of the interpretation.</p>				
Paul B. Johnson	American Electric Power	1	Negative	The revised interpretation is a significant improvement and AEP appreciates the work by the drafting team. However, AEP feels the last sentence of the first paragraph of the



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Voter	Entity	Segment	Vote	Comment
Raj Rana	American Electric Power	3	Negative	interpretation could be improved from: "...trips an interrupting device that interrupts current supplied directly from the BES." to the following: "...trips an interrupting device (such as circuit breakers and circuit switchers) that interrupts current flowing through the networked BES." In addition, AEP feels the last sentence of the last paragraph of the interpretation could be improved from: "...trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element." to the following: "...trips an interrupting device (such as circuit breakers and circuit switchers) that interrupts current flowing through the networked BES and the transformer is a BES element."
<b>Response:</b> The drafting team appreciates this input, but believes that the existing phrase more precisely reflects our intent.				
Edward P. Cox	AEP Marketing	6	Negative	The revised interpretation is a significant improvement and AEP appreciates the work by the drafting team. However, AEP feels the last sentence of the first paragraph of the interpretation could be improved from: "...trips an interrupting device that interrupts current supplied directly from the BES." to the following: "...trips an interrupting device (such as circuit breakers and circuit switchers) that interrupts current flowing through the networked BES." In addition, AEP feels the last sentence of the last paragraph of the interpretation could be improved from: "...trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element." to the following: "...trips an interrupting device (such as circuit breakers and circuit switchers) that interrupts current flowing through the networked BES and the transformer is a BES element."
<b>Response:</b> The drafting team appreciates this input, but believes that the existing phrase more precisely reflects our intent.				
Richard Salgo	Sierra Pacific Power Co.	1	Negative	The Standards Drafting Team is commended for eliminating the elements of vagueness from the prior interpretation (use of "generally" and deferral to the Regional Entity for specific clarification). However, we disagree with a key concept of this version, that an applicable protection system would trip an interrupting device that interrupts current supplied directly from the BES. Focusing on the very purpose of a transmission protection system, the principle of inclusion of a protection system in the subject standards applicability should revolve around whether the protection system detects and acts to isolate faults on transmission elements from any source of energy, not whether it interrupts current supplied from the BES. In the 2nd paragraph, the interpretation reads "...only if the protection trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element". From this statement, it appears that the intent is for both conditions to be satisfied (interruption of current from the BES AND the transformer being a part of the BES). In that event, with the transformer presumed to be a part of the BES, there would be no

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Voter	Entity	Segment	Vote	Comment
				<p>doubt as to the status of the associated protection system and no need for interpretation. However, the situation posed in the request is that of a radial transformer, and as such, the transformer itself would not likely be part of the BES at any rate, given the general radial exclusion in the present NERC definition of BES. As well, the radial nature of the transformer indicates that it may not even be considered to be a transmission element at all, but rather, distribution. We suggest a modification to the interpretation such that a Protection System be considered to be a transmission Protection System if it is installed for the purpose of detecting faults on transmission elements identified as being included in the BES, initiating action to clear the protected element from any source of energy.</p>
<p><b>Response:</b> The modification to the interpretation proposed by the commenter is substantially the same as the first interpretation developed by the drafting team. Based on industry input through the Standard Development Process the drafting team has modified the interpretation and believes the present version of the interpretation appropriately addresses reliability of the Bulk Electric System by including the phrase “<u>and</u> trips an interrupting device that interrupts current supplied directly from the BES.”</p>				
Anthony Schacher	Salem Electric	3	Negative	<p>The sytem protection devices have been installed to protect the substation transformers and distribution system downstream of the protection device, not the BES upstream. Therefore they should be exempt of the standard requirements</p>
<p><b>Response:</b> In order to be considered a “Transmission Protection System,” all three aspects of the interpretation must be met: (1) installed for the purpose of detecting Faults on Transmission Elements, (2) the protected Element is identified as included in the BES, and (3) trips an interrupting device that interrupts current supplied directly from the BES. Per the interpretation if the substation transformers and distribution system downstream of the protection device referenced by the commenter are not BES elements, then the protection systems installed for detecting Faults on these elements are not “transmission Protection Systems.”</p>				
Thomas C. Mielnik	MidAmerican Energy Co.	3	Negative	<p>We are concerned that the interpretation could be interpreted in a way that incorrectly leads to the conclusion that transformers with low side below 100 kV (and the transformer's sytem protection) are BES. Both windings need to be 100 kV and above to be considered to be BES.</p>
<p><b>Response:</b> The existing definition of Bulk Electric System is not changed by this interpretation and providing clarification regarding the definition of a BES transformer is outside the scope of the interpretation. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms).</p>				
Claudiu Cadar	GDS Associates, Inc.	1	Negative	<p>We do not support the interpretation of PRC-004-1 and PRC-005-1 requirements based on the following reasons:</p> <ul style="list-style-type: none"> <li>o Consistent with current reliability standards if the transmission line is radial in nature and</li> </ul>

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Voter	Entity	Segment	Vote	Comment
				<p>no other network customer is impacted when the protective device operates, then no transmission Protection System exists.</p> <p>o NERC interpretation suggests certain situations where the transformer connected to the BES in a load serving radial configuration would be also considered a BES element. Would the secondary voltage of the transformer at 100 kV or above be determinant to consider the transformer a BES element? The definition of BES states that “Radial transmission facilities serving only load with one transmission source are generally not included in this definition.” In load serving radial configurations the only party impacted by a potential transformer failure would be the customer and not the BES, so the transformer cannot be considered a BES element.</p> <p>o If a protection system exists for any other reason than fault protection of the Bulk Electric System, most of the times it would be categorized as a Special Protection System (i.e. preventing overload of a transformer or line based upon a contingent situation, etc.). Transfer trip schemes and blocking schemes react to faulted conditions, however we do not believe that non-BES elements would be considered part of a protection system unless the RC or TOP indicates that the portion of the transmission system would be critical.</p> <p>o We suggest to revise the interpretation of the term “transmission Protection System” in a more clear and concise form.</p> <p>o We consider that not only the transmission Protection System is in need of subsequent clarifications and clearness, but also the definition of BES. This argument resides on FERC Order 693 and FERC Docket No. RC09-3-000 related to the definition of BES where the Commission explained that “Although we are accepting the NERC definition of bulk electric system and NERC’s registration process for now, the Commission remains concerned about the need to address the potential gaps in coverage of facilities. For example, some current regional definitions of bulk electric system exclude facilities below 230 kV and transmission lines that serve major load centers such as Washington, DC and New York City. The Commission intends to address this matter in a future proceeding.[...]”.</p> <p>o Although the above argument may be considered beyond the scope of current interpretation, we consider that due to the related nature of the mentioned definitions, NERC may need to pursue additional steps for clarification rather than a simple term interpretation. The drafting team may consider proposing the addition of a new term such as “Transmission Protection System”, or to modify the existing “Protection System” definition and “Bulk Electric System” by case if found appropriate.</p>

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Voter	Entity	Segment	Vote	Comment
<p><b>Response:</b> The drafting team was not asked to provide an interpretation of when transformers or other elements would be considered BES elements. As such, discussion of whether radial transformers can be BES elements and whether winding voltage has a bearing on such determinations are outside the scope of this interpretation.</p> <p>The interpretation purposely makes reference to “to any Protection System that is installed for the purpose of detecting Faults on Transmission Elements” to exclude Special Protection Systems. The intent of the commenter’s reference to non-BES elements being considered part of a Protection System is not clear given the NERC Glossary definitions of Element (Any electrical device with terminals that may be connected to other electrical devices such as a generator, transformer, circuit breaker, bus section, or transmission line. An element may be comprised of one or more components.) and Protection System (Protective relays, associated communication systems, voltage and current sensing devices, station batteries and DC control circuitry.) are mutually exclusive.</p> <p>The drafting team acknowledges there are existing dockets that reference the definition of the BES. As contemplated by the commenter, however, the drafting team agrees that providing clarification regarding the definition of a “BES Element” is outside the scope of the interpretation. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms) and also will be applicable if a NERC-wide methodology for determining BES facilities is developed.</p>				
Timothy VanBlaricom	California ISO	2	Negative	We feel that a formal definition of 'transmission protection system' should be developed so that all RROs interpret the meaning in the same way.
<p><b>Response:</b> Development of a formal definition is outside the scope of the request for interpretation. If the commenter desires a formal definition a Standard Authorization Request (SAR) may be submitted requesting development of a formal definition.</p>				
Gregory L Pieper	Xcel Energy, Inc.	1	Negative	<p>Xcel Energy believes that this interpretation uses language that depends upon definition of BES elements (in this case transformers). How to determine if a transformer is classified as BES has not been clearly established (i.e. it is not clear as to if classification is based on high side or low side voltage). We believe it needs to be established how these boundary components and supporting systems (e.g. protection system) are classified in order to form a basis for the interpretation.</p>
Michael Ibold	Xcel Energy, Inc.	3	Negative	
Liam Noailles	Xcel Energy, Inc.	5	Negative	
David F. Lemmons	Xcel Energy, Inc.	6	Negative	
<p><b>Response:</b> Providing clarification regarding the definition of a “BES Element” is outside the scope of the interpretation. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms).</p>				

**Consideration of Comments on Initial Ballot of Interpretation for Y-W Electric Association, Inc. Tri-State Generation & Transmission Association, Inc. of PRC-004-1, Requirements R1 and R3 and PRC-005-1, Requirements R1 and R2**

Voter	Entity	Segment	Vote	Comment
John J. Moraski	Baltimore Gas & Electric Company	1	Affirmative	BGE is comfortable with the interpretation as written. Specifically, the scope of inclusion is now limited as below: ...a Transmission Protection System and subject to these standards only if the protection trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element The transformer in the class of substation we are concerned with is not a BES element.
<b>Response:</b> Thank you for your support.				
Russell A Noble	Cowlitz County PUD	3	Affirmative	Is the definition of a BES transformer understood? My understanding is both primary and secondary are at or above 100 kV. Also, it must also be noted that some transmission side current interrupters (circuit switchers) can't clear a full transmission fault. They are there to protect the transformer from high impedance internal transformer faults. Should a transmission full available current fault occur, the upstream BES breaker(s) must clear the fault.
<b>Response:</b> Thank you for your support. However, please note that providing clarification regarding the definition of a "BES transformer" is outside the scope of the interpretation. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms).				
Kevin Querry	FirstEnergy Solutions	3	Affirmative	No Comments
<b>Response:</b> Thank you for your support.				
Frank F. Afranji	Portland General Electric Co.	1	Affirmative	PGE agrees with the interpretation given by the System Protection and Controls Subcommittee. The protection system for a radially connected transformer should be considered a transmission Protective System since it interrupts current from the BES. If the transformer breaker was to misoperate, it could cause delayed tripping from the remaining transmission line breakers ultimately effectin the BES.
<b>Response:</b> Thank you for your support. Please note that as stated in the interpretation, the commenter's example would be considered a "Transmission Protection System" only if the protection trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element.				
Alan Gale	City of Tallahassee	5	Affirmative	TAL would like to thank the Drafting Team for their efforts. This is one example of how posting interpretations for industry comment prior to voting could shorten the overall process

**Consideration of Comments on Initial Ballot of Interpretation for Y-W Electric Association, Inc. Tri-State Generation & Transmission Association, Inc. of PRC-004-1, Requirements R1 and R3 and PRC-005-1, Requirements R1 and R2**

Voter	Entity	Segment	Vote	Comment
				and lead to consensus on the first vote.
<b>Response:</b> Thank you for your support.				
Kim Warren	Independent Electricity System Operator	2	Affirmative	The IESO appreciates the drafting team's thoughtful consideration of the points we had raised in the previous two ballots. We accept that there are imitations to the current interpretation process and therefore respectfully suggest that the drafting team include in the Reliability Standards Issues Database for future consideration, the issue of how uncleared faults on non-BES elements that may impact the BES, should be addressed in the reliability standards. We also wish to point out that this issue is fully addressed in the NPCC region by virtue of the performance-based methodology applied for defining the BES (BPS).
<b>Response:</b> Thank you for your support.				
Steve Alexanderson	Central Lincoln PUD	3	Affirmative	The new interpretation is an improvement over the last. We are still are baffled why the team did not include the NERC definition of "transmission" to show they are not creating a brand new definition. Perhaps comments included with affirmative ballots receive less attention than those with negative ballots. If so, this one may go unnoticed as well.
<b>Response:</b> Thank you for your support. The drafting team believes that simply linking the NERC Glossary defined terms "Transmission" and "Protection System" would not provide the level of clarity required to address this request for interpretation.				
James A Ziebarth	Y-W Electric Association, Inc.	4	Affirmative	Y-WEA appreciates the clarity that the drafting team put in this interpretation. This interpretation should bring about much more uniform understanding and enforcement of standards PRC-004-1 and PRC-005-1.
<b>Response:</b> Thank you for your support.				
Amir Y Hammad	Constellation Power Source Generation, Inc.	5	Abstain	Although this interpretation is reasonable when viewed between transmission and distribution elements, Constellation is concerned with this interpretation potentially being used for generation facilities connected to the BES. As an example, take a 10 MW generation facility connected at 115kV . This facility would not be part of the BES per the current definitions. However, as written, this interpretation would conclude that any protection of the step up transformer makes it part of the BES, even though the facility does not meet the BES criteria. Although this is not the intent of the interpretation, it is a potential consequence if applied

**Consideration of Comments on Initial Ballot of Interpretation for Y-W Electric Association, Inc. Tri-State Generation & Transmission Association, Inc. of PRC-004-1, Requirements R1 and R3 and PRC-005-1, Requirements R1 and R2**

Voter	Entity	Segment	Vote	Comment
				incorrectly.
<b>Response:</b> The drafting team agrees this example would be an incorrect application of the interpretation.				
Chuck B Manning	Electric Reliability Council of Texas, Inc.	2	Abstain	the interpretation does NOT clearly answer the question
<b>Response:</b> Y-W Electric Association, Inc. (Y-WEA) and Tri-State Generation and Transmission Association, Inc. (Tri-State) requested an interpretation of the term "transmission Protection System" and specifically whether protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System and is subject to these standards. The drafting team believes the interpretation clearly answers both the general and specific aspects of this request.				
Kent Saathoff	Electric Reliability Council of Texas, Inc.	10	Abstain	The question being asked is if the transformer protection system of a radially connected transformer, energized by the BES, is considered a BES transmission Protection System. The interpretation does not clearly state whether or not the transformer is part of the BES and further implies it may be some times but not all times, depending on how the transformer is cleared (separated from the transmission by the breaker vs. disconnecting the transformer and including clearing a section of transmission).
<b>Response:</b> The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms).				

**Consideration of Comments on Initial Ballot — Interpretation of PRC-004-1 and PRC-005-1 for Y-W Electric and Tri-State (Project 2009-17)**

**Date of Initial Ballot: November 19, 2010 – December 3, 2010**

**Summary Consideration:**

If you feel that the drafting team overlooked your comments, please let us know immediately. Our goal is to give every comment serious consideration in this process. If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Herb Schrayshuen, at 609-452-8060 or at [herb.schrayshuen@nerc.net](mailto:herb.schrayshuen@nerc.net). In addition, there is a NERC Reliability Standards Appeals Process.<sup>1</sup>

Voter	Entity	Segment	Vote	Comment
Paul B. Johnson	American Electric Power	1	Negative	The revised interpretation is a significant improvement and AEP appreciates the work by the drafting team. However, AEP feels the last sentence of the first paragraph of the interpretation could be improved from: "...trips an interrupting device that interrupts current supplied directly from the BES." to the following: "...trips an interrupting device (such as circuit breakers and circuit switchers) that interrupts current flowing through the networked BES." In addition, AEP feels the last sentence of the last paragraph of the interpretation could be improved from: "...trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element." to the following: "...trips an interrupting device (such as circuit breakers and circuit switchers) that interrupts current flowing through the networked BES and the transformer is a BES element."
John J. Moraski	Baltimore Gas & Electric Company	1	Affirmative	BGE is comfortable with the interpretation as written.
Eric Egge	Black Hills Corp	1	Negative	Black Hills Power respectfully votes against the interpretation because of the qualifiers 'that interrupts current supplied directly from the BES' and 'the transformer is a BES element'. These qualifiers force the issue of whether a transformer fed from a non-BES line can be considered a BES transformer. This issue arises because of disagreement of whether a radial transmission line tapped off the BES serving only load is part of the BES, and that question arises from different interpretation of what constitutes 'one' source or 'two' sources. Although the interpretation must be limited in scope to the standards affected, the original interpretation request from the submitting entities asks whether 'protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System'. Because the interpretation as written

<sup>1</sup> The appeals process is in the Reliability Standards Development Procedure: [http://www.nerc.com/files/RSDP\\_V6\\_1\\_12Mar07.pdf](http://www.nerc.com/files/RSDP_V6_1_12Mar07.pdf).



Voter	Entity	Segment	Vote	Comment
				does not allow the entities' question to be consistently and reliably answered, Black Hills Power is voting "No".
Danny McDaniel	Cleco Power LLC	1	Negative	Cleco respectively disagrees with the interpretation by the drafting team and the determination of a BES element should be clear and consistent across the continent. The definition of a BES element brings with it confusion when terms such as "generally" are used. In the example provided, one of the determinations should not be that the device interrupts current supplied directly from the BES but that the device interrupts current flowing between multiple BES substations or between a BES generator and a BES switchyard.
Paul Morland	Colorado Springs Utilities	1	Negative	The interpretation gives no clarity to the associated issue. The interpretation refers back to the "Bulk Electric System", which as yet has not been defined, and as such gives no clear indication on what an entity is to understand from this. Also, if a Distribution Transformer (serving radial load), is protected by fuses, a lower quality protection system, and not by transformer differential relay, with over current backup, it would not be required to comply. This seems backwards to the goal of improving the quality of the "Bulk Electric System", and will in the end encourage a lowering of the quality of the bulk electric system.
Dennis Minton	Florida Keys Electric Cooperative Assoc.	1	Negative	Radials should be exempted, provided there is no adverse material impact to the BES.
Claudiu Cadar	GDS Associates, Inc.	1	Negative	We do not support the interpretation of PRC-004-1 and PRC-005-1 requirements based on the following reasons: <ul style="list-style-type: none"> <li>o Consistent with current reliability standards if the transmission line is radial in nature and no other network customer is impacted when the protective device operates, then no transmission Protection System exists.</li> <li>o NERC interpretation suggests certain situations where the transformer connected to the BES in a load serving radial configuration would be also considered a BES element. Would the secondary voltage of the transformer at 100 kV or above be determinant to consider the transformer a BES element? The definition of BES states that "Radial transmission facilities serving only load with one transmission source are generally not included in this definition." In load serving radial configurations the only party impacted by a potential transformer failure would be the customer and not the BES, so the transformer cannot be considered a BES element.</li> <li>o If a protection system exists for any other reason than fault protection of the Bulk Electric System, most of the times it would be categorized as a Special Protection System (i.e. preventing overload of a transformer or line based upon a contingent situation, etc.). Transfer trip schemes and blocking schemes react to faulted conditions, however we do not believe that</li> </ul>

Voter	Entity	Segment	Vote	Comment
				<p>non-BES elements would be considered part of a protection system unless the RC or TOP indicates that the portion of the transmission system would be critical.</p> <ul style="list-style-type: none"> <li>o We suggest to revise the interpretation of the term “transmission Protection System” in a more clear and concise form.</li> <li>o We consider that not only the transmission Protection System is in need of subsequent clarifications and clearness, but also the definition of BES. This argument resides on FERC Order 693 and FERC Docket No. RC09-3-000 related to the definition of BES where the Commission explained that “Although we are accepting the NERC definition of bulk electric system and NERC’s registration process for now, the Commission remains concerned about the need to address the potential gaps in coverage of facilities. For example, some current regional definitions of bulk electric system exclude facilities below 230 kV and transmission lines that serve major load centers such as Washington, DC and New York City. The Commission intends to address this matter in a future proceeding.[...]”.</li> <li>o Although the above argument may be considered beyond the scope of current interpretation, we consider that due to the related nature of the mentioned definitions, NERC may need to pursue additional steps for clarification rather than a simple term interpretation. The drafting team may consider proposing the addition of a new term such as “Transmission Protection System”, or to modify the existing “Protection System” definition and “Bulk Electric System” by case if found appropriate.</li> </ul>
Michael Gammon	Kansas City Power & Light Co.	1	Affirmative	<p>Recommend the first paragraph in the interpretation make it clear this does not include transformer protection systems for transformers with secondary winding voltages less than 100kv. Please consider the following language. The request for interpretation of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2 focuses on the applicability of the term “transmission Protection System.” The NERC Glossary of Terms Used in Reliability Standards contains a definition of “Protection System” but does not contain a definition of transmission Protection System. In these two standards, use of the phrase transmission Protection System indicates that the requirements using this phrase are is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES and for transformers with secondary windings of 100kv or higher.</p>
Larry E Watt	Lakeland Electric	1	Negative	<p>a protection system installed on that non-BES transformer could be determined to be a "transmission Protection System" with this interpretation. This contradicts the example.</p>

Voter	Entity	Segment	Vote	Comment
Randi Woodward	Minnesota Power, Inc.	1	Negative	Further clarification is required regarding the definition of a "BES Element" (e.g., What is a BES transformer?). We propose the following definitions: - Non GSU transformers must have all windings (excluding tertiary windings) rated at 100kV and above in order to be classified as a BES transformer. - GSU transformers must have a primary winding rating at 100kV and above in order to be classified as a BES transformer.
Chifong L. Thomas	Pacific Gas and Electric Company	1	Negative	The interpretation applies Requirements R1 and R3 in PRC-004-1, and to 1 and R2 in PRC-005-1. PG&E is concerned that, as written, the interpretation could introduce confusion for the generator Protection System. The interpretation states, "a Protection System for a radially connected transformer energized from the BES would be considered a transmission Protection System and subject to these standards only if the protection trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element." However, from NERC Glossary of Terms, the definition of BES includes "the electrical generation resources, transmission lines, interconnections with neighboring systems, and associated equipment, generally operated at voltages of 100 kV or higher". Therefore, if a generator protection trips the generator, the generator protection system can also be deemed a transmission Protection System because the generator is included in the BES. PG&E suggests that the interpretation be modified to state, "a Protection System for a radially connected transformer, which serves only Load and energized from the BES, would be considered a transmission Protection System and subject to these standards only if the protection trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element."
Frank F. Afranji	Portland General Electric Co.	1	Affirmative	PGE agrees with the interpretation given by the System Protection and Controls Subcommittee. The protection system for a radially connected transformer should be considered a transmission Protective System since it interrupts current from the BES. If the transformer breaker was to misoperate, it could cause delayed tripping from the remaining transmission line breakers ultimately effectin the BES.
Robert Kondziolka	Salt River Project	1	Negative	The Interpretation does not answer the question asked. It bases its guidance on whether or not the transformer is a BES element. Determining whether the transformer is a BES element causes the confusion and inconsistencies we believe the Interpretation request wanted to resolve.
Rich Salgo	Sierra Pacific Power Co.	1	Negative	The Standards Drafting Team is commended for eliminating the elements of vagueness from the prior interpretation (use of "generally" and deferral to the Regional Entity for specific clarification). However, we disagree with a key concept of this version, that an applicable protection system would trip an interrupting device that interrupts current supplied directly from the BES. Focusing on the very purpose of a transmission protection system, the principle of inclusion of a

Voter	Entity	Segment	Vote	Comment
				<p>protection system in the subject standards applicability should revolve around whether the protection system detects and acts to isolate faults on transmission elements from any source of energy, not whether it interrupts current supplied from the BES. In the 2nd paragraph, the interpretation reads "...only if the protection trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element". From this statement, it appears that the intent is for both conditions to be satisfied (interruption of current from the BES AND the transformer being a part of the BES). In that event, with the transformer presumed to be a part of the BES, there would be no doubt as to the status of the associated protection system and no need for interpretation. However, the situation posed in the request is that of a radial transformer, and as such, the transformer itself would not likely be part of the BES at any rate, given the general radial exclusion in the present NERC definition of BES. As well, the radial nature of the transformer indicates that it may not even be considered to be a transmission element at all, but rather, distribution. We suggest a modification to the interpretation such that a Protection System be considered to be a transmission Protection System if it is installed for the purpose of detecting faults on transmission elements identified as being included in the BES, initiating action to clear the protected element from any source of energy.</p>
Horace Stephen Williamson	Southern Company Services, Inc.	1	Negative	<p>Recirculation Comment: We do not feel the response adequately addressed our reliability concern in the proposed interpretation. We continue to believe that 'any Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System' should be considered 'transmission Protection Systems' without any stipulation as to where they are installed or what they trip. The drafting team's response to our comment implies that low side equipment counts as part of the BES only if it fails to operate and impacts the BES reliability. What will be the criteria for determining the latter? Response to Original Comment: The drafting team believes the present interpretation appropriately addresses the reliability concern. In the commenter's example, if a failure to interrupt the Fault current from the 69 kV system resulted in a reliability concern the 69 kV Elements could be identified as BES Elements. Original Comment: Although we are in agreement with the first part of the definition that has been proposed for the phrase 'transmission Protection System' as "any Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System" we do not concur with the modification to the qualifier noted as 'and trips an interrupting device that interrupts current supplied directly from the BES'. We feel that the original applicability to 'and initiates action to clear the protected element from all local sources' more accurately addresses the transmission reliability</p>

Voter	Entity	Segment	Vote	Comment
				concerns. As now proposed, a 230/69-kV facility that is interconnected with other non- BES 69-kV sources (other substations or generation facilities) and has Protection Systems installed to detect faults on the 230-kV source (. . Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System..) and trips a 69-kV device, would not be included since it isn't tripping a device ' that interrupts current supplied directly from the BES'.
Keith V. Carman	Tri-State G & T Association, Inc.	1	Affirmative	Tri-State would like to point out that key to the interpretation is the condition that to be considered part of the "transmission Protection System" is that "the transformer is a BES element." Tri-State believes that a typical transformer that transforms from transmission voltage to distribution voltage is not a "BES element."
Gregory L Pieper	Xcel Energy, Inc.	1	Negative	Xcel Energy believes that this interpretation uses language that depends upon definition of BES elements (in this case transformers). How to determine if a transformer is classified as BES has not been clearly established (i.e. it is not clear as to if classification is based on high side or low side voltage). We believe it needs to be established how these boundary components and supporting systems (e.g. protection system) are classified in order to form a basis for the interpretation.
Timothy VanBlaricom	California ISO	2	Negative	We feel that a formal definition of 'transmission protection system' should be developed so that all RROs interpret the meaning in the same way.
Chuck B Manning	Electric Reliability Council of Texas, Inc.	2	Abstain	the interpretation does NOT clearly answer the question
Kim Warren	Independent Electricity System Operator	2	Affirmative	The IESO appreciates the drafting team's thoughtful consideration of the points we had raised in the previous two ballots. We accept that there are imitations to the current interpretation process and therefore respectfully suggest that the drafting team include in the Reliability Standards Issues Database for future consideration, the issue of how uncleared faults on non-BES elements that may impact the BES, should be addressed in the reliability standards. We also wish to point out that this issue is fully addressed in the NPCC region by virtue of the performance-based methodology applied for defining the BES (BPS).
Richard J. Mandes	Alabama Power Company	3	Negative	Recirculation Comment: We do not feel the response adequately addressed our reliability concern in the proposed interpretation. We continue to believe that 'any Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System' should be considered 'transmission Protection Systems' without any stipulation as to where they are installed or what they trip. The drafting team's response to our comment implies that low side equipment counts as part of the BES only if it fails to

Voter	Entity	Segment	Vote	Comment
				<p>operate and impacts the BES reliability. What will be the criteria for determining the latter? Response to Original Comment: The drafting team believes the present interpretation appropriately addresses the reliability concern. In the commenter's example, if a failure to interrupt the Fault current from the 69 kV system resulted in a reliability concern the 69 kV Elements could be identified as BES Elements.</p> <p>Original Comment: Although we are in agreement with the first part of the definition that has been proposed for the phase 'transmission Protection System' as "any Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System" we do not concur with the modification to the qualifier noted as 'and trips an interrupting device that interrupts current supplied directly from the BES'. We feel that the original applicability to 'and initiates action to clear the protected element from all local sources' more accurately addresses the transmission reliability concerns. As now proposed, a 230/69-kV facility that is interconnected with other non- BES 69-kV sources (other substations or generation facilities) and has Protection Systems installed to detect faults on the 230-kV source (.. Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System..) and trips a 69-kV device, would not be included since it isn't tripping a device ' that interrupts current supplied directly from the BES'.</p>
Raj Rana	American Electric Power	3	Negative	<p>The revised interpretation is a significant improvement and AEP appreciates the work by the drafting team. However, AEP feels the last sentence of the first paragraph of the interpretation could be improved from: "...trips an interrupting device that interrupts current supplied directly from the BES." to the following: "...trips an interrupting device (such as circuit breakers and circuit switchers) that interrupts current flowing through the networked BES." In addition, AEP feels the last sentence of the last paragraph of the interpretation could be improved from: "...trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element." to the following: "...trips an interrupting device (such as circuit breakers and circuit switchers) that interrupts current flowing through the networked BES and the transformer is a BES element."</p>
Steve Alexanderson	Central Lincoln PUD	3	Affirmative	<p>The new interpretation is an improvement over the last. We are still are baffled why the team did not include the NERC definition of "transmission" to show they are not creating a brand new definition. Perhaps comments included with affirmative ballots receive less attention than those with negative ballots. If so, this one may go unnoticed as well.</p>
Bryan Y Harper	Cleco Utility Group	3	Negative	<p>Cleco respectively disagrees with the interpretation by the drafting team and the determination of a BES element should be clear and consistent across the continent. The definition of a BES element brings with it confusion when terms</p>

Voter	Entity	Segment	Vote	Comment
				such as "generally" are used. In the example provided, one of the determinations should not be that the device interrupts current supplied directly from the BES but that the device interrupts current flowing between multiple BES substations or between a BES generator and a BES switchyard.
Kevin Querry	FirstEnergy Solutions	3	Affirmative	No Comments
Anthony L Wilson	Georgia Power Company	3	Negative	<p>Recirculation Comment: We do not feel the response adequately addressed our reliability concern in the proposed interpretation. We continue to believe that 'any Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System' should be considered 'transmission Protection Systems' without any stipulation as to where they are installed or what they trip. The drafting team's response to our comment implies that low side equipment counts as part of the BES only if it fails to operate and impacts the BES reliability. What will be the criteria for determining the latter? Response to Original Comment: The drafting team believes the present interpretation appropriately addresses the reliability concern. In the commenter's example, if a failure to interrupt the Fault current from the 69 kV system resulted in a reliability concern the 69 kV Elements could be identified as BES Elements.</p> <p>Original Comment: Although we are in agreement with the first part of the definition that has been proposed for the phase 'transmission Protection System' as "any Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System" we do not concur with the modification to the qualifier noted as 'and trips an interrupting device that interrupts current supplied directly from the BES'. We feel that the original applicability to 'and initiates action to clear the protected element from all local sources' more accurately addresses the transmission reliability concerns. As now proposed, a 230/69-kV facility that is interconnected with other non- BES 69-kV sources (other substations or generation facilities) and has Protection Systems installed to detect faults on the 230-kV source (.. Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System..) and trips a 69-kV device, would not be included since it isn't tripping a device ' that interrupts current supplied directly from the BES'.</p>
Gwen S Frazier	Gulf Power Company	3	Negative	Although we are in agreement with the first part of the definition that has been proposed for the phase 'transmission Protection System' as "any Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System" we do not concur with the modification to the qualifier noted as 'and trips an interrupting device that

Voter	Entity	Segment	Vote	Comment
				interrupts current supplied directly from the BES'. We feel that the original applicability to 'and initiates action to clear the protected element from all local sources' more accurately addresses the transmission reliability concerns. As now proposed, a 230/69-kV facility that is interconnected with other non- BES 69-kV sources (other substations or generation facilities) and has Protection Systems installed to detect faults on the 230-kV source (.. Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System..) and trips a 69-kV device, would not be included since it isn't tripping a device ' that interrupts current supplied directly from the BES'.
Charles Locke	Kansas City Power & Light Co.	3	Affirmative	Recommend the first paragraph in the interpretation make it clear this does not include transformer protection systems for transformers with secondary winding voltages less than 100kv. Please consider the following language. The request for interpretation of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2 focuses on the applicability of the term "transmission Protection System." The NERC Glossary of Terms Used in Reliability Standards contains a definition of "Protection System" but does not contain a definition of transmission Protection System. In these two standards, use of the phrase transmission Protection System indicates that the requirements using this phrase are is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES and for transformers with secondary windings of 100kv or higher.
Bruce Merrill	Lincoln Electric System	3	Negative	Further clarification is required regarding the definition of a "BES element" (e.g., What is a BES transformer?). Receiving current from the BES is not a suitable criterion for applicability. As currently written 115kV/12kV distribution transformers would incorrectly be classified as a BES element because they receive current from the BES. We propose the following definitions: Non-GSU transformers must have all windings (excluding the tertiary winding) rated at 100kV and above in order to be classified to be a BES transformer. GSU transformers must have a primary winding rated at 100kV and above in order to be classified to be a BES transformer.
Thomas C. Mielnik	MidAmerican Energy Co.	3	Negative	We are concerned that the interpretation could be interpreted in a way that incorrectly leads to the conclusion that transformers with low side below 100 kV (and the transformer's sytem protection) are BES. Both windings need to be 100 kV and above to be considered to be BES.
Don Horsley	Mississippi Power	3	Negative	Recirculation Comment: We do not feel the response adequately addressed our reliability concern in the proposed interpretation. We continue to believe that 'any Protection System that is installed for the purpose of detecting faults on



Voter	Entity	Segment	Vote	Comment
				<p>transmission elements identified as being included in the Bulk Electric System' should be considered 'transmission Protection Systems' without any stipulation as to where they are installed or what they trip. The drafting team's response to our comment implies that low side equipment counts as part of the BES only if it fails to operate and impacts the BES reliability. What will be the criteria for determining the latter? Response to Original Comment: The drafting team believes the present interpretation appropriately addresses the reliability concern. In the commenter's example, if a failure to interrupt the Fault current from the 69 kV system resulted in a reliability concern the 69 kV Elements could be identified as BES Elements. Original Comment: Although we are in agreement with the first part of the definition that has been proposed for the phase 'transmission Protection System' as "any Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System" we do not concur with the modification to the qualifier noted as 'and trips an interrupting device that interrupts current supplied directly from the BES'. We feel that the original applicability to 'and initiates action to clear the protected element from all local sources' more accurately addresses the transmission reliability concerns. As now proposed, a 230/69-kV facility that is interconnected with other non- BES 69-kV sources (other substations or generation facilities) and has Protection Systems installed to detect faults on the 230-kV source (.. Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System..) and trips a 69-kV device, would not be included since it isn't tripping a device ' that interrupts current supplied directly from the BES'.</p>
Anthony Schacher	Salem Electric	3	Negative	The system protection devices have been installed to protect the substation transformers and distribution system downstream of the protection device, not the BES upstream. Therefore they should be exempt of the standard requirements
John T. Underhill	Salt River Project	3	Negative	The Interpretation does not answer the question asked. It bases its guidance on whether or not the transformer is a BES element. Determining whether the transformer is a BES element causes the confusion and inconsistencies we believe the Interpretation request wanted to resolve.
James R. Keller	Wisconsin Electric Power Marketing	3	Negative	The Comment Period and Ballot Period should not overlap. The industry and Standard Drafting Team should have opportunity to review comments prior to a ballot.
Gregory J Le Grave	Wisconsin Public Service Corp.	3	Affirmative	The interpretation needs to be further clarified to state: BES transformers are defined as: Generator step-up transformers that have high side voltage of 100Kv or greater. Or Transformers that have a high and low side voltages of 100Kv or greater.

Voter	Entity	Segment	Vote	Comment
Michael Ibold	Xcel Energy, Inc.	3	Negative	Xcel Energy believes that this interpretation uses language that depends upon definition of BES elements (in this case transformers). How to determine if a transformer is classified as BES has not been clearly established (i.e. it is not clear as to if classification is based on high side or low side voltage). We believe it needs to be established how these boundary components and supporting systems (e.g. protection system) are classified in order to form a basis for the interpretation.
Anthony Jankowski	Wisconsin Energy Corp.	4	Negative	The interpretation is contrary to the NERC BES definition and the RFC BES definition.
James A Ziebarth	Y-W Electric Association, Inc.	4	Affirmative	Y-WEA appreciates the clarity that the drafting team put in this interpretation. This interpretation should bring about much more uniform understanding and enforcement of standards PRC-004-1 and PRC-005-1.
George Tatar	Black Hills Corp	5	Negative	BHP voted No because of the qualifiers "that interrupts current supplied directly from the BES' and 'the transformer is a BES element". These qualifiers force the issue of whether a transformer fed from a non-BES line can be considered a BES transformer. Because the interpretation, as written, does not allow the entities question to be consistently and reliably answered, BHP is voting NO.
Amir Y Hammad	Constellation Power Source Generation, Inc.	5	Abstain	Although this interpretation is reasonable when viewed between transmission and distribution elements, Constellation is concerned with this interpretation potentially being used for generation facilities connected to the BES. As an example, take a 10 MW generation facility connected at 115kV . This facility would not be part of the BES per the current definitions. However, as written, this interpretation would conclude that any protection of the step up transformer makes it part of the BES, even though the facility does not meet the BES criteria. Although this is not the intent of the interpretation, it is a potential consequence if applied incorrectly.
Scott Heidtbrink	Kansas City Power & Light Co.	5	Affirmative	Recommend the first paragraph in the interpretation make it clear this does not include transformer protection systems for transformers with secondary winding voltages less than 100kv. Please consider the following language. The request for interpretation of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2 focuses on the applicability of the term "transmission Protection System." The NERC Glossary of Terms Used in Reliability Standards contains a definition of "Protection System" but does not contain a definition of transmission Protection System. In these two standards, use of the phrase transmission Protection System indicates that the requirements using this phrase are is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES and for transformers with secondary windings of 100kv or higher.

Voter	Entity	Segment	Vote	Comment
Glen Reeves	Salt River Project	5	Negative	The Interpretation does not answer the question asked. It bases its guidance on whether or not the transformer is a BES element. Determining whether the transformer is a BES element causes the confusion and inconsistencies we believe the Interpretation request wanted to resolve.
Karl Bryan	U.S. Army Corps of Engineers Northwestern Division	5	Negative	The interpretation does not clearly answer the question posed by the "request for interpretation". The intent of the Reliability Standards is to have one set of rules for the BES and yet the Regional Entities appear to be carving out exceptions that are going beyond the intent of a reliable BES. In regards to this particular issue, either the transformer feeding a radial load is in or out of the BES and the disparity amongst the REs (RFirst and WECC) needs to be fixed.
Linda Horn	Wisconsin Electric Power Co.	5	Negative	The Comment Period and Ballot Period should not overlap. The industry and Standard Drafting Team should have opportunity to review comments prior to a ballot.
Liam Noailles	Xcel Energy, Inc.	5	Negative	Xcel Energy believes that this interpretation uses language that depends upon definition of BES elements (in this case transformers). How to determine if a transformer is classified as BES has not been clearly established (i.e. it is not clear as to if classification is based on high side or low side voltage). We believe it needs to be established how these boundary components and supporting systems (e.g. protection system) are classified in order to form a basis for the interpretation.
Edward P. Cox	AEP Marketing	6	Negative	The revised interpretation is a significant improvement and AEP appreciates the work by the drafting team. However, AEP feels the last sentence of the first paragraph of the interpretation could be improved from: "...trips an interrupting device that interrupts current supplied directly from the BES." to the following: "...trips an interrupting device (such as circuit breakers and circuit switchers) that interrupts current flowing through the networked BES." In addition, AEP feels the last sentence of the last paragraph of the interpretation could be improved from: "...trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element." to the following: "...trips an interrupting device (such as circuit breakers and circuit switchers) that interrupts current flowing through the networked BES and the transformer is a BES element."
Matthew D Cripps	Cleco Power LLC	6	Negative	Cleco respectively disagrees with the interpretation by the drafting team and the determination of a BES element should be clear and consistent across the continent. The definition of a BES element brings with it confusion when terms such as "generally" are used. In the example provided, one of the determinations should not be that the device interrupts current supplied directly from the BES but that the device interrupts current flowing between multiple BES substations or between a BES generator and a BES switchyard.

Voter	Entity	Segment	Vote	Comment
Eric Ruskamp	Lincoln Electric System	6	Negative	Further clarification is required regarding the definition of a "BES element" (e.g., What is a BES transformer?). Receiving current from the BES is not a suitable criterion for applicability. As currently written 115kV/12kV distribution transformers would incorrectly be classified as a BES element because they receive current from the BES. We propose the following definitions: Non-GSU transformers must have all windings (excluding the tertiary winding) rated at 100kV and above in order to be classified to be a BES transformer. GSU transformers must have a primary winding rated at 100kV and above in order to be classified to be a BES transformer.
David F. Lemmons	Xcel Energy, Inc.	6	Negative	Xcel Energy believes that this interpretation uses language that depends upon definition of BES elements (in this case transformers). How to determine if a transformer is classified as BES has not been clearly established (i.e. it is not clear as to if classification is based on high side or low side voltage). We believe it needs to be established how these boundary components and supporting systems (e.g. protection system) are classified in order to form a basis for the interpretation.
Kent Saathoff	Electric Reliability Council of Texas, Inc.	10	Abstain	The question being asked is if the transformer protection system of a radially connected transformer, energized by the BES, is considered a BES transmission Protection System. The interpretation does not clearly state whether or not the transformer is part of the BES and further implies it may be some times but not all times, depending on how the transformer is cleared (separated from the transmission by the breaker vs. disconnecting the transformer and including clearing a section of transmission).
Dan R. Schoenecker	Midwest Reliability Organization	10	Negative	Further clarification is required regarding the definition of a "BES element" (e.g., What is a BES transformer?). Receiving current from the BES is not a suitable criterion for applicability. As currently written 115kV/12kV distribution transformers would incorrectly be classified as a BES element because they receive current from the BES.

End of Report

## **Exhibit D**

### **Complete Record of Development of the Interpretations**

## Project 2009-17

### Interpretation of PRC-004-1 and PRC-005-1 for Y-W Electric and Tri-State

**Status:**

Approved by the Board of Trustees on February 17, 2011.

**Summary:**

On March 25, 2009, Y-W Electric Association, Inc. (Y-WEA) and Tri-State Generation and Transmission Association, Inc. (Tri-State) requested an interpretation of the term "transmission Protection System" as used in requirements R1 and R3 of PRC-004-1 and requirements R1 and R2 of PRC-005-1. Specifically, the interpretation seeks to clarify whether protection for a radically-connected transformer protection system energized from the BES is considered a transmission Protection System and is subject to these standards.

Draft	Action	Dates	Results	Consideration of Comments
<p>Y-W Electric and Tri-State G &amp; T Interpretation of PRC-004-1 and PRC-005-1</p> <p>PRC-004-1a  <a href="#">Clean(28)</a>   <a href="#">Redline to last approval(29)</a></p> <p>PRC-005-1a  <a href="#">Clean(26)</a>   <a href="#">Redline to last approval(27)</a></p>	BOT Adoption			
<p>Y-W Electric and Tri-State G &amp; T Interpretation of PRC-004-1 and PRC-005-1</p> <p>Revised Interpretation  <a href="#">Clean(15)</a>   <a href="#">Redline to last balloted (16)</a></p>	Recirculation Ballot  <a href="#">Info(22)</a>   <a href="#">Vote&gt;&gt;</a>	11/19/10 - 12/03/10 (closed)	<a href="#">Summary(24)</a>  <a href="#">Full Record(23)</a>	Consideration of Comments <b>(25)</b>
	Initial Ballot  <a href="#">Info(18)</a>   <a href="#">Vote&gt;&gt;</a>	04/28/10 - 05/10/10 (closed)	<a href="#">Summary(20)</a>  <a href="#">Full Record(19)</a>	Consideration of Comments <b>(21)</b>
	Pre-ballot	03/29/10 -		

	Review <a href="#">Info(17)</a>   <a href="#">Join&gt;&gt;</a>	04/28/10 (closed)		
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Y-W Electric and Tri-State G & T Interpretation of PRC-004-1 and PRC-005-1  Revised Interpretation <a href="#">Clean(8)</a>   <a href="#">Redline to last balloted(9)</a>	Initial Ballot <a href="#">Info(11)</a>   <a href="#">Vote&gt;&gt;</a>	11/19/09 - 12/07/09 (closed)	<a href="#">Summary(13)</a> <a href="#">Full Record(12)</a>	<a href="#">Consideration of Comments(14)</a>
	Pre-ballot Review <a href="#">Info(10)</a>   <a href="#">Join&gt;&gt;</a>	10/20/09 - 11/19/09 (closed)		



Y-W Electric and Tri-State G & T Interpretation of PRC-004-1 and PRC-005-1  <a href="#">Interpretation(2)</a>  <a href="#">Request for Interpretation(1)</a>	Initial Ballot <a href="#">Info(4)</a>   <a href="#">Vote&gt;&gt;</a>	07/31/09 - 08/10/09 (closed)	<a href="#">Summary(6)</a> <a href="#">Full Record(5)</a>	<a href="#">Consideration of Comments(7)</a>
	Pre-ballot Review <a href="#">Info(3)</a>   <a href="#">Join&gt;&gt;</a>	06/30/09 - 07/31/09 (closed)		

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

Request for an Interpretation of a Reliability Standard	
<b>Date submitted:</b> <a href="#">March 25, 2009</a>	
<b>Contact information for person requesting the interpretation:</b>	
<b>Name:</b>	<a href="#">James A. Ziebarth</a> <a href="#">T. William Middaugh</a>
<b>Organization:</b> <a href="#">Y-W Electric Association, Inc.</a> <a href="#">Tri-State Generation &amp; Transmission Association, Inc.</a>	
<b>Telephone:</b>	<a href="#">(970) 345-2291</a> <a href="#">(303) 254-3433</a>
<b>E-mail:</b>	<a href="mailto:james@hea.coop">james@hea.coop</a> <a href="mailto:bmiddaugh@tristategt.org">bmiddaugh@tristategt.org</a>
<b>Identify the standard that needs clarification:</b>	
<b>Standard Number (include version number):</b> <a href="#">PRC-004-1</a> and <a href="#">PRC-005-1</a>	
<b>Standard Title:</b> <a href="#">Analysis &amp; Mitigation of Transmission/Generation Protection System Misoperations; Transmission &amp; Generation Protection System Maintenance &amp; Testing</a>	
<b>Identify specifically what needs clarification</b>	
<b>Requirement Number and Text of Requirement:</b>	
<b>In Standard <a href="#">PRC-004-1</a>:</b>	
<p><b>R1.</b> The Transmission Owner and any Distribution Provider that owns a transmission Protection System shall each analyze its transmission Protection System Misoperations and shall develop and implement a Corrective Action Plan to avoid future Misoperations of a similar nature according to the Regional Reliability Organization's procedures developed for Reliability Standard PRC-003 Requirement 1.</p> <p><b>R3.</b> The Transmission Owner, any Distribution Provider that owns a transmission Protection System, and the Generator Owner shall each provide to its Regional Reliability Organization, documentation of its Misoperations analyses and Corrective Action Plans according to the Regional Reliability Organization's procedures developed for PRC-003 R1.</p>	
<b>In Standard <a href="#">PRC-005-1</a>:</b>	
<p><b>R1.</b> Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall have a Protection System maintenance and testing program for Protection Systems that affect the reliability of the BES. The program shall include:</p> <p><b>R1.1.</b> Maintenance and testing intervals and their basis.</p>	



**R1.2.** Summary of maintenance and testing procedures.

**R2.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization on request (within 30 calendar days). The documentation of the program implementation shall include:

**R2.1.** Evidence Protection System devices were maintained and tested within the defined intervals.

**R2.2.** Date each Protection System device was last tested/maintained.

**Clarification needed:**

Y-W Electric Association, Inc. (Y-WEA) and Tri-State Generation and Transmission Association, Inc. (Tri-State) respectfully request an interpretation of the term "transmission Protection System" and specifically whether protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System and is subject to these standards.

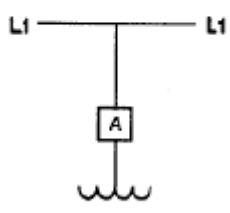
**Background:**

The requirements above from PRC-004-1 and PRC-005-1 refer to "the Transmission Owner and any Distribution Provider that owns a transmission Protection System" and place various testing and reporting requirements on these entities. The term "Protection System" is defined in the NERC glossary, and other interpretation requests currently under consideration cover the fine details of what this term means. However, these standards narrow the scope of their applicability to "transmission" Protection Systems. Unfortunately, this narrowing causes much confusion as to the applicability of these standards because the entire term "Transmission Protection System" is not defined anywhere in NERC's documentation.

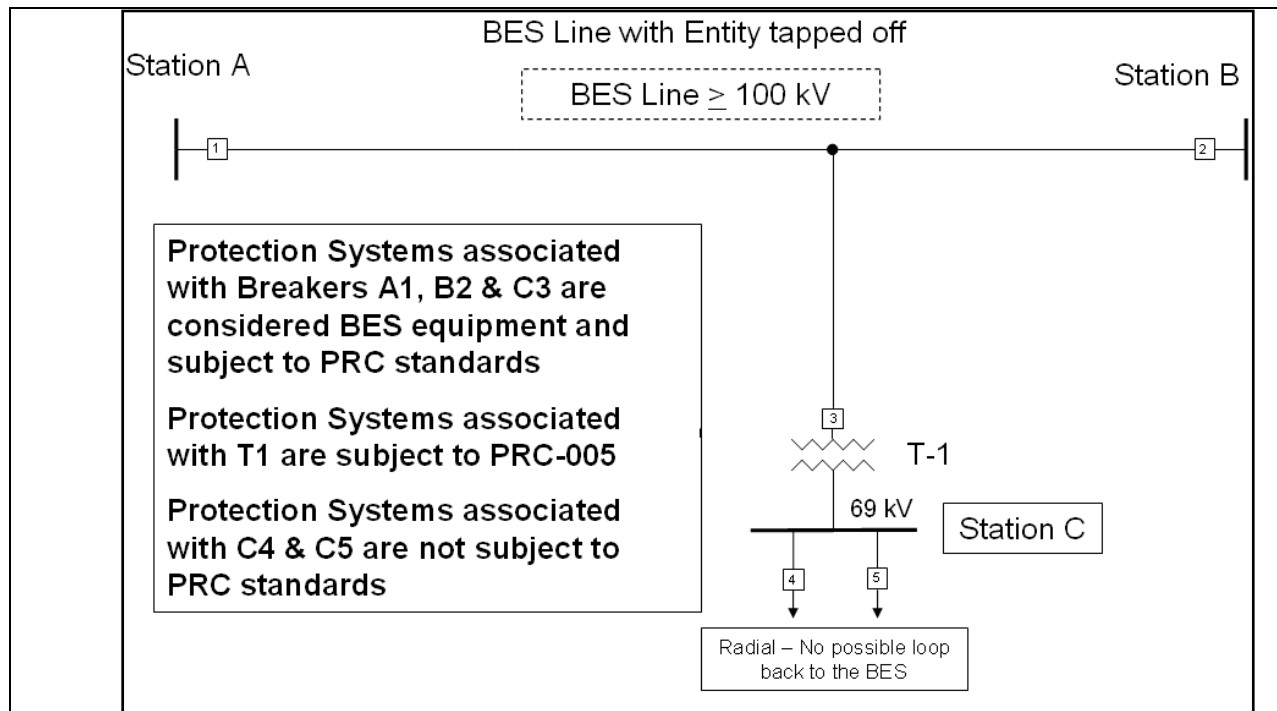
There is some debate as to what constitutes a transmission Protection System, versus any other Protection System. For example, consider a tap from a looped 115 kV transmission system where this tap consists of a step-down power transformer and its associated distribution system. The Protection System includes the transformer protection equipment (overcurrent and differential relaying with a circuit switcher) and the associated distribution system protection equipment (usually reclosers). For this example, all connected distribution facilities are designed to be radial in nature and are normally operated radially, with only the possibility of being briefly connected in parallel with other distribution facilities during switching to feed this load from another substation while this substation is taken out of service.

In this example, the looped 115 kV transmission system may be part of the Bulk Electric System and its protective relays and breakers located at the endpoints of this line section would be considered transmission Protection Systems and be subject to these standards. The status of the transformer protection equipment is unclear, though. The protective relays and the circuit switcher are connected at or attached to equipment that is connected at 115 kV, but this equipment is essentially connected to the BES radially, serves radial load, and is not necessarily designed to protect the transmission system to which it is connected. In fact, in many cases this equipment is designed strictly to protect the transformer from overloads and through-faults relating to the connected distribution system as well as to minimize transformer damage resulting from internal faults by rapidly de-energizing the transformer for such internal faults.

There is a lack of consistent application or interpretation of these rules between various Regional Entities. For instance, ReliabilityFirst Corporation's Appendix A to their Bulk Electric System Definition shown below (available at <http://www.rfirst.org/Documents/AboutUs/Members/RFC%20BES%20Definition.pdf>) directly addresses this question, indicating that the transformer protection equipment in the above example would not be considered a transmission Protection System.

ReliabilityFirst Corp.	Bulk Electric System Definition
<b>Example 1B:</b> In another example, if a 138/12.47 kV distribution transformer is tapped from a networked 138 kV line which is included in the BES, and that transformer has protective relays (such as differential relays) that trip <u>only</u> the distribution transformer out-of-service and do not trip the networked 138 kV line; then those protective relays are <u>not included</u> as part of the BES definition. Breaker failure relaying on Breaker A, if any, is included if operation results in tripping of the networked 138kV line (Reference Diagram 1B.)	
	
Diagram 1B	
Relays protecting non-BES facility (e.g. transformer with secondary windings less than 100 kV) and tripping Breaker A are <u>not included</u> as part of BES.	

However, slide 42 of Western Electricity Coordinating Council's PowerPoint presentation from their August 12, 2008 Relay Workshop (available at <http://www.wecc.biz/documents/library/compliance/2008/2008%2008%2012%20-%20Relay%20Workshop%20-%20Portland,%20OR%20-%20Presentation.ppt>) and shown below, also directly addresses this question, indicating that the equipment in the example above would be considered a transmission Protection System and would be subject to PRC-004-1 and PRC-005-1.



These issues stem from the fact that the term "transmission Protection System" is not clearly defined.

**Identify the material impact associated with this interpretation:**

**Identify the material impact to your organization or others caused by the lack of clarity or an incorrect interpretation of this standard.**

Depending upon the interpreted definition of the term "transmission Protection System," Y-WEA and other Tri-State members who are Distribution Providers and own substations connecting to the BES for power delivery from a wholesale provider as well as Tri-State and other Transmission Owners could be directly and materially affected by these standards. Y-WEA and other Tri-State members are compliant with these NERC standards. We believe the applicability of WECC's more stringent interpretation must be clarified for uniform enforcement.

Alleged violations from a WECC audit where these standards were not thought to be applicable could result in sanctions and civil penalties.

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

Request for an Interpretation of a Reliability Standard	
<b>Date submitted:</b> <a href="#">March 25, 2009</a>	
<b>Contact information for person requesting the interpretation:</b>	
<b>Name:</b>	<a href="#">James A. Ziebarth</a> <a href="#">T. William Middaugh</a>
<b>Organization:</b> <a href="#">Y-W Electric Association, Inc.</a> <a href="#">Tri-State Generation &amp; Transmission Association, Inc.</a>	
<b>Telephone:</b>	<a href="#">(970) 345-2291</a> <a href="#">(303) 254-3433</a>
<b>E-mail:</b>	<a href="mailto:james@hea.coop">james@hea.coop</a> <a href="mailto:bmiddaugh@tristategt.org">bmiddaugh@tristategt.org</a>
<b>Identify the standard that needs clarification:</b>	
<b>Standard Number (include version number):</b> <a href="#">PRC-004-1</a> and <a href="#">PRC-005-1</a>	
<b>Standard Title:</b> <a href="#">Analysis &amp; Mitigation of Transmission/Generation Protection System Misoperations; Transmission &amp; Generation Protection System Maintenance &amp; Testing</a>	
<b>Identify specifically what needs clarification</b>	
<b>Requirement Number and Text of Requirement:</b>	
<b>In Standard <a href="#">PRC-004-1</a>:</b>	
<p><b>R1.</b> The Transmission Owner and any Distribution Provider that owns a transmission Protection System shall each analyze its transmission Protection System Misoperations and shall develop and implement a Corrective Action Plan to avoid future Misoperations of a similar nature according to the Regional Reliability Organization's procedures developed for Reliability Standard <a href="#">PRC-003</a> Requirement 1.</p> <p><b>R3.</b> The Transmission Owner, any Distribution Provider that owns a transmission Protection System, and the Generator Owner shall each provide to its Regional Reliability Organization, documentation of its Misoperations analyses and Corrective Action Plans according to the Regional Reliability Organization's procedures developed for <a href="#">PRC-003</a> R1.</p>	
<b>In Standard <a href="#">PRC-005-1</a>:</b>	
<p><b>R1.</b> Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall have a Protection System maintenance and testing program for</p>	

Protection Systems that affect the reliability of the BES. The program shall include:

**R1.1.** Maintenance and testing intervals and their basis.

**R1.2.** Summary of maintenance and testing procedures.

**R2.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization on request (within 30 calendar days). The documentation of the program implementation shall include:

**R2.1.** Evidence Protection System devices were maintained and tested within the defined intervals.

**R2.2.** Date each Protection System device was last tested/maintained.

**Clarification needed:**

Y-W Electric Association, Inc. (Y-WEA) and Tri-State Generation and Transmission Association, Inc. (Tri-State) respectfully request an interpretation of the term "transmission Protection System" and specifically whether protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System and is subject to these standards.

**Background:**

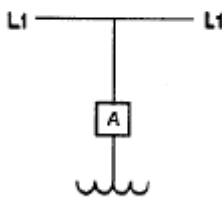
The requirements above from PRC-004-1 and PRC-005-1 refer to "the Transmission Owner and any Distribution Provider that owns a transmission Protection System" and place various testing and reporting requirements on these entities. The term "Protection System" is defined in the NERC glossary, and other interpretation requests currently under consideration cover the fine details of what this term means. However, these standards narrow the scope of their applicability to "transmission" Protection Systems. Unfortunately, this narrowing causes much confusion as to the applicability of these standards because the entire term "Transmission Protection System" is not defined anywhere in NERC's documentation.

There is some debate as to what constitutes a transmission Protection System, versus any other Protection System. For example, consider a tap from a looped 115 kV transmission system where this tap consists of a step-down power transformer and its associated distribution system. The Protection System includes the transformer protection equipment (overcurrent and differential relaying with a circuit switcher) and the associated distribution system protection equipment (usually reclosers). For this example, all connected distribution facilities are designed to be radial in nature and are normally operated radially, with only the possibility of being briefly connected in parallel with other distribution facilities during switching to feed this load from another substation while this substation is taken out of service.

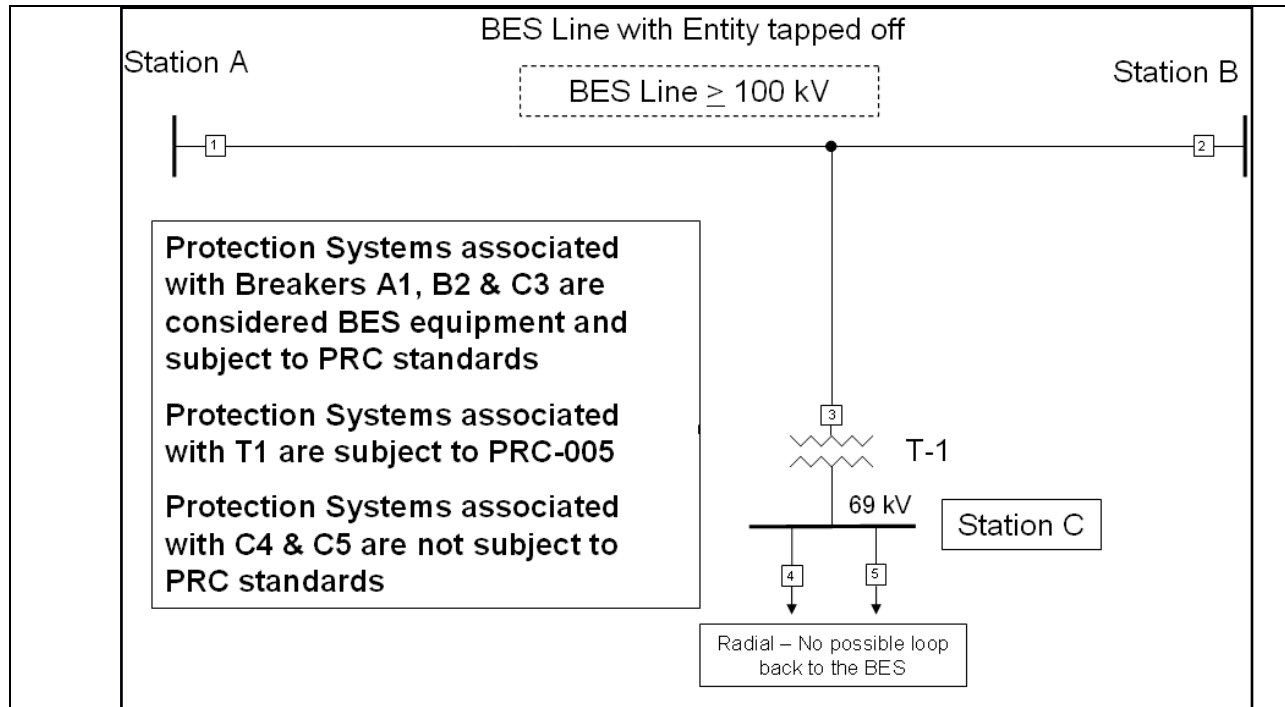
In this example, the looped 115 kV transmission system may be part of the Bulk Electric System and its protective relays and breakers located at the endpoints of this line section would be considered transmission Protection Systems and be subject to these standards. The status of the transformer protection equipment is unclear, though. The protective relays and the circuit switcher are connected at or attached to equipment that is connected at 115 kV, but this equipment is essentially connected to the BES radially, serves radial load, and is not necessarily designed to protect the transmission system to which it is connected. In fact, in many cases this equipment is designed strictly to protect the transformer from overloads and

through-faults relating to the connected distribution system as well as to minimize transformer damage resulting from internal faults by rapidly de-energizing the transformer for such internal faults.

There is a lack of consistent application or interpretation of these rules between various Regional Entities. For instance, ReliabilityFirst Corporation's Appendix A to their Bulk Electric System Definition shown below (available at <http://www.rfirst.org/Documents/AboutUs/Members/RFC%20BES%20Definition.pdf>) directly addresses this question, indicating that the transformer protection equipment in the above example would not be considered a transmission Protection System.

ReliabilityFirst Corp.	Bulk Electric System Definition
<p><b>Example 1B:</b> In another example, if a 138/12.47 kV distribution transformer is tapped from a networked 138 kV line which is included in the BES, and that transformer has protective relays (such as differential relays) that trip <u>only</u> the distribution transformer out-of-service and do not trip the networked 138 kV line; then those protective relays are <u>not included</u> as part of the BES definition. Breaker failure relaying on Breaker A, if any, is included if operation results in tripping of the networked 138kV line (Reference Diagram 1B.)</p>	
	
<p>Diagram 1B</p> <p>Relays protecting non-BES facility (e.g. transformer with secondary windings less than 100 kV) and tripping Breaker A are <u>not included</u> as part of BES.</p>	

However, slide 42 of Western Electricity Coordinating Council's PowerPoint presentation from their August 12, 2008 Relay Workshop (available at <http://www.wecc.biz/documents/library/compliance/2008/2008%2008%2012%20-%20Relay%20Workshop%20-%20Portland,%20OR%20-%20Presentation.ppt>) and shown below, also directly addresses this question, indicating that the equipment in the example above would be considered a transmission Protection System and would be subject to PRC-004-1 and PRC-005-1.



These issues stem from the fact that the term "transmission Protection System" is not clearly defined.

**Identify the material impact associated with this interpretation:**

**Identify the material impact to your organization or others caused by the lack of clarity or an incorrect interpretation of this standard.**

Depending upon the interpreted definition of the term "transmission Protection System," Y-WEA and other Tri-State members who are Distribution Providers and own substations connecting to the BES for power delivery from a wholesale provider as well as Tri-State and other Transmission Owners could be directly and materially affected by these standards. Y-WEA and other Tri-State members are compliant with these NERC standards. We believe the applicability of WECC's more stringent interpretation must be clarified for uniform enforcement.

Alleged violations from a WECC audit where these standards were not thought to be applicable could result in sanctions and civil penalties.

## Project 2009-17: Response to Request for an Interpretation of PRC-004-1 and PRC-005-1 for Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc.

The following interpretation of PRC-004-1 — Analysis and Mitigation of Transmission and Generation Protection System Misoperations Requirements R1 and R3 and PRC-005-1 – Transmission and Generation Protection System Maintenance and Testing Requirements R1 and R2 was developed by the System Protection and Controls Subcommittee.

### Requirement Number and Text of Requirement

#### PRC-004-1:

**R1.** The Transmission Owner and any Distribution Provider that owns a transmission Protection System shall each analyze its transmission Protection System Misoperations and shall develop and implement a Corrective Action Plan to avoid future Misoperations of a similar nature according to the Regional Reliability Organization's procedures developed for Reliability Standard PRC-003 Requirement 1.

**R3.** The Transmission Owner, any Distribution Provider that owns a transmission Protection System, and the Generator Owner shall each provide to its Regional Reliability Organization, documentation of its Misoperations analyses and Corrective Action Plans according to the Regional Reliability Organization's procedures developed for PRC-003 R1.

#### PRC-005-1:

**R1.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall have a Protection System maintenance and testing program for Protection Systems that affect the reliability of the BES. The program shall include:

**R1.1.** Maintenance and testing intervals and their basis.

**R1.2.** Summary of maintenance and testing procedures.

**R2.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization on request (within 30 calendar days). The documentation of the program implementation shall include:

**R2.1.** Evidence Protection System devices were maintained and tested within the defined intervals.

**R2.2.** Date each Protection System device was last tested/maintained.

### Question

Y-W Electric Association, Inc. (Y-WEA) and Tri-State Generation and Transmission Association, Inc. (Tri-State) respectfully request an interpretation of the term "transmission



Protection System" and specifically whether protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System and is subject to these standards.

## Response

The request for interpretation of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2 focuses on the applicability of the term "transmission Protection System." The NERC *Glossary of Terms Used in Reliability Standards* contains a definition of "Protection System" but does not contain a definition of transmission Protection System. The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES).

In general, a radially connected transformer protection system energized from the BES would not be considered a transmission Protection System. In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission system faults, then these Protection Systems would be considered transmission Protection Systems.

It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity.



NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Standards Announcement

Ballot Pool and Pre-ballot Window

June 30–July 31, 2009

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

### **Interpretation of PRC-004-1 and PRC-005-1 for Y-W Electric and Tri-State (Project 2009-17)**

An interpretation of standards PRC-004-1 — Analysis and Mitigation of Transmission and Generation Protection System Misoperations and PRC-005-1 — Transmission and Generation Protection System Maintenance and Testing for Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc. 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. EDT on July 31, 2009.**

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-2009-17 RFI YW Tri in.](#)

### **Next Steps**

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

### **Project Background**

Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc. requested an interpretation of the term "transmission Protection System" and specifically whether protection for a radially connected transformer protection system energized from the Bulk Electric System is considered a transmission Protection System and is subject to these standards.

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

<http://www.nerc.com/filez/standards/Project2009-17 Interpretation PRC-004 PRC-005 Y-W TriStateG&T.html>

*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

### Initial Ballot Window Open

### July 31–August 10, 2009

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

#### **Project 2009-17: Interpretation of PRC-004-1 and PRC-005-1 for Y-W Electric and Tri-State**

An initial ballot window for interpretation of standards PRC-004-1 — Analysis and Mitigation of Transmission and Generation Protection System Misoperations and PRC-005-1 — Transmission and Generation Protection System Maintenance and Testing for Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc. is now open **until 8 p.m. EDT on August 10, 2009.**

#### **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:**

Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc. requested an interpretation of the term "transmission Protection System" and specifically whether protection for a radially connected transformer protection system energized from the Bulk Electric System is considered a transmission Protection System and is subject to these standards.

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

[http://www.nerc.com/filez/standards/Project2009-17\\_Interpretation\\_PRC-004\\_PRC-005\\_Y-W\\_TriStateG&T.html](http://www.nerc.com/filez/standards/Project2009-17_Interpretation_PRC-004_PRC-005_Y-W_TriStateG&T.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.*

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- Proxy Voters

Home Page

**Ballot Results**

<b>Ballot Name:</b>	Project 2009-17 Interpretation - Y-W Electric and Tri-State - PRC-004-1 and PRC-005-1_in
<b>Ballot Period:</b>	7/31/2009 - 8/10/2009
<b>Ballot Type:</b>	Initial
<b>Total # Votes:</b>	252
<b>Total Ballot Pool:</b>	279
<b>Quorum:</b>	<b>90.32 % The Quorum has been reached</b>
<b>Weighted Segment Vote:</b>	62.15 %
<b>Ballot Results:</b>	<b>The standard will proceed to recirculation ballot.</b>

**Summary of Ballot Results**

Segment	Ballot Pool	Segment Weight	Affirmative		Negative		Abstain # Votes	No Vote	
			# Votes	Fraction	# Votes	Fraction			
1 - Segment 1.		73	1	34	0.557	27	0.443	4	8
2 - Segment 2.		10	0.7	5	0.5	2	0.2	1	2
3 - Segment 3.		76	1	31	0.463	36	0.537	5	4
4 - Segment 4.		18	1	11	0.733	4	0.267	2	1
5 - Segment 5.		52	1	23	0.639	13	0.361	8	8
6 - Segment 6.		30	1	14	0.583	10	0.417	4	2
7 - Segment 7.		0	0	0	0	0	0	0	0
8 - Segment 8.		7	0.7	5	0.5	2	0.2	0	0
9 - Segment 9.		5	0.3	1	0.1	2	0.2	1	1
10 - Segment 10.		8	0.5	4	0.4	1	0.1	2	1
<b>Totals</b>		<b>279</b>	<b>7.2</b>	<b>128</b>	<b>4.475</b>	<b>97</b>	<b>2.725</b>	<b>27</b>	<b>27</b>

**Individual Ballot Pool Results**

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

1	Black Hills Corp	Eric Egge		
1	Bonneville Power Administration	Donald S. Watkins	Abstain	
1	Brazos Electric Power Cooperative, Inc.	Tony Kroskey	Affirmative	
1	CenterPoint Energy	Paul Rocha	Negative	
1	Central Maine Power Company	Brian Conroy	Negative	
1	City Utilities of Springfield, Missouri	Jeff Knottek	Negative	<a href="#">View</a>
1	Colorado Springs Utilities	Paul Morland	Affirmative	
1	Consolidated Edison Co. of New York	Christopher L de Graffenried	Negative	<a href="#">View</a>
1	Dairyland Power Coop.	Robert W. Roddy		
1	Deseret Power	James Tucker	Negative	<a href="#">View</a>
1	Dominion Virginia Power	William L. Thompson	Affirmative	
1	Duke Energy Carolina	Douglas E. Hils	Negative	
1	E.ON U.S. LLC	Larry Monday	Affirmative	
1	East Kentucky Power Coop.	George S. Carruba		
1	Entergy Corporation	George R. Bartlett	Affirmative	
1	Exelon Energy	John J. Blazekovich	Affirmative	
1	Farmington Electric Utility System	Alan Glazner	Negative	
1	FirstEnergy Energy Delivery	Robert Martinko	Affirmative	<a href="#">View</a>
1	Florida Keys Electric Cooperative Assoc.	Dennis Minton	Affirmative	
1	Georgia Transmission Corporation	Harold Taylor, II	Affirmative	<a href="#">View</a>
1	Great River Energy	Gordon Pietsch	Negative	<a href="#">View</a>
1	Hoosier Energy Rural Electric Cooperative, Inc.	Damon Holladay	Affirmative	
1	Hydro One Networks, Inc.	Ajay Garg	Negative	<a href="#">View</a>
1	Idaho Power Company	Ronald D. Schellberg	Affirmative	
1	ITC Transmission	Elizabeth Howell	Affirmative	
1	JEA	Ted E. Hobson		
1	Kansas City Power & Light Co.	Michael Gammon	Negative	<a href="#">View</a>
1	Kissimmee Utility Authority	Joe B Watson	Affirmative	
1	Lakeland Electric	Larry E Watt	Negative	<a href="#">View</a>
1	Lee County Electric Cooperative	Rodney Hawkins	Affirmative	
1	Lincoln Electric System	Doug Bantam	Affirmative	
1	Manitoba Hydro	Michelle Rheault	Affirmative	
1	MEAG Power	Danny Dees	Affirmative	
1	MidAmerican Energy Co.	Terry Harbour	Negative	<a href="#">View</a>
1	New York Power Authority	Ralph Rufrano	Affirmative	
1	New York State Electric & Gas Corp.	Henry G. Masti	Negative	<a href="#">View</a>
1	Northeast Utilities	David H. Boguslawski	Affirmative	
1	Northern Indiana Public Service Co.	Kevin M Largura	Negative	
1	Ohio Valley Electric Corp.	Robert Matthey	Affirmative	
1	Oklahoma Gas and Electric Co.	Marvin E VanBebber	Abstain	
1	Oncor Electric Delivery	Charles W. Jenkins	Affirmative	
1	Orange and Rockland Utilities, Inc.	Edward Bedder	Negative	
1	Orlando Utilities Commission	Brad Chase	Negative	<a href="#">View</a>
1	Otter Tail Power Company	Lawrence R. Larson	Negative	
1	Pacific Gas and Electric Company	Chifong L. Thomas	Affirmative	
1	PacifiCorp	Mark Sampson		
1	Platte River Power Authority	John C. Collins	Negative	<a href="#">View</a>
1	Potomac Electric Power Co.	Richard J. Kafka	Affirmative	
1	PowerSouth Energy Cooperative	Larry D. Avery	Affirmative	
1	PP&L, Inc.	Ray Mammarella	Affirmative	
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	Negative	<a href="#">View</a>
1	Salt River Project	Robert Kondziolka	Negative	<a href="#">View</a>
1	Santee Cooper	Terry L. Blackwell	Negative	<a href="#">View</a>
1	SaskPower	Wayne Guttormson		
1	Seattle City Light	Pawel Krupa	Affirmative	
1	Sierra Pacific Power Co.	Richard Salgo	Negative	<a href="#">View</a>
1	South Texas Electric Cooperative	Richard McLeon	Negative	
1	Southern California Edison Co.	Dana Cabbell	Negative	
1	Southern Company Services, Inc.	Horace Stephen Williamson	Affirmative	
1	Southwest Transmission Cooperative, Inc.	James L. Jones	Abstain	
1	Tri-State G & T Association Inc.	Keith V. Carman	Affirmative	
1	Westar Energy	Allen Klassen	Negative	
1	Western Area Power Administration	Brandy A Dunn	Affirmative	
1	Xcel Energy, Inc.	Gregory L. Pieper	Negative	<a href="#">View</a>

2	Alberta Electric System Operator	Anita Lee	Affirmative	
2	BC Transmission Corporation	Faramarz Amjadi	Affirmative	
2	Electric Reliability Council of Texas, Inc.	Chuck B Manning	Affirmative	
2	Independent Electricity System Operator	Kim Warren	Negative	<a href="#">View</a>
2	ISO New England, Inc.	Kathleen Goodman	Negative	<a href="#">View</a>
2	Midwest ISO, Inc.	Terry Bilke	Abstain	<a href="#">View</a>
2	New Brunswick System Operator	Alden Briggs	Affirmative	
2	New York Independent System Operator	Gregory Campoli		
2	PJM Interconnection, L.L.C.	Tom Bowe		
2	Southwest Power Pool	Charles H Yeung	Affirmative	
3	Alabama Power Company	Bobby Kerley	Affirmative	
3	Ameren Services	Mark Peters	Negative	
3	American Electric Power	Raj Rana	Negative	<a href="#">View</a>
3	Anaheim Public Utilities Dept.	Kelly Nguyen	Affirmative	
3	Arizona Public Service Co.	Thomas R. Glock	Affirmative	
3	Atlantic City Electric Company	James V. Petrella	Affirmative	
3	Basin Electric Power Cooperative	Daniel Klempel		
3	BC Hydro and Power Authority	Pat G. Harrington	Abstain	
3	Blachly-Lane Electric Co-op	Bud Tracy	Negative	<a href="#">View</a>
3	Blue Ridge Power Agency	Duane S. Dahlquist	Affirmative	
3	Bonneville Power Administration	Rebecca Berdahl	Abstain	
3	Central Electric Cooperative, Inc. (Redmond, Oregon)	Dave Markham	Negative	<a href="#">View</a>
3	Central Lincoln PUD	Steve Alexanderson	Negative	<a href="#">View</a>
3	City Public Service of San Antonio	Edwin Les Barrow	Affirmative	
3	Clearwater Power Co.	Dave Hagen	Negative	<a href="#">View</a>
3	Commonwealth Edison Co.	Stephen Lesniak	Affirmative	
3	Consolidated Edison Co. of New York	Peter T Yost	Negative	<a href="#">View</a>
3	Consumers Energy	David A. Lapinski	Negative	<a href="#">View</a>
3	Consumers Power Inc.	Roman Gillen	Negative	<a href="#">View</a>
3	Coos-Curry Electric Cooperative, Inc	Roger Meader	Negative	<a href="#">View</a>
3	Cowlitz County PUD	Russell A Noble	Negative	<a href="#">View</a>
3	Delmarva Power & Light Co.	Michael R. Mayer	Affirmative	
3	Detroit Edison Company	Kent Kujala	Affirmative	
3	Dominion Resources, Inc.	Jalal (John) Babik	Negative	<a href="#">View</a>
3	Douglas Electric Cooperative	Dave Sabala	Negative	<a href="#">View</a>
3	Duke Energy Carolina	Henry Ernst-Jr	Negative	<a href="#">View</a>
3	Entergy Services, Inc.	Matt Wolf	Affirmative	
3	Fall River Rural Electric Cooperative	Bryan Case	Negative	<a href="#">View</a>
3	FirstEnergy Solutions	Joanne Kathleen Borrell	Affirmative	<a href="#">View</a>
3	Flathead Electric Cooperative	John M Goroski	Affirmative	
3	Florida Power Corporation	Lee Schuster	Affirmative	
3	Georgia Power Company	Leslie Sibert	Affirmative	
3	Georgia System Operations Corporation	Edward W Pourciau	Abstain	
3	Grays Harbor PUD	Wesley W Gray	Negative	
3	Great River Energy	Sam Kokkinen	Negative	<a href="#">View</a>
3	Gulf Power Company	Gwen S Frazier	Affirmative	
3	Hydro One Networks, Inc.	Michael D. Penstone	Negative	<a href="#">View</a>
3	JEA	Garry Baker	Affirmative	
3	Kansas City Power & Light Co.	Charles Locke	Negative	<a href="#">View</a>
3	Kissimmee Utility Authority	Gregory David Woessner		
3	Lakeland Electric	Mace Hunter	Affirmative	
3	Lane Electric Cooperative, Inc.	Rick Crinklaw	Negative	<a href="#">View</a>
3	Lincoln Electric Cooperative, Inc.	Michael Henry	Negative	<a href="#">View</a>
3	Lincoln Electric System	Bruce Merrill	Affirmative	
3	Lost River Electric Cooperative	Richard Reynolds	Negative	<a href="#">View</a>
3	Louisville Gas and Electric Co.	Charles A. Freibert	Affirmative	
3	Manitoba Hydro	Greg C Parent		
3	Mississippi Power	Don Horsley	Affirmative	
3	Municipal Electric Authority of Georgia	Steven M. Jackson	Affirmative	
3	New York Power Authority	Michael Lupo	Affirmative	
3	Niagara Mohawk (National Grid Company)	Michael Schiavone	Negative	<a href="#">View</a>
3	North Carolina Municipal Power Agency #1	Denise Roeder	Negative	<a href="#">View</a>
3	Northern Indiana Public Service Co.	William SeDoris	Negative	<a href="#">View</a>
3	Northern Lights Inc.	Jon Shelby	Negative	<a href="#">View</a>
3	Okanogan County Electric Cooperative, Inc.	Ray Ellis	Negative	<a href="#">View</a>
3	Orlando Utilities Commission	Ballard Keith Mutters	Abstain	

3	PacifiCorp	John Apperson	Affirmative	
3	Platte River Power Authority	Terry L Baker	Negative	<a href="#">View</a>
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. 1 of Chelan County	Kenneth R. Johnson	Abstain	
3	Public Utility District No. 2 of Grant County	Greg Lange	Affirmative	
3	Raft River Rural Electric Cooperative	Heber Carpenter	Negative	<a href="#">View</a>
3	Sacramento Municipal Utility District	Mark Alberter	Affirmative	
3	Salmon River Electric Cooperative	Ken Dizes	Negative	<a href="#">View</a>
3	Salt River Project	John T. Underhill	Negative	<a href="#">View</a>
3	Santee Cooper	Zack Dusenbury	Negative	<a href="#">View</a>
3	Seattle City Light	Dana Wheelock	Affirmative	
3	Southern California Edison Co.	David Schiada	Negative	
3	Tampa Electric Co.	Ronald L. Donahey	Affirmative	
3	Tri-State G & T Association Inc.	Janelle Marriott	Affirmative	
3	Umatilla Electric Cooperative	Steve Eldrige	Negative	<a href="#">View</a>
3	West Oregon Electric Cooperative, Inc.	Marc Farmer	Negative	<a href="#">View</a>
3	Wisconsin Electric Power Marketing	James R. Keller	Negative	
3	Xcel Energy, Inc.	Michael Ibold		
4	Alliant Energy Corp. Services, Inc.	Kenneth Goldsmith	Affirmative	<a href="#">View</a>
4	American Municipal Power - Ohio	Kevin L Holt	Affirmative	
4	Consumers Energy	David Frank Ronk	Negative	<a href="#">View</a>
4	Detroit Edison Company	Daniel Herring		
4	Georgia System Operations Corporation	Guy Andrews	Abstain	
4	Illinois Municipal Electric Agency	Bob C. Thomas	Affirmative	
4	Integrus Energy Group, Inc.	Christopher Plante	Abstain	
4	Madison Gas and Electric Co.	Joseph G. DePoorter	Affirmative	<a href="#">View</a>
4	Northern California Power Agency	Fred E. Young	Negative	<a href="#">View</a>
4	Ohio Edison Company	Douglas Hohlbaugh	Affirmative	<a href="#">View</a>
4	Old Dominion Electric Coop.	Mark Ringhausen	Affirmative	
4	Pacific Northwest Generating Cooperative	Aleka K Scott	Negative	<a href="#">View</a>
4	Public Utility District No. 1 of Douglas County	Henry E. LuBean	Affirmative	
4	Public Utility District No. 1 of Snohomish County	John D. Martinsen	Affirmative	
4	Seattle City Light	Hao Li	Affirmative	
4	Seminole Electric Cooperative, Inc.	Steven R. Wallace	Affirmative	
4	Wisconsin Energy Corp.	Anthony Jankowski	Negative	
4	Y-W Electric Association, Inc.	James A Ziebarth	Affirmative	<a href="#">View</a>
5	AEP Service Corp.	Brock Ondayko	Negative	<a href="#">View</a>
5	Amerenue	Sam Dwyer	Abstain	
5	Avista Corp.	Edward F. Groce		
5	Black Hills Corp	George Tatar		
5	Bonneville Power Administration	Francis J. Halpin	Abstain	
5	Buckeye Power, Inc.	Kevin Koloini	Abstain	
5	Calpine Corporation	John Brent Hebert	Affirmative	
5	Chelan County Public Utility District #1	John Yale	Affirmative	
5	City of Tallahassee	Alan Gale	Affirmative	
5	Colmac Clarion/Piney Creek LP	Harvie D. Beavers	Affirmative	
5	Constellation Power Source Generation, Inc.	Scott A Etnoyer	Affirmative	
5	Consumers Energy	James B Lewis	Negative	<a href="#">View</a>
5	Covanta Energy	Samuel Cabassa	Abstain	
5	Dairyland Power Coop.	Warren Schaefer		
5	Detroit Edison Company	Ronald W. Bauer	Affirmative	
5	Dominion Resources, Inc.	Mike Garton	Negative	<a href="#">View</a>
5	Entergy Corporation	Stanley M Jaskot		
5	Exelon Nuclear	Michael Korchynsky	Affirmative	
5	FirstEnergy Solutions	Kenneth Dresner	Affirmative	<a href="#">View</a>
5	FPL Energy	Benjamin Church		
5	Great River Energy	Cynthia E Sulzer	Negative	<a href="#">View</a>
5	JEA	Donald Gilbert	Abstain	
5	Kansas City Power & Light Co.	Scott Heidtbrink	Negative	<a href="#">View</a>
5	Liberty Electric Power LLC	Daniel Duff	Negative	<a href="#">View</a>
5	Lincoln Electric System	Dennis Florom	Affirmative	
5	Louisville Gas and Electric Co.	Charlie Martin	Affirmative	
5	Luminant Generation Company LLC	Mike Laney	Affirmative	
5	Manitoba Hydro	Mark Aikens	Affirmative	

5	Michigan Public Power Agency	James R. Nickel	Abstain	
5	MidAmerican Energy Co.	Christopher Schneider	Abstain	
5	Northern Indiana Public Service Co.	Michael K Wilkerson	Negative	
5	Northern States Power Co.	Liam Noailles	Negative	View
5	Oklahoma Gas and Electric Co.	Kim Morphis	Abstain	
5	Pacific Gas and Electric Company	Richard J. Padilla		
5	PacifiCorp Energy	David Godfrey	Affirmative	
5	Portland General Electric Co.	Gary L Tingley		
5	PPL Generation LLC	Mark A. Heimbach	Affirmative	
5	Progress Energy Carolinas	Wayne Lewis	Affirmative	
5	PSEG Power LLC	Thomas Piascik	Affirmative	
5	Reedy Creek Energy Services	Bernie Budnik		
5	RRI Energy	Thomas J. Bradish	Affirmative	
5	Sacramento Municipal Utility District	Damon Smith	Affirmative	
5	Salt River Project	Glen Reeves	Negative	View
5	Seattle City Light	Michael J. Haynes	Affirmative	
5	Seminole Electric Cooperative, Inc.	Brenda K. Atkins	Affirmative	
5	South California Edison Company	Ahmad Sanati	Negative	
5	Southeastern Power Administration	Douglas Spencer	Affirmative	
5	Southern Company Generation	William D Shultz	Affirmative	
5	Tenaska, Inc.	Scott M. Helyer	Negative	
5	Tri-State G & T Association Inc.	Barry Ingold	Affirmative	
5	U.S. Army Corps of Engineers Northwestern Division	Karl Bryan	Negative	View
5	Wisconsin Electric Power Co.	Linda Horn	Negative	
6	AEP Marketing	Edward P. Cox	Negative	View
6	Ameren Energy Marketing Co.	Jennifer Richardson	Abstain	
6	Bonneville Power Administration	Brenda S. Anderson	Abstain	
6	Consolidated Edison Co. of New York	Nickesha P Carrol	Affirmative	
6	Constellation Energy Commodities Group	Chris Lyons	Affirmative	
6	Dominion Resources, Inc.	Louis S Slade	Negative	View
6	Duke Energy Carolina	Walter Yeager	Abstain	
6	Entergy Services, Inc.	Terri F Benoit	Affirmative	
6	Exelon Power Team	Pulin Shah	Affirmative	
6	FirstEnergy Solutions	Mark S Travaglianti	Affirmative	View
6	Great River Energy	Donna Stephenson	Negative	View
6	Kansas City Power & Light Co.	Thomas Saitta	Negative	View
6	Lincoln Electric System	Eric Ruskamp	Affirmative	
6	Louisville Gas and Electric Co.	Daryn Barker	Affirmative	
6	Luminant Energy	Thomas Burke		
6	Manitoba Hydro	Daniel Prowse	Affirmative	
6	New York Power Authority	Thomas Papadopoulos	Negative	
6	Northern Indiana Public Service Co.	Joseph O'Brien	Negative	View
6	PacifiCorp	Gregory D Maxfield		
6	PP&L, Inc.	Thomas Hyzinski	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	Abstain	
6	RRI Energy	Trent Carlson	Affirmative	
6	Salt River Project	Mike Hummel	Negative	View
6	Santee Cooper	Suzanne Ritter	Negative	View
6	Seminole Electric Cooperative, Inc.	Trudy S. Novak	Affirmative	
6	Southern California Edison Co.	Marcus V Lotto	Negative	
6	Western Area Power Administration - UGP Marketing	John Stonebarger	Affirmative	
6	Xcel Energy, Inc.	David F. Lemmons	Negative	View
8	Ascendant Energy Services, LLC	Raymond Tran	Affirmative	
8	Edward C Stein	Edward C Stein	Negative	View
8	James A Maenner	James A Maenner	Affirmative	
8	JDRJC Associates	Jim D. Cyrulewski	Negative	
8	Power Energy Group LLC	Peggy Abbadini	Affirmative	
8	Roger C Zaklukiewicz	Roger C Zaklukiewicz	Affirmative	
8	Volkman Consulting, Inc.	Terry Volkman	Affirmative	
9	Commonwealth of Massachusetts Department of Public Utilities	Donald E. Nelson	Negative	View
9	Maine Public Utilities Commission	Jacob A McDermott	Affirmative	
9	National Association of Regulatory Utility Commissioners	Diane J. Barney	Negative	View





9	New York State Department of Public Service	Thomas G Dvorsky		
9	Oregon Public Utility Commission	Jerome Murray	<a href="#">Abstain</a>	
10	Electric Reliability Council of Texas, Inc.	Kent Saathoff	<a href="#">Affirmative</a>	
10	Florida Reliability Coordinating Council	Linda Campbell	<a href="#">Abstain</a>	
10	New York State Reliability Council	Alan Adamson	<a href="#">Affirmative</a>	
10	Northeast Power Coordinating Council, Inc.	Guy V. Zito	<a href="#">Affirmative</a>	
10	ReliabilityFirst Corporation	Jacque Smith		
10	SERC Reliability Corporation	Carter B. Edge	<a href="#">Abstain</a>	
10	Southwest Power Pool Regional Entity	Stacy Dochoda	<a href="#">Affirmative</a>	
10	Western Electricity Coordinating Council	Louise McCarren	<a href="#">Negative</a>	<a href="#">View</a>

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NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Standards Announcement

### Initial Ballot Results

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

#### **Project 2009-17: Interpretation of PRC-004-1 and PRC-005-1 for Y-W Electric and Tri-State**

The initial ballot for an interpretation of standards PRC-004-1 — Analysis and Mitigation of Transmission and Generation Protection System Misoperations and PRC-005-1 — Transmission and Generation Protection System Maintenance and Testing for Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc. ended on August 10, 2009.

#### **Ballot Results**

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

Quorum: 90.32%

Approval: 62.15%

Since at least one negative vote included a comment, these results are not final. A second (or recirculation) ballot must be conducted. Ballot criteria details are listed at the end of the announcement.

#### **Next Steps**

As part of the recirculation ballot process, the drafting team must draft and post responses to voter comments. The drafting team will also determine whether or not to make revisions to the balloted item(s). Should the team decide to make revisions, the revised item(s) will return to the initial ballot phase.

#### **Project Background**

Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc. requested an interpretation of the term "transmission Protection System" and specifically whether protection for a radially connected transformer protection system energized from the Bulk Electric System is considered a transmission Protection System and is subject to these standards.

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

[http://www.nerc.com/filez/standards/Project2009-17\\_Interpretation\\_PRC-004\\_PRC-005\\_Y-W\\_TriStateG&T.html](http://www.nerc.com/filez/standards/Project2009-17_Interpretation_PRC-004_PRC-005_Y-W_TriStateG&T.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 Shaun Streeter at [shaun.streeter@nerc.net](mailto:shaun.streeter@nerc.net) or at 609.452.8060.*

## **Project 2009-17: Interpretation of PRC-004-1 and PRC-005-1 for Y-W Electric and Tri-State Consideration of Comments on Initial Ballot (July 31-August 10, 2009)**

### **Summary Consideration:**

The majority of negative voters provided concerns within three distinct areas: 1) The interpretation is defining a new term, “transmission Protection System,” which should not take place in an interpretation but rather as part of a standard revision; 2) The applicability of transmission Protection System; and, 3) The differences in the Regional Entity definitions of Bulk Electric System (BES) and that the use of the phrase “specific clarification may be required” created ambiguity within the interpretation. The drafting team has modified the interpretation to address these concerns and has provided responses to the comments received.

With regards to the concern that the interpretation was trying to define a new term “transmission Protection System,” the drafting team explained that this particular request was for an “interpretation of the specific phrase “transmission Protection System,” which is used in these standards, and that the response is meant only to clarify the use of this term in the context of these standards and does not propose a new defined term.

Another concern raised was with the applicability of the phrase “transmission Protection System.” The drafting team explained that this interpretation applies to all situations where the Protection System in question is designed to detect and initiate isolation of system faults on transmission elements identified as being included in the BES. To provide further clarity, the drafting team has modified the phrase “The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)” to now read “The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.” The drafting team explained that 1) if circumstances exist that are not covered by this interpretation, the NERC *Reliability Standards Development Procedure* allows entities to request interpretations to address this need and 2) it would be inappropriate to reject an interpretation of a standard because it may lead to further interpretation requests.

The final concern deals with the differing definitions of the BES within the Region Entities. The drafting team explained that under the present standards process, the definition of the BES is assigned to the Regional Entities, each of which has provided a definition of BES to both the industry and NERC. Resolving these differences is beyond the scope of this project. The drafting team further explained that the use of the phrase “specific clarification may be required” was meant to identify that there are differences among the Regional Entities in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition. To provide further clarity, the drafting team modified the phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” to now read “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”

If you feel that the drafting team overlooked your comments, please let us know immediately. Our goal is to give every comment serious consideration in this process. If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Gerry Adamski, at 609-452-8060 or at gerry.adamski@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.<sup>1</sup>

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<sup>1</sup> The appeals process is in the Reliability Standards Development Procedure: [http://www.nerc.com/files/RSDP\\_V6\\_1\\_12Mar07.pdf](http://www.nerc.com/files/RSDP_V6_1_12Mar07.pdf).

Voter	Entity	Segment	Vote	Comment
Kim Warren	Independent Electricity System Operator	2	Negative	<p>(1) The interpretation appears to “define” transmission Protection System, but in accordance with the Reliability Standards Development Procedure, an interpretation is not the appropriate process for defining a NERC term.</p> <p>(2) This interpretation appears to be applicable to a particular circumstance of a protection system. It is quite likely that this action will generate numerous other interpretation requests for variations of this system configuration and protection designs. We therefore believe that a more generally applicable solution is required.</p> <p>(3) In general, non-BES Protection Systems that do not initiate BES equipment action, or have any effect on the BES, should not be considered part of a transmission Protection System. However, the classification of non-BES Protection Systems that are designed to protect the BES against uncleared faults on non-BES elements that could be impactful on the BES, needs to be clarified.</p> <p>Finally, in the phrase “...designed to detect and initiate action for...” the interpretation seems to blur the distinction between a transmission protection system and a Special Protection System.</p>

**Response:** This particular request was for an interpretation of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.

The interpretation applies to all situations where the Protection System in question “is designed to detect and initiate isolation of system faults on transmission elements identified as being included in the Bulk Electric System (BES).” If other circumstances exist that are not covered by this interpretation, the NERC Reliability Standards Development Procedure allows entities to request interpretations to address this need. It would be inappropriate to reject an interpretation of a standard because it may lead to further requests for interpretation.

If the question is “whether it is possible to have “transmission Protection Systems that are electrically/physically located on or in non-BES facilities,” the answer is yes. For example, the relays connected on the low side of a tapped substation (that is not defined as part of the BES) designed serve as transmission line protection due to system configuration would be considered “transmission Protection Systems.”

The phrase “The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)” has been replaced with “The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.”

Voter	Entity	Segment	Vote	Comment
Michael Schiavone	Niagara Mohawk (National Grid Company)	3	Negative	<p>The interpretation appears to “define” transmission Protection System, but in accordance with the Reliability Standards Development Procedure, an interpretation is not the appropriate process for defining a NERC term. *</p> <p>This interpretation appears to be applicable to a particular circumstance of a protection system. It is quite likely that this action will generate numerous other interpretation requests for variations of this system configuration and protection designs.</p> <p>* Finally, in the phrase “...designed to detect and initiate action for...” the interpretation seems to blur the distinction between a transmission protection system and a Special Protection System. In general, non-BES equipment that does not initiate BES equipment action, or has any effect on the BES should not be considered part of a transmission Protection System</p>

**Response:** This particular request was for an interpretation of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.

The interpretation applies to all situations where the Protection System in question “is designed to detect and initiate isolation of system faults on transmission elements identified as being included in the Bulk Electric System (BES).” If other circumstances exist that are not covered by this interpretation, the NERC Reliability Standards Development Procedure allows entities to request interpretations to address this need. It would be inappropriate to reject an interpretation of a standard because it may lead to further requests for interpretation.

If the question is “whether it is possible to have ‘transmission Protection Systems that are electrically/physically located on or in non-BES facilities,” the answer is yes. For example, the relays connected on the low side of a tapped substation (that is not defined as part of the BES) designed serve as transmission line protection due to system configuration would be considered “transmission Protection Systems.”

The phrase “The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)” has been replaced with “The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.”

Voter	Entity	Segment	Vote	Comment
Kathleen Goodman	ISO New England, Inc.	2	Negative	<p>1. The interpretation appears to “define” transmission Protection System but in accordance with the Reliability Standards Development Procedure, an interpretation is not the appropriate process for defining a NERC term.</p> <p>2. This interpretation appears to be applicable to a particular circumstance of a protection system. It is quite likely that this action will generate numerous other interpretation requests for variations other system configuration and protection designs. 3. In general, passive non-BES equipment should not be considered part of a transmission Protection System.</p> <p>Finally, in the phrase “...designed to detect and initiate action for...” the interpretation seems to blur the distinction between a transmission protection system and a Special Protection System.</p>

**Response:** This particular request was for an interpretation of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.

The interpretation applies to all situations where the Protection System in question “is designed to detect and initiate isolation of system faults on transmission elements identified as being included in the Bulk Electric System (BES).” If other circumstances exist that are not covered by this interpretation, the NERC Reliability Standards Development Procedure allows entities to request interpretations to address this need. It would be inappropriate to reject an interpretation of a standard because it may lead to further requests for interpretation.

If the question is “whether it is possible to have ‘transmission Protection Systems that are electrically/physically located on or in non-BES facilities,” the answer is yes. For example, the relays connected on the low side of a tapped substation (that is not defined as part of the BES) designed serve as transmission line protection due to system configuration would be considered “transmission Protection Systems.”

The phrase “The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)” has been replaced with “The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.”

Voter	Entity	Segment	Vote	Comment
Terry L. Blackwell	Santee Cooper	1	Negative	<p>1. There is no mention of a minimum size of the potential source. Concerning a generator, this should be limited at least to the same size that makes it reportable as generation and subject to the generation protection system requirements.</p> <p>2. The mention of “networked low side system” seems beyond the scope of the standards. This could potentially extend the transmission bulk electric system protective elements down to the 230/69 and 115/69 kV transformers, as well as any of the 69 kV lines whose relay elements could possibly extend onto the high side of the transformers as backup protection.</p>
Zack Dusenbury		3		
Suzanne Ritter		6		
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.</p> <p>The reference to “networked low side system” in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a “transmission Protection System,” regardless of the voltage of the network voltage.</p>				
Steve Alexanderson	Central Lincoln PUD	3	Negative	<p>Central Lincoln votes no on this interpretation. Our compliments on the straight forward and concise treatment of the matter. While some entities may ask for a more prescriptive approach in dealing with the question of what size generation or network constitutes a “potential source”, Central Lincoln believes there is no reason for any more specificity. The controlling part of the interpreters’ statement deals with the purpose of the installed protection system in question. If the installation was not designed for transmission faults, there is no reason to look at potential source sizes. If the protection was designed for transmission faults, then the designers clearly considered the potential source sizable enough to matter. If a more prescriptive approach is really needed for reliability, this should be handled by the SAR rather than the Interpretation Request process; since it would require changing these standards, or the addition a new one. We also understand that some entities may object to the interpreters’ introduction of a “new” definition of “transmission protection system.” Central Lincoln would like to point out that both “transmission” and “protection system” are already in the NERC glossary, and that the interpreters’ use of the combination is consistent with the individual definitions.</p>

Voter	Entity	Segment	Vote	Comment
				<p>The reason for the no vote is that Central Lincoln joins other entities in its concern over the last sentence: "It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity." Central Lincoln is supportive of the intent, which re-iterates the Regional Entity's right to define the BES; but the verbiage presently gives the Regional Entity room to reject or modify the interpretation through "specific clarifications" in regard to the interpretation. This last sentence defeats the intent of the interpretation request from Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc. to clear up the differences between Regional Entities, by continuing to allow conflicting "specific clarifications" such as the ones from RFC and WECC that were referenced in the request. Central Lincoln would prefer verbiage that resembles the following:</p> <p>It should also be noted that the appropriate Regional Entity definition of the BES be considered in deciding whether certain aspects of transformer protection should be designated as a transmission Protection System.</p>
<p><b>Response:</b> The phrase "specific clarification may be required" is meant to identify that there are differences among Regional Entities in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES within a given Regional Entity, the protection schemes installed to detect faults on a radial line are not considered "transmission Protection Systems." However, they would be considered as such within a Regional Entity that includes radial lines in its BES definition. The phrase "It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity" has been replaced with "It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity."</p>				
Russell A Noble	Cowlitz County PUD	3	Negative	<p>Cowlitz votes negative with reluctance, but must take exception with the last sentence of the interpretation. This sentence gives room for the Regional Entity to reject or modify the interpretation by implying the Regional Entity may give "specific clarification" in regard to the interpretation. This last sentence defeats the intent of the interpretation request from Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc. to clear up the differences between Regional Entities. Cowlitz would prefer verbiage that resembles the following: It should also be noted that the appropriate Regional Entity definition of the BES be considered in deciding whether certain aspects of transformer protection should be</p>



Voter	Entity	Segment	Vote	Comment
				designated as a transmission Protection System.
<p><b>Response:</b> The phrase “specific clarification may be required” is meant to identify that there are differences among Regional Entities in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES within a given Regional Entity, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such within a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
John C. Collins	Platte River Power Authority	1	Negative	Clarity is needed to draw the lines of demarcation on “transmission Protection Systems.” However, the interpretation raises more questions.
<p><b>Response:</b> The interpretation applies to all situations where the Protection System in question is designed to detect and initiate isolation of system faults on transmission elements identified as being included in the BES. The phrase “The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)” has been replaced with “The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.”</p> <p>The drafting team would require more specifics related to what other questions are raised.</p>				
Jalal (John) Babik	Dominion Resources, Inc.	3	Negative	<p>Dominion believes the term ‘transmission Protection System’ is applicable to any Protection System that is designed to detect and initiate action for faults on transmission elements (lines, transformers, breakers, etc.) identified as being included in the BES. While we understand that the request for interpretation specifically addressed transformer protection on radial transmission lines, we do not believe that such a narrow interpretation is in the best interests of the industry and would have preferred this to be dealt with more broadly if it is going to be addressed in an interpretation. We believe that the interpretation should state that each Protection System is designed specifically for the elements it protects and each has a somewhat unique design and in some cases there may be justifiable regional differences.</p> <p>The Stakeholders are looking at these interpretations closely and if they are going to be implemented, they have to answer more questions than</p>
Mike Garton		5		
Louis S Slade		6		

Voter	Entity	Segment	Vote	Comment
				<p>they themselves might produce. Dominion suggests the following language:</p> <p>If a transformer's Protection System is designed to trip transmission elements other than the transformer high side isolating device to clear a fault, then that transformer has a direct impact on the associated transmission element. If, on the other hand, the transformer's Protection System is designed so as NOT to trip the associated transmission elements other than the transformer high side isolating device to clear the fault, then that transformer does not have a direct impact on that transmission element (other than loss load).</p> <p>We further suggest that the first assessment an entity needs to perform is to determine whether or not a Protection System has a direct impact on the associated transmission element.</p> <ul style="list-style-type: none"> <li>o If the assessment is that it does not, then the cited standard(s) and requirement(s) DO NOT apply.</li> <li>o If the assessment is that it does, then the entity needs to review regional criteria to determine if the impacted transmission element is designated by the region as being part of the BES.</li> <li>o If it is not, then the cited standard(s) and requirement(s) DO NOT apply.</li> <li>o However, if the impacted transmission element is designated by the region as being part of the BES, then the cited standard(s) and requirement(s) DO apply</li> </ul> <p>It is the entity's responsibility to ensure that the Protection Systems on the BES elements are reviewed and analyzed for misoperations. Since there will be regional differences interpreting the applicability of a System Protection on a radial line, we recommend that if an entity is not able to analyze the status of a radial line to contact the RRO to clarify the applicability regarding Protection Systems on the BES. (See RFC BES Definition FAQ and Interpretation)  <a href="http://www.rfirst.org/MiscForms/BESDefinition.aspx">http://www.rfirst.org/MiscForms/BESDefinition.aspx</a></p>

Voter	Entity	Segment	Vote	Comment
<p><b>Response:</b> Based on your comments, the drafting team has made the following changes:</p> <p>The phrase “The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)” has been replaced with “The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.”</p> <p>The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
Henry Ernst-Jr	Duke Energy Carolina	3	Negative	<p>Duke Energy votes “Negative” on this Interpretation because we believe it goes beyond the accepted role of an interpretation, and changes the requirements of PRC-004 and PRC-005 by introducing a definition of “transmission Protection System” which is in conflict with RFC’s Bulk Electric System Definition and RFC’s procedures for analyzing misoperations and implementing Corrective Action Plans. The definition introduced for “transmission Protection System” in the Interpretation is not consistent with RFC. The definition begins by stating that the term is applicable to “any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System.” Then a general exemption is given for radially connected transformer protection systems. The definition clarifies that its scope does include those transformers with low side “connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission system faults,...”. RFC’s “Clarification to the BES definition” does not include protective relays for these potential sources or network systems if they do not automatically trip a BES facility. Duke Energy believes that the definition of “transmission Protection System” and any changes to the requirements of PRC-004 and PRC-005 should be pursued via a SAR to revise the standards.</p>
<p><b>Response:</b> This particular request was for an ‘interpretation’ of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p>				

Voter	Entity	Segment	Vote	Comment
David A. Lapinski  David Frank Roth	Consumers Energy	3  4	Negative	Even though this interpretation seems reasonable from an engineering perspective, there seems to be a (perhaps unintended) expansion of the applicability of these NERC Standards to Protection Systems well outside the BES as defined within NERC and within the RFC. Such an expansion, if it is to happen, should be via a full standards development activity, not through an interpretation.
<p><b>Response:</b> The drafting team believes this interpretation does not expand the applicability of the cited standards. The interpretation only clarifies that in the context of these standards the phrase “transmission Protection System” applies to Protection Systems that are installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources.</p>				
Ajay Garg  Michael D. Penstone	Hydro One Networks, Inc.	1  3	Negative	<p>Hydro One Networks Inc. casts a negative vote with the following comments:</p> <ol style="list-style-type: none"> <li>1. The interpretation goes beyond being a mere clarification of the requirements. It changes the requirements of PRC-004 and PRC-005 by introducing a definition of “transmission Protection System. In accordance with the Reliability Standards Development Procedure, definitions and any changes to the requirements of PRC-004 and PRC-005 should be pursued via a SAR to revise the standards</li> <li>2. This interpretation appears to be applicable to a particular circumstance of a protection system. It is quite likely that, if this interpretation is adopted, will generate numerous other interpretation requests for variations of this system configuration and protection designs.</li> <li>3. In the phrase “...designed to detect and initiate action for...” the interpretation seems to blur the distinction between a transmission Protection System and a Special Protection System. In general, non-BES equipment that does not initiate BES equipment action, or has any effect on the BES should not be considered part of a transmission Protection System.</li> </ol>
<p><b>Response:</b> This particular request was for an interpretation of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p> <p>The interpretation applies to all situations where the Protection System in question “is designed to detect and initiate isolation of system faults on transmission elements identified as being included in the Bulk Electric System (BES).” If other circumstances exist that are not covered by this interpretation,</p>				

Voter	Entity	Segment	Vote	Comment
<p>the NERC Reliability Standards Development Procedure allows entities to request interpretations to address this need. It would be inappropriate to reject an interpretation of a standard because it may lead to further requests for interpretation.</p> <p>The phrase “The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)” has been replaced with “The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.”</p>				
Richard Salgo	Sierra Pacific Power Co.	1	Negative	I agree with the general concept of the interpretation. Such radial facilities ought not to be considered applicable to the requirements of the subject standards. However, the interpretation indicates that a radial transmission line feeding a distribution substation could be considered BES if the distribution station acted as the collector for small and insignificant amounts of generation (perhaps even an emergency generator at a customer premise). Clearly, there must be a threshold of significance above which there is an impact upon the otherwise radial line.
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.</p>				
Edward C Stein	Edward C Stein	8	Negative	I am voting no because a failure to trip of the low side distribution breakers will require that the high side breaker trips. Failure to do so may cause the BES breakers supplying the substation in question to trip.
<p><b>Response:</b> The drafting team concurs with this statement if the Regional Entity has included these facilities in its definition of the BES; however, they should not be included if the Regional Entity’s definition does not include these facilities.</p>				
Terry Harbour	MidAmerican Energy Co.	1	Negative	MidAmerican believes the interpretation goes beyond the role of an interpretation and that the defition of a Transmission Protection System should be considered using the SAR process.
<p><b>Response:</b> This particular request was for an interpretation of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p>				

Voter	Entity	Segment	Vote	Comment
Bud Tracy	Blachly-Lane Electric Co-op	3	Negative	<p>Blachly-Lane Electric Cooperative votes no on this ballot for the following reasons:</p> <p>1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC's generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.)</p> <p>2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus.</p> <p>3) In addition, we also believe that the term "the networked low side system" is too general. We believe that the following should be excluded from being considered as transmission Protection Systems:</p> <ul style="list-style-type: none"> <li>a) Networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and</li> <li>b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide 'meaningful' flow-through capability.</li> </ul> <p>4) The third paragraph, which re-iterates the Regional Entity's (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>

Voter	Entity	Segment	Vote	Comment
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.</p> <p>If the Protection System of the transformer’s primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to “networked low side system” in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a “transmission Protection System,” regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Dave Markham	Central Electric Cooperative, Inc. (Redmond, Oregon)	3	Negative	<p>Central Electric Cooperative votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC’s generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term “the networked low side system” is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak</p>

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				<p>Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide 'meaningful' flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity's (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a "transmission Protection System," regardless of the size of the generation sources that created the need.</p> <p>If the Protection System of the transformer's primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to "networked low side system" in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a "transmission Protection System," regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Dave Hagen	Clearwater Power Co.	3	Negative	<p>Clearwater Power Company votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC's generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of</p>



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				<p>clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term “the networked low side system” is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide ‘meaningful’ flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity’s (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.</p> <p>If the Protection System of the transformer’s primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to “networked low side system” in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a “transmission Protection System,” regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Roman Gillen	Consumers Power Inc.	3	Negative	<p>Consumers Power, Inc votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system</p>

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				<p>that connects a generator that meets NERC's generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term "the networked low side system" is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide 'meaningful' flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity's (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a "transmission Protection System," regardless of the size of the generation sources that created the need.</p> <p>If the Protection System of the transformer's primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to "networked low side system" in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a "transmission Protection System," regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				

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Roger Meader	Coos-Curry Electric Cooperative, Inc	3	Negative	<p>Coos-Curry Electric Cooperative votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC's generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term "the networked low side system" is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide 'meaningful' flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity's (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>

**Response:** The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a "transmission Protection System," regardless of the size of the generation sources that created the need.

If the Protection System of the transformer's primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating

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<p>action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to “networked low side system” in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a “transmission Protection System,” regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Dave Sabala	Douglas Electric Cooperative	3	Negative	<p>Douglas Electric Cooperative votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC’s generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term “the networked low side system” is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide ‘meaningful’ flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity’s (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>

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<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.</p> <p>If the Protection System of the transformer’s primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to “networked low side system” in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a “transmission Protection System,” regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Bryan Case	Fall River Rural Electric Cooperative	3	Negative	<p>Fall River Rural Electric Cooperative votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC’s generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term “the networked low side system” is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary</p>

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				sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide 'meaningful' flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity's (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a "transmission Protection System," regardless of the size of the generation sources that created the need.</p> <p>If the Protection System of the transformer's primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to "networked low side system" in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a "transmission Protection System," regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Michael Henry	Lincoln Electric Cooperative, Inc.	3	Negative	Lincoln Electric Cooperative votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC's generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of

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				<p>clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term “the networked low side system” is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide ‘meaningful’ flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity’s (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>

**Response:** The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.

If the Protection System of the transformer’s primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.

The reference to “networked low side system” in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a “transmission Protection System,” regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).

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Rick Crinklaw	Lane Electric Cooperative, Inc.	3	Negative	<p>Lane Electric Cooperative, Inc. votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC's generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term "the networked low side system" is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide 'meaningful' flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity's (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>

**Response:** The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a "transmission Protection System," regardless of the size of the generation sources that created the need.

If the Protection System of the transformer's primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating



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<p>action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to “networked low side system” in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a “transmission Protection System,” regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Richard Reynolds	Lost River Electric Cooperative	3	Negative	<p>Lost River Electric Cooperative votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC’s generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term “the networked low side system” is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide ‘meaningful’ flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity’s (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>

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<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.</p> <p>If the Protection System of the transformer’s primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to “networked low side system” in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a “transmission Protection System,” regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Jon Shelby	Northern Lights Inc.	3	Negative	<p>Northern Lights, Inc. votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC’s generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term “the networked low side system” is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at</p>

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				<p>voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide 'meaningful' flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity's (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a "transmission Protection System," regardless of the size of the generation sources that created the need.</p> <p>If the Protection System of the transformer's primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to "networked low side system" in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a "transmission Protection System," regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Ray Ellis	Okanogan County Electric Cooperative, Inc.	3	Negative	<p>Okanogan County Electric Cooperative votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC's generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the</p>

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				<p>transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term “the networked low side system” is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide ‘meaningful’ flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity’s (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.</p> <p>If the Protection System of the transformer’s primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to “networked low side system” in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a “transmission Protection System,” regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Aleka K Scott	Pacific Northwest Generating Cooperative	4	Negative	<p>PNGC Power votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC’s generator registration criteria</p>

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				<p>for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term “the networked low side system” is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide ‘meaningful’ flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity’s (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.</p> <p>If the Protection System of the transformer’s primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to “networked low side system” in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a “transmission Protection System,” regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Heber Carpenter	Raft River Rural Electric Cooperative	3	Negative	Raft River Rural Electric Cooperative votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system)

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				<p>and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC's generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term "the networked low side system" is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide 'meaningful' flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity's (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>

**Response:** The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a "transmission Protection System," regardless of the size of the generation sources that created the need.

If the Protection System of the transformer's primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.

The reference to "networked low side system" in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a "transmission Protection System," regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not

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mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).				
Ken Dizes	Salmon River Electric Cooperative	3	Negative	<p>Salmon River Electric Cooperative votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC's generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term "the networked low side system" is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide 'meaningful' flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity's (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a "transmission Protection System," regardless of the size of the generation sources that created the need.</p>				

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<p>If the Protection System of the transformer's primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to "networked low side system" in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a "transmission Protection System," regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Steve Eldrige	Umatilla Electric Cooperative	3	Negative	<p>Umatilla Electric Cooperative votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC's generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term "the networked low side system" is too general. We believe that the following should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide 'meaningful' flow-through capability. 4) The third paragraph, which re-iterates the Regional</p>



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				Entity's (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.</p> <p>If the Protection System of the transformer’s primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to “networked low side system” in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a “transmission Protection System,” regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Marc Farmer	West Oregon Electric Cooperative, Inc.	3	Negative	West Oregon Electric Cooperative, Inc. votes no on this ballot for the following reasons: 1) The second paragraph, second sentence of the NERC response, states: In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission faults, then these Protection Systems would be considered transmission Protection Systems. This sentence is much too general. As stated a 1 kW generator could cause a protective system to be included. We believe that PRC-004-1 and PRC-005-1 should only apply to a facility within a distribution system that connects a generator that meets NERC’s generator registration criteria for Generator Owner. (Currently this criterion is 20 MVA for a single unit and 75 MVA for aggregate units. We have chosen to reference the registration criterion, rather than the specific values, so that if thresholds change in the future this criterion would continue to consistent.) 2) Further, a Protection System for a transformer should only be considered a transmission Protection System if it is also be capable of clearing a high-current fault on the transmission side of the transformer, not just limited fault conditions from inside the transformer or on the low-side bus. 3) In addition, we also believe that the term “the networked low side system” is too general. We believe that the following

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				<p>should be excluded from being considered as transmission Protection Systems: a) networks serving only load from one transmission source, including radial transmission facilities with normally-open secondary sources, and b) Weak Loops operated at voltages below 200kV. Weak Loops are defined, in this context, as loops connected to the BES that provide redundancy to serve distribution but are not intended to and do not provide 'meaningful' flow-through capability. 4) The third paragraph, which re-iterates the Regional Entity's (WECC in this case) right to define the BES, should be retained. We strongly support this concept as it recognizes the significant regional differences.</p>
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a "transmission Protection System," regardless of the size of the generation sources that created the need.</p> <p>If the Protection System of the transformer's primary function is to provide protection for the transformer, and the transformer is not an element of the BES, then the Protection System is not covered by this interpretation. However, regardless of the magnitude of current involved, if the Protection System is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the BES and initiating action to clear the protected element from all local sources, then it is covered by this interpretation.</p> <p>The reference to "networked low side system" in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the Protection System would qualify as a "transmission Protection System," regardless of the voltage of the network voltage. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Gregory L. Pieper	Xcel Energy, Inc.	1	Negative	Please refer to Xcel Energy's segment 3 comments.
<p><b>Response:</b> There is no Xcel Energy Segment 3 comment.</p>				
Terry L Baker	Platte River Power Authority	3	Negative	PRPA does not believe the interpretation provides clarity, or consistency within the regions. Networked low side system needs to be defined.
<p><b>Response:</b> The term "networked low side system" in this case does not refer to any specific voltage level. It is used to identify location where the low side of the transformer has a normally closed system configuration to another system source. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				

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Catherine Koch	Puget Sound Energy, Inc.	1	Negative	PSE generally supports the response to the question however the last sentence creates confusion as to what "variance in the Regional Entity definitions of the BES" means. Please clarify the response to describe if the Regional Entity definition of the BES must be formally approved by FERC or NERC or whether it can be made defined informally. The ability for a Registered Entity to know how NERC's response to this question can vary needs to be clear and transparent. PSE understands that at this point since WECC does not have a FERC approved definition of the BES different from NERC, PSE assumes there is no regional variation to what NERC's response is as provided. Please confirm that PSE is interpreting the last sentence of NERC's response correctly as it applies to the WECC region.
<p><b>Response:</b> The phrase “specific clarification may be required” is meant to identify that there are differences among Region Entities in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES within a given Regional Entity, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” But they would be considered as such within a Regional Entity that includes radial lines in its BES definition.</p> <p>Under present standards, the definition of the BES is assigned to the Regional Entity. Each Region has a definition of the BES and has provided that definition to NERC.</p> <p>The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
William SeDoris	Northern Indiana Public Service Co.	3	Negative	The final sentence in the interpretation appears to be a disclaimer that needs to be addressed. Variance in Regional Entity definitions of the BES should be eliminated by NERC especially since there are entities that span multiple regions
Joseph O'Brien		6		
<p><b>Response:</b> The Drafting Team acknowledges this fact and acknowledges that there are differences in the Regional Entity definitions of the BES; however, under present standards, the definition of the BES is assigned to the Regional Entity. Each Region has a definition of the BES and has provided that definition to NERC. The phrase “specific clarification may be required” is meant to identify that there are differences among Regional Entities in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a given Region, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of</p>				

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the regional definition, if needed, should be directed to the appropriate Regional Entity.”				
Fred E. Young	Northern California Power Agency	4	Negative	The interpretation leaves the door open for the Regional Entities to make the determination. This provides additional ambiguity and uncertainty.
<p><b>Response:</b> The Drafting Team acknowledges this fact and acknowledges that there are differences in the Regional Entity definitions of the BES; however, under present standards, the definition of the BES is assigned to the Regional Entity. Each Regional Entity has a definition of the BES and has provided that definition to NERC. The phrase “specific clarification may be required” is meant to identify that there are differences among Regions in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a given Region, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
Daniel Duff	Liberty Electric Power LLC	5	Negative	The interpretation leaves the question unresolved. The phrase "specific clarification may be required from the appropriate RC" negates the guidance in paragraph 2, and leaves the requesting entities without a resolution of the question.
<p><b>Response:</b> The Drafting Team acknowledges this fact and acknowledges that there are differences in the Regional Entity definitions of the BES; however, under the present standards process, the definition of the BES is assigned to the Regional Entity. Each Regional Entity has a definition of the BES and has provided that definition to NERC. The phrase “specific clarification may be required” is meant to identify that there are differences among Regions in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a given Region, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
Gordon Pietsch	Great River Energy	1	Negative	The last sentence of the interpretation removes the clarity that the first two paragraphs has created.
Sam Kokkinen		3		

Voter	Entity	Segment	Vote	Comment
Cynthia E Sulzer  Donna Stephenson		5  6		
<p><b>Response:</b> The Drafting Team acknowledges this fact and acknowledges that there are differences in the Regional Entity definitions of the BES; however, under the present standards process, the definition of the BES is assigned to the Regional Entity. Each Regional Entity has a definition of the BES and has provided that definition to NERC. The phrase “specific clarification may be required” is meant to identify that there are differences among Regions in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a given Region, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
Robert Kondziolka  John T Underhill  Glen Reeves  Mike Hummel	Salt River Project	1  3  5  6	Negative	SRP believes that the protective relays (Differential and Overcurrent) for transformers tapped off a Bulk Electric System line should be included under PRC-005 and PRC-004. In reality, the line relaying will not be able to discern a difference between a fault on the line and a fault on the high voltage winding of the transformer. Therefore, a transformer fault can and will cause the line from which it is tapped to trip. The relays protecting the transformer are just as important as the relays protecting the BES facility.
<p><b>Response:</b> The subject Protection Systems are covered by this interpretation only if the transformers noted are included in the scope of the Regional Entity definition of the BES. The drafting team believes the commenter’s recommendation would modify the applicability of the standard.</p>				

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Henry G. Masti	New York State Electric & Gas Corp.	1	Negative	<p>The interpretation appears to “define” transmission Protection System, but in accordance with the Reliability Standards Development Procedure, an interpretation is not the appropriate process for defining a NERC term.</p> <p>* This interpretation appears to be applicable to a particular circumstance of a protection system. It is quite likely that this action will generate numerous other interpretation requests for variations of this system configuration and protection designs.</p> <p>* Finally, in the phrase “...designed to detect and initiate action for...” the interpretation seems to blur the distinction between a transmission protection system and a Special Protection System. In general, non-BES equipment that does not initiate BES equipment action, or has any effect on the BES should not be considered part of a transmission Protection System</p>
<p><b>Response:</b> This particular request was for an interpretation of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p> <p>The interpretation applies to all situations where the Protection System in question “is designed to detect and initiate action for system faults on transmission elements identified as being included in the BES.” If other circumstances exist that are not covered by this interpretation, the NERC Reliability Standards Development Procedure allows entities to request interpretations to address this need. It would be inappropriate to reject an interpretation of a standard because it may lead to further requests for interpretation.</p> <p>The phrase “The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)” has been replaced with “The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.”</p>				
Peter T Yost	Consolidated Edison Co. of New York	3	Negative	<p>The interpretation appears to “define” transmission Protection System, but in accordance with the Reliability Standards Development Procedure, an interpretation is not the appropriate process for defining a NERC term. *</p> <p>This interpretation appears to be applicable to a particular circumstance of a protection system. It is quite likely that this action will generate numerous other interpretation requests for variations of this system configuration and protection designs. *</p> <p>Finally, in the phrase “...designed to detect and initiate action for...” the interpretation seems to blur the distinction between a transmission protection system and a Special Protection System. In</p>

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				<p>general, non-BES equipment that does not initiate BES equipment action, or has any effect on the BES should not be considered part of a transmission Protection System</p>
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<p>Christopher L de Graffenried</p>	<p>Consolidated Edison Co. of New York</p>	<p>1</p>	<p>Negative</p>	<p>The NPCC Regional Standards Committee (RSC) has conducted an extensive review of the interpretation. The RSC has reached a consensus and is recommending a vote to "reject" the interpretation with the following comments. * The interpretation appears to “define” transmission Protection System, but in accordance with the Reliability Standards Development Procedure, an interpretation is not the appropriate process for defining a NERC term. * This interpretation appears to be applicable to a particular circumstance of a protection system. It is quite likely that this action will generate numerous other interpretation requests for variations of this system configuration and protection designs. * Finally, in the phrase “...designed to detect and initiate action for...” the interpretation seems to blur the distinction between a transmission protection system and a Special Protection System. In general, non-BES equipment that does not initiate BES equipment action, or has any effect on the BES should not be considered part of a transmission Protection System.</p>
<p><b>Response:</b> This particular request was for an interpretation of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p> <p>The interpretation applies to all situations where the Protection System in question “is designed to detect and initiate action for system faults on transmission elements identified as being included in the BES.” If other circumstances exist that are not covered by this interpretation, the NERC Reliability Standards</p>				

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<p>Development Procedure allows entities to request interpretations to address this need. It would be inappropriate to reject an interpretation of a standard because it may lead to further requests for interpretation.</p> <p>The phrase “The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)” has been replaced with “The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.”</p>				
Diane J. Barney	National Association of Regulatory Utility Commissioners	9	Negative	The interpretation appears to offer a definition for "transmission Protection System" which can only take place through the SAR process.
<p><b>Response:</b> This particular request was for an ‘interpretation’ of the specific phrase “transmission Protection System”, which is used in these Standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p>				
Donald E. Nelson	Commonwealth of Massachusetts Department of Public Utilities	9	Negative	The interpretation appears to offer a definition for "Transmission Protection System" which can only take place through the SAR process.
<p><b>Response:</b> This particular request was for an interpretation of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p>				
Larry E Watt	Lakeland Electric	1	Negative	This standard update seems to change the definitino of a protection system. If this is the intent - then this process needs to begin with a SAR.
<p><b>Response:</b> This particular request was for an interpretation of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p>				
Karl Bryan	U.S. Army Corps of Engineers Northwestern Division	5	Negative	The interpretation did not address the disparity between the 2 Regional Entities examples given.
<p><b>Response:</b> The Drafting Team acknowledges this fact and acknowledges that there are differences in the Regional Entity definitions of the BES; however, under the present standards process, the definition of the BES is assigned to the Regional Entity. Each Regional Entity has a definition of the BES and has</p>				



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<p>provided that definition to NERC.</p> <p>The phrase “specific clarification may be required” is meant to identify that there are differences among Regions in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a given Region, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
<p>Michael Gammon</p> <p>Charles Locke</p> <p>Thomas Saitta</p>	<p>Kansas City Power &amp; Light Co.</p>	<p>1</p> <p>3</p> <p>6</p>	<p>Negative</p>	<p>The interpretation offered here does not substantially provide a clarification of what constitutes equipment that falls inside the BES and the PRC-004 and PRC-005 requirements. There are many different types of transmission configurations involving radial transformers with load and generation which makes this interpretation an extremely difficult challenge to fully express and clarify.</p>
<p><b>Response:</b> The interpretation applies to all situations where the Protection System in question is designed to detect and initiate isolation of system faults on transmission elements identified as being included in the BES. The phrase “The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)” has been replaced with “The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.”</p>				
<p>Scott Heidtbrink</p>	<p>Kansas City Power &amp; Light Co.</p>	<p>5</p>	<p>Negative</p>	<p>Not a good enough clarification of what constitutes equipment that falls inside the BES and the PRC-004 and PRC-005 requirements.</p>
<p><b>Response:</b> The interpretation applies to all situations where the Protection System in question is designed to detect and initiate isolation of system faults on transmission elements identified as being included in the BES. The phrase “The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)” has been replaced with “The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.”</p>				
<p>James Tucker</p>	<p>Deseret Power</p>	<p>1</p>	<p>Negative</p>	<p>The notion that if there is any source on the radial system makes it a protection system is a problem for me.</p>

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<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.</p>				
Denise Roeder	North Carolina Municipal Power Agency #1	3	Negative	<p>The original Request for Clarification gave opposing illustrations of how radially-connected transformer protection systems have been viewed by different regions. The first paragraph of the response seems clear that the relevant systems are only those identified as part of the BES. However, the second paragraph that addresses radially-connected transformer protection systems, by not mentioning the BES specifically, still leaves it unclear whether there could be inconsistencies in the application of these standards when left to specific clarification by the Regional Entities. It would have been better if the second paragraph also included the term "BES" when discussing the circumstances of a radial connection that would be included. The response should have said the standards are applicable for systems installed to detect and initiate actions for "BES" transmission system faults.</p>
<p><b>Response:</b> The phrase “specific clarification may be required” is meant to identify that there are differences among Regions in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a given Region, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p> <p>The first paragraph of the interpretation states “any Protection Systems that is designed.... on transmission elements... included in the BES.” It does not say that these Protection Systems are “identified as being on the BES.”</p> <p>The drafting team acknowledges that the differences in the Regional Entity definitions of the BES can result in different applicability of the standards being addressed in this interpretation. This interpretation is limited to the phrase “transmission Protection System.” Resolving differences in Regional Entity definitions of the BES is beyond the scope of this project.</p>				

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James B Lewis	Consumers Energy	5	Negative	The paragraph in the interpretation beginning with "In general, a radially..." is overly broad. The simple act of connecting a 5 kw wind turbine or similar sized low head hydro unit (an infinitesimal potential source) to "the transformer low side" should not create a part of a transmission Protection System. I believe this could be addressed by setting a size requirement for the potential source such as a size which required listing on the compliance registry.
<p><b>Response:</b> The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a "transmission Protection System," regardless of the size of the generation sources that created the need.</p>				
Jeff Knottek	City Utilities of Springfield, Missouri	1	Negative	The second paragraph of the interpretation only adds more confusion to the issue. The first paragraph defined which protection systems apply. "In general" leads us to wonder what are the exceptions? Is this going to require another interpretation? Unless every possible scenario is addressed, there will be questions. This paragraph should be deleted. Also, there needs to be consistency amongst regions for what the BES is.
<p><b>Response:</b> The interpretation applies to all situations where the Protection System in question "is designed to detect and initiate isolation of system faults on transmission elements identified as being included in the Bulk Electric System (BES)." If other circumstances exist that are not covered by this interpretation, the NERC Reliability Standards Development Procedure allows entities to request interpretations to address this need. It would be inappropriate to reject an interpretation of a standard because it may lead to further requests for interpretation. The phrase "The term transmission Protection System is applicable to any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)" has been replaced with "The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources."</p>				
Brad Chase	Orlando Utilities Commission	1	Negative	This Interpretation goes beyond the accepted role of an interpretation, and changes the requirements of PRC-004 and PRC-005 by introducing a definition of "transmission Protection System" which is in conflict with RFC's Bulk Electric System Definition and RFC's procedures for analyzing misoperations and implementing Corrective Action Plans.
<p><b>Response:</b> This particular request was for an interpretation of the specific phrase "transmission Protection System," which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p>				

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Liam Noailles	Northern States Power Co.	5	Negative	We are supportive of the interpretation describing how a radially connected transformer protection system is treated. However the language regarding a “potential source” introduces further confusion. We believe that if language regarding potential sources is to be included in the interpretation then it should be clarified so as to not require additional interpretation.
<p><b>Response:</b> The reference to “networked low side system” in this interpretation intentionally does not refer to any specific voltage level. Once it has been determined that the network source creates a need for such relaying to detect faults on transmission elements, the protection system would qualify as a “transmission Protection System,” regardless of the voltage of the network voltage.</p>				
David F. Lemmons	Xcel Energy, Inc.	6	Negative	We are supportive of the interpretation describing how a radially connected transformer protection system is treated. However the language regarding a “potential source” introduces further confusion. We believe that if language regarding potential sources is to be included in the interpretation then it should be clarified so as to not require additional interpretation.
<p><b>Response:</b> The term “networked low side system” in this case does not refer to any specific voltage level. It is used to identify location where the low side of the transformer has a normally closed system configuration to another system source. The strength of the system (provide meaningful flow-through capability) does not mitigate the need to have appropriate protection schemes in place to protect the transmission element and de-energize the element (remove it from all sources).</p>				
Louise McCarren	Western Electricity Coordinating Council	10	Negative	<p>We would consider the protection system for a transformer with a High Side Voltage greater than 100Kv, connected to a transmission line at greater than 100KV by a tap as a BES protection system if:</p> <ol style="list-style-type: none"> <li>1) the transformer tap connection had two power supplies. Or</li> <li>2) the transformer protection system had direct communication with another BES relay or protection system such as a transfer trip.</li> </ol> <p>The current definition of BES specifies that a radial transmission line serving only load is not considered as BES IF there is only a single power source. WECC considers these tapped connections as having two power sources. We also believe these transformer protection systems for this configuration should be considered as BES protection systems and subject to PRC-005 because of the potential impact on the BES should they fail to operate. If a tapped transformer has a relay protection failure, the backup protection would be 2 remote breakers in the BES which would isolate not</p>

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				only the affected transformer and its load but any other tapped circuits between the open breakers and also would remove a section of BES transmission from service. It is clear that a failure or misoperation of this transformer protection equipment would impact the BES and we believe it should be considered as an applicable BES protection system.
<p><b>Response:</b> The Drafting Team acknowledges this fact and acknowledges that there are differences in the Regional Entity definitions of the BES; however, under the present standards process, the definition of the BES is assigned to the Regional Entity. Each Regional Entity has a definition of the BES and has provided that definition to NERC. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
Paul B. Johnson	American Electric Power	1	Negative	While AEP generally agrees with the response offered in the interpretation, we do not believe that is appropriate to define a term used in the standard through an interpretation, especially where it changes the meaning of requirements, rather than through the standard development process. It also concerns AEP that there seem to be regional differences in what constitutes the BES and that this interpretation is in conflict with some of the regions. Without a common knowledge of what constitutes the BES, it only creates a greater lack of clarity as Interpretations attempt to stipulate what is included and what is not included in the BES, particularly when it differs from the regions.
<p><b>Response:</b> This particular request was for an “interpretation” of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p> <p>The phrase “specific clarification may be required” is meant to identify that there are differences among Regions in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a given Region, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				

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Raj Rana	American Electric Power	3	Negative	While AEP generally agrees with the response offered in the interpretation, we do not believe that is appropriate to define a term used in the standard through an interpretation, especially where it changes the meaning of requirements, rather than through the standard development process. It also concerns AEP that there seem to be regional differences in what constitutes the BES and that this interpretation is in conflict with some of the regions. Without a common knowledge of what constitutes the BES, it only creates a greater lack of clarity as Interpretations attempt to stipulate what is included and what is not included in the BES, particularly when it differs from the regions.
<p><b>Response:</b> This particular request was for an interpretation of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p> <p>The phrase “specific clarification may be required” is meant to identify that there are differences among Regions in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a given Region, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
Brock Ondayko	AEP Service Corp.	5	Negative	While AEP generally agrees with the response offered in the interpretation, we do not believe that is appropriate to define a term used in the standard through an interpretation, especially where it changes the meaning of requirements, rather than through the standard development process. It also concerns AEP that there seem to be regional differences in what constitutes the BES and that this interpretation is in conflict with some of the regions. Without a common knowledge of what constitutes the BES, it only creates a greater lack of clarity as Interpretations attempt to stipulate what is included and what is not included in the BES, particularly when it differs from the regions.
<p><b>Response:</b> This particular request was for an “interpretation” of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p> <p>The phrase “specific clarification may be required” is meant to identify that there are differences among Regions in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a</p>				

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<p>given Region, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
Edward P. Cox	AEP Marketing	6	Negative	<p>While AEP generally agrees with the response offered in the interpretation, we do not believe that is appropriate to define a term used in the standard through an interpretation, especially where it changes the meaning of requirements, rather than through the standard development process. It also concerns AEP that there seem to be regional differences in what constitutes the BES and that this interpretation is in conflict with some of the regions. Without a common knowledge of what constitutes the BES, it only creates a greater lack of clarity as Interpretations attempt to stipulate what is included and what is not included in the BES, particularly when it differs from the regions.</p>
<p><b>Response:</b> This particular request was for an “interpretation” of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p> <p>The phrase “specific clarification may be required” is meant to identify that there are differences among Regions in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a given Region, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
Kenneth Goldsmith	Alliant Energy Corp. Services, Inc.	4	Affirmative	<p>While I am voting affirmative, we believe this is a misuse of the interpretation process. This should go through the SAR process.</p>
<p><b>Response:</b> The Team acknowledges your affirmative response and thanks you for your clarifying comment.</p> <p>This particular request was for an interpretation of the specific phrase “transmission Protection System,” which is used in these standards. The response only clarifies use of this term in the context of these standards and does not propose a new defined term.</p>				

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Robert Martinko	FirstEnergy Energy Delivery	1	Affirmative	FirstEnergy generally supports the Interpretation and is voting AFFIRMATIVE, but believes the last paragraph only confuses the matter and should be removed from the Interpretation. For both Regional Entity examples the interpretation response provides clarity and the same endpoint can now be reached regarding what would be in and out of scope for the transmission Protection System. The first two paragraphs are sufficient to address the question raised regarding what constitutes a "transmission Protection System" with the key phrase in the response being "... any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc) identified as being included in the Bulk Electric System (BES)."
<p><b>Response:</b> The Team acknowledges your affirmative response and thanks you for your clarifying comment.</p> <p>The phrase "specific clarification may be required" is meant to identify that there are differences among Regions in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a given Region, the protection schemes installed to detect faults on a radial line are not considered "transmission Protection Systems." However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase "It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity" has been replaced with "It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity."</p>				
Joanne Kathleen Borrell	FirstEnergy Solutions	3	Affirmative	FirstEnergy generally supports the Interpretation and is voting AFFIRMATIVE, but believes the last paragraph only confuses the matter and should be removed from the Interpretation. For both Regional Entity examples the interpretation provides clarity and the same endpoint can now be reached regarding what would be in and out of scope for the transmission Protection System. The first two paragraphs are sufficient to address the question raised regarding what constitutes a "transmission Protection System" with the key phrase in the response being "... any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc) identified as being included in the Bulk Electric System (BES)."
Kenneth Dresner		5		
Mark S Travaglianti		6		
<p><b>Response:</b> The Team acknowledges your affirmative response and thanks you for your clarifying comment.</p> <p>The phrase "specific clarification may be required" is meant to identify that there are differences among Regions in what facilities are included in the BES;</p>				



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<p>therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a given Region, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
Douglas Hohlbaugh	Ohio Edison Company	4	Affirmative	<p>FirstEnergy generally supports the Interpretation and is voting AFFIRMATIVE, but believes the last paragraph only confuses the matter and should be removed from the Interpretation. For both Regional Entity examples the interpretation response provides clarity and the same endpoint can now be reached regarding what would be in and out of scope for the transmission Protection System. The first two paragraphs are sufficient to address the question raised regarding what constitutes a "transmission Protection System" with the key phrase in the response being "... any Protection System that is designed to detect and initiate action for system faults on transmission elements (lines, buses, transformers, etc) identified as being included in the Bulk Electric System (BES)."</p>
<p><b>Response:</b> The Team acknowledges your affirmative response and thanks you for your clarifying comment.</p> <p>The phrase “specific clarification may be required” is meant to identify that there are differences among Regions in what facilities are included in the BES; therefore, the interpretation is contingent on the Regional Entity definition of the BES. For instance, if radial lines are not considered as part of the BES in a given Region, the protection schemes installed to detect faults on a radial line are not considered “transmission Protection Systems.” However, they would be considered as such in a Regional Entity that includes radial lines in its BES definition. The phrase “It should also be noted that due to the variance in the Regional Entity definitions of the BES, specific clarification may be required from the appropriate Regional Entity” has been replaced with “It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.”</p>				
Harold Taylor, II	Georgia Transmission Corporation	1	Affirmative	<p>I would like to see a more firm stand on what constitutes transmission asset/protection and what is distribution. Example: A distribution provider may have a peak shaving generator with no intention of export to the transmission system. A reverse power relay applied to the bank lowside may be designated as transmission protection, but bank differentials and backup overcurrents should not be. Example: Transmission breakers may be required to protect distribution banks due to available fault current but they should not be considered as being applied for transmission protection.</p>

Voter	Entity	Segment	Vote	Comment
<p><b>Response:</b> The Team acknowledges your affirmative response and thanks you for your clarifying comment.</p> <p>The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.</p>				
James A Ziebarth	Y-W Electric Association, Inc.	4	Affirmative	<p>Y-WEA thanks the standard drafting team for their work on this interpretation. While we have some serious reservations about the clarity of the language in the interpretation regarding protection systems installed where there may be a generator connected downline, Y-WEA feels that the need for a general exclusion of protection systems for radial facilities outweighs these concerns. It should be noted, however, that the language about downstream connected generators and the design intent of a protection system could potentially be broadly interpreted and applied unless the drafting team added to the interpretation some additional criteria relating to generator size and/or specifically who makes the determination as to the intended design of a protection system and whether or not the protection system was intended to react to transmission system faults.</p>
<p><b>Response:</b> The Team acknowledges your affirmative response and thanks you for your clarifying comment.</p> <p>The need for the installation of the subject relays may be dependent on the system configuration and the size of the installed generator. Once it has been determined that such relaying is needed in order to detect system faults on transmission elements, it would qualify as a “transmission Protection System,” regardless of the size of the generation sources that created the need.</p>				
Terry Bilke	Midwest ISO, Inc.	2	Abstain	<p>Several of our members have expressed concern with this interpretation. We would like to hear others' positions before casting a final ballot.</p>
<p><b>Response:</b> The Team acknowledges your response and thanks you for your clarifying comment.</p>				

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

Request for an Interpretation of a Reliability Standard	
<b>Date submitted:</b> <a href="#">March 25, 2009</a>	
<b>Contact information for person requesting the interpretation:</b>	
<b>Name:</b>	<a href="#">James A. Ziebarth</a> <a href="#">T. William Middaugh</a>
<b>Organization:</b>	<a href="#">Y-W Electric Association, Inc.</a> <a href="#">Tri-State Generation &amp; Transmission Association, Inc.</a>
<b>Telephone:</b>	<a href="#">(970) 345-2291</a> <a href="#">(303) 254-3433</a>
<b>E-mail:</b>	<a href="mailto:james@hea.coop">james@hea.coop</a> <a href="mailto:bmiddaugh@tristategt.org">bmiddaugh@tristategt.org</a>
<b>Identify the standard that needs clarification:</b>	
<b>Standard Number (include version number):</b> <a href="#">PRC-004-1</a> and <a href="#">PRC-005-1</a>	
<b>Standard Title:</b> <a href="#">Analysis &amp; Mitigation of Transmission/Generation Protection System Misoperations; Transmission &amp; Generation Protection System Maintenance &amp; Testing</a>	
<b>Identify specifically what needs clarification</b>	
<b>Requirement Number and Text of Requirement:</b>	
<b>In Standard PRC-004-1:</b>	
<p><b>R1.</b> The Transmission Owner and any Distribution Provider that owns a transmission Protection System shall each analyze its transmission Protection System Misoperations and shall develop and implement a Corrective Action Plan to avoid future Misoperations of a similar nature according to the Regional Reliability Organization's procedures developed for Reliability Standard PRC-003 Requirement 1.</p> <p><b>R3.</b> The Transmission Owner, any Distribution Provider that owns a transmission Protection System, and the Generator Owner shall each provide to its Regional Reliability Organization, documentation of its Misoperations analyses and Corrective Action Plans according to the Regional Reliability Organization's procedures developed for PRC-003 R1.</p>	
<b>In Standard PRC-005-1:</b>	
<p><b>R1.</b> Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall have a Protection System maintenance and testing program for Protection Systems that affect the reliability of the BES. The program shall include:</p> <p><b>R1.1.</b> Maintenance and testing intervals and their basis.</p>	

**R1.2.** Summary of maintenance and testing procedures.

**R2.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization on request (within 30 calendar days). The documentation of the program implementation shall include:

**R2.1.** Evidence Protection System devices were maintained and tested within the defined intervals.

**R2.2.** Date each Protection System device was last tested/maintained.

**Clarification needed:**

Y-W Electric Association, Inc. (Y-WEA) and Tri-State Generation and Transmission Association, Inc. (Tri-State) respectfully request an interpretation of the term "transmission Protection System" and specifically whether protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System and is subject to these standards.

**Background:**

The requirements above from PRC-004-1 and PRC-005-1 refer to "the Transmission Owner and any Distribution Provider that owns a transmission Protection System" and place various testing and reporting requirements on these entities. The term "Protection System" is defined in the NERC glossary, and other interpretation requests currently under consideration cover the fine details of what this term means. However, these standards narrow the scope of their applicability to "transmission" Protection Systems. Unfortunately, this narrowing causes much confusion as to the applicability of these standards because the entire term "Transmission Protection System" is not defined anywhere in NERC's documentation.

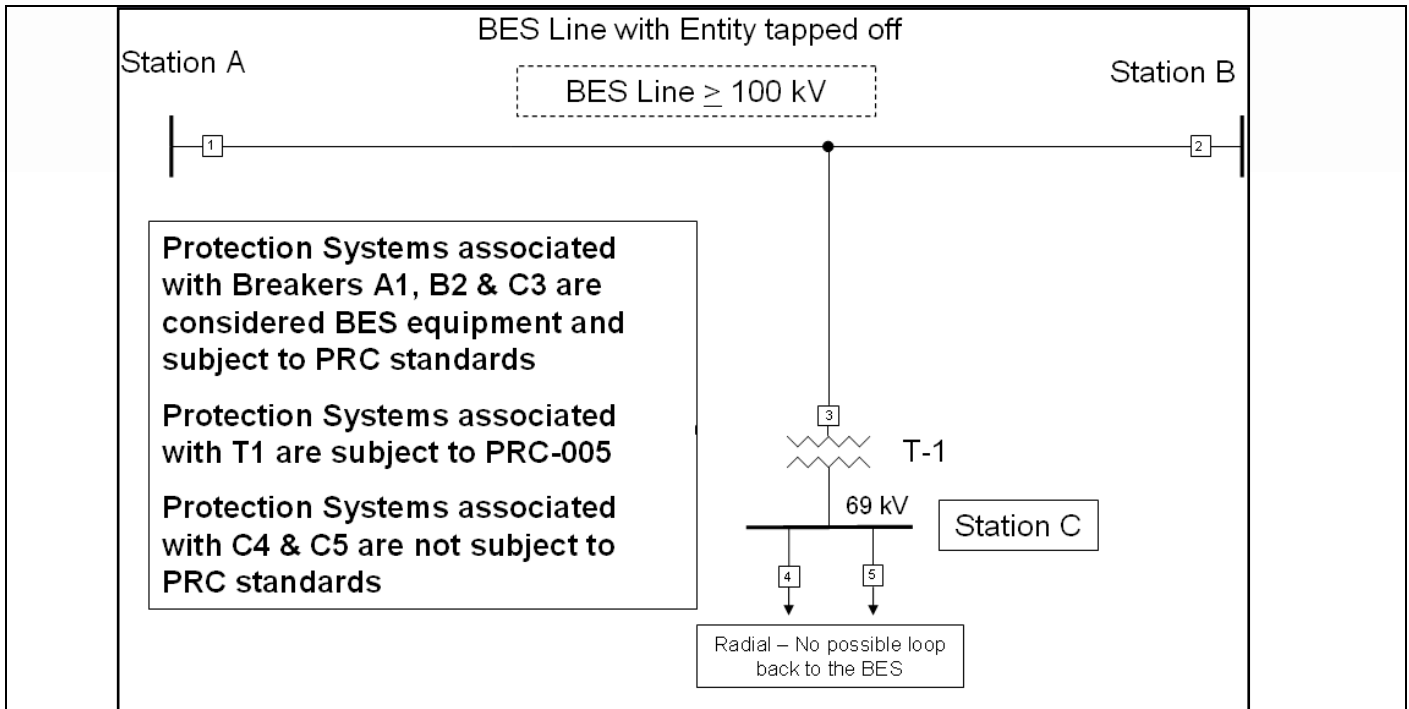
There is some debate as to what constitutes a transmission Protection System, versus any other Protection System. For example, consider a tap from a looped 115 kV transmission system where this tap consists of a step-down power transformer and its associated distribution system. The Protection System includes the transformer protection equipment (overcurrent and differential relaying with a circuit switcher) and the associated distribution system protection equipment (usually reclosers). For this example, all connected distribution facilities are designed to be radial in nature and are normally operated radially, with only the possibility of being briefly connected in parallel with other distribution facilities during switching to feed this load from another substation while this substation is taken out of service.

In this example, the looped 115 kV transmission system may be part of the Bulk Electric System and its protective relays and breakers located at the endpoints of this line section would be considered transmission Protection Systems and be subject to these standards. The status of the transformer protection equipment is unclear, though. The protective relays and the circuit switcher are connected at or attached to equipment that is connected at 115 kV, but this equipment is essentially connected to the BES radially, serves radial load, and is not necessarily designed to protect the transmission system to which it is connected. In fact, in many cases this equipment is designed strictly to protect the transformer from overloads and through-faults relating to the connected distribution system as well as to minimize transformer damage resulting from internal faults by rapidly de-energizing the transformer for such internal faults.

There is a lack of consistent application or interpretation of these rules between various Regional Entities. For instance, ReliabilityFirst Corporation's Appendix A to their Bulk Electric System Definition shown below (available at <http://www.rfirst.org/Documents/AboutUs/Members/RFC%20BES%20Definition.pdf>) directly addresses this question, indicating that the transformer protection equipment in the above example would not be considered a transmission Protection System.

ReliabilityFirst Corp.	Bulk Electric System Definition
<p><b>Example 1B:</b> In another example, if a 138/12.47 kV distribution transformer is tapped from a networked 138 kV line which is included in the BES, and that transformer has protective relays (such as differential relays) that trip <u>only</u> the distribution transformer out-of-service and do not trip the networked 138 kV line; then those protective relays are <u>not included</u> as part of the BES definition. Breaker failure relaying on Breaker A, if any, is included if operation results in tripping of the networked 138kV line (Reference Diagram 1B.)</p>	
<p>Diagram 1B</p> <p>Relays protecting non-BES facility (e.g. transformer with secondary windings less than 100 kV) and tripping Breaker A are <u>not included</u> as part of BES.</p>	

However, slide 42 of Western Electricity Coordinating Council's PowerPoint presentation from their August 12, 2008 Relay Workshop (available at <http://www.wecc.biz/documents/library/compliance/2008/2008%2008%2012%20-%20Relay%20Workshop%20-%20Portland,%20OR%20-%20Presentation.ppt>) and shown below, also directly addresses this question, indicating that the equipment in the example above would be considered a transmission Protection System and would be subject to PRC-004-1 and PRC-005-1.



These issues stem from the fact that the term "transmission Protection System" is not clearly defined.

**Identify the material impact associated with this interpretation:**

**Identify the material impact to your organization or others caused by the lack of clarity or an incorrect interpretation of this standard.**

Depending upon the interpreted definition of the term "transmission Protection System," Y-WEA and other Tri-State members who are Distribution Providers and own substations connecting to the BES for power delivery from a wholesale provider as well as Tri-State and other Transmission Owners could be directly and materially affected by these standards. Y-WEA and other Tri-State members are compliant with these NERC standards. We believe the applicability of WECC's more stringent interpretation must be clarified for uniform enforcement.

Alleged violations from a WECC audit where these standards were not thought to be applicable could result in sanctions and civil penalties.

**Project 2009-17: Response to Request for an Interpretation of PRC-004-1 and PRC-005-1 for Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc.**

The following interpretation of PRC-004-1 — Analysis & Mitigation of Transmission and Generation Protection System Misoperations Requirements R1 and R3 and PRC-005-1 – Transmission and Generation Protection System Maintenance and Testing Requirements R1 and R2 was developed by the System Protection and Controls Subcommittee.

**Requirement Number and Text of Requirement**

**PRC-004-1:**

**R1.** The Transmission Owner and any Distribution Provider that owns a transmission Protection System shall each analyze its transmission Protection System Misoperations and shall develop and implement a Corrective Action Plan to avoid future Misoperations of a similar nature according to the Regional Reliability Organization’s procedures developed for Reliability Standard PRC-003 Requirement 1.

**R3.** The Transmission Owner, any Distribution Provider that owns a transmission Protection System, and the Generator Owner shall each provide to its Regional Reliability Organization, documentation of its Misoperations analyses and Corrective Action Plans according to the Regional Reliability Organization’s procedures developed for PRC-003 R1.

**PRC-005-1:**

**R1.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall have a Protection System maintenance and testing program for Protection Systems that affect the reliability of the BES. The program shall include:

**R1.1.** Maintenance and testing intervals and their basis.

**R1.2.** Summary of maintenance and testing procedures.

**R2.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization on request (within 30 calendar days). The documentation of the program implementation shall include:

**R2.1.** Evidence Protection System devices were maintained and tested within the defined intervals.

**R2.2.** Date each Protection System device was last tested/maintained.

**Question**

Y-W Electric Association, Inc. (Y-WEA) and Tri-State Generation and Transmission Association, Inc.

(Tri-State) respectfully request an interpretation of the term "transmission Protection System" and specifically whether protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System and is subject to these standards.

### **Response**

The request for interpretation of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2 focuses on the applicability of the term "transmission Protection System." The NERC *Glossary of Terms Used in Reliability Standards* contains a definition of "Protection System" but does not contain a definition of transmission Protection System. The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.

In general, a radially connected transformer protection system energized from the BES would not be considered a transmission Protection System. In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission system faults, then these Protection Systems would be considered transmission Protection Systems.

It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.



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

Request for an Interpretation of a Reliability Standard	
<b>Date submitted:</b> <a href="#">March 25, 2009</a>	
<b>Contact information for person requesting the interpretation:</b>	
<b>Name:</b>	<a href="#">James A. Ziebarth</a> <a href="#">T. William Middaugh</a>
<b>Organization:</b> <a href="#">Y-W Electric Association, Inc.</a> <a href="#">Tri-State Generation &amp; Transmission Association, Inc.</a>	
<b>Telephone:</b>	<a href="#">(970) 345-2291</a> <a href="#">(303) 254-3433</a>
<b>E-mail:</b>	<a href="mailto:james@hea.coop">james@hea.coop</a> <a href="mailto:bmiddaugh@tristategt.org">bmiddaugh@tristategt.org</a>
<b>Identify the standard that needs clarification:</b>	
<b>Standard Number (include version number):</b> <a href="#">PRC-004-1</a> and <a href="#">PRC-005-1</a>	
<b>Standard Title:</b> <a href="#">Analysis &amp; Mitigation of Transmission/Generation Protection System Misoperations; Transmission &amp; Generation Protection System Maintenance &amp; Testing</a>	
<b>Identify specifically what needs clarification</b>	
<b>Requirement Number and Text of Requirement:</b>	
<b>In Standard <a href="#">PRC-004-1</a>:</b>	
<p><b>R1.</b> The Transmission Owner and any Distribution Provider that owns a transmission Protection System shall each analyze its transmission Protection System Misoperations and shall develop and implement a Corrective Action Plan to avoid future Misoperations of a similar nature according to the Regional Reliability Organization's procedures developed for Reliability Standard PRC-003 Requirement 1.</p> <p><b>R3.</b> The Transmission Owner, any Distribution Provider that owns a transmission Protection System, and the Generator Owner shall each provide to its Regional Reliability Organization, documentation of its Misoperations analyses and Corrective Action Plans according to the Regional Reliability Organization's procedures developed for PRC-003 R1.</p>	
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Protection Systems that affect the reliability of the BES. The program shall include:

**R1.1.** Maintenance and testing intervals and their basis.

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**Clarification needed:**

Y-W Electric Association, Inc. (Y-WEA) and Tri-State Generation and Transmission Association, Inc. (Tri-State) respectfully request an interpretation of the term "transmission Protection System" and specifically whether protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System and is subject to these standards.

**Background:**

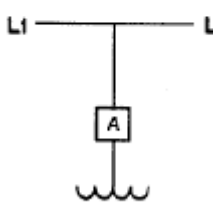
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There is some debate as to what constitutes a transmission Protection System, versus any other Protection System. For example, consider a tap from a looped 115 kV transmission system where this tap consists of a step-down power transformer and its associated distribution system. The Protection System includes the transformer protection equipment (overcurrent and differential relaying with a circuit switcher) and the associated distribution system protection equipment (usually reclosers). For this example, all connected distribution facilities are designed to be radial in nature and are normally operated radially, with only the possibility of being briefly connected in parallel with other distribution facilities during switching to feed this load from another substation while this substation is taken out of service.

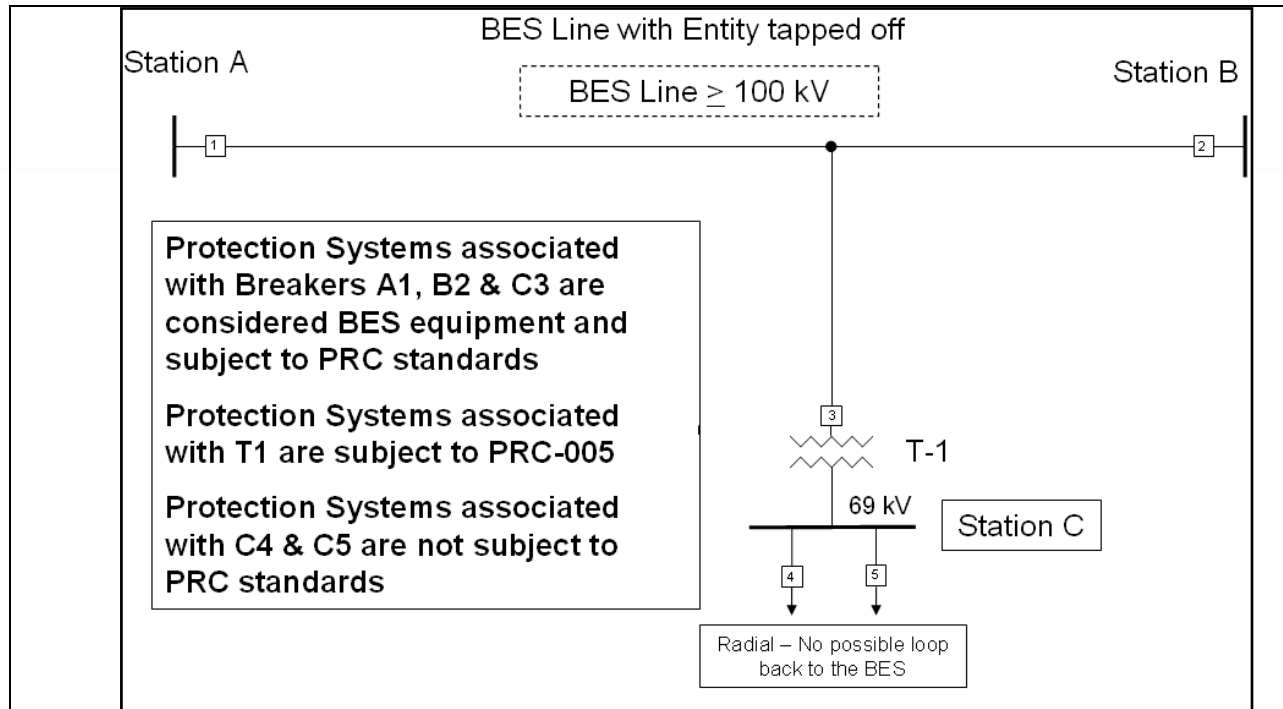
In this example, the looped 115 kV transmission system may be part of the Bulk Electric System and its protective relays and breakers located at the endpoints of this line section would be considered transmission Protection Systems and be subject to these standards. The status of the transformer protection equipment is unclear, though. The protective relays and the circuit switcher are connected at or attached to equipment that is connected at 115 kV, but this equipment is essentially connected to the BES radially, serves radial load, and is not necessarily designed to

protect the transmission system to which it is connected. In fact, in many cases this equipment is designed strictly to protect the transformer from overloads and through-faults relating to the connected distribution system as well as to minimize transformer damage resulting from internal faults by rapidly de-energizing the transformer for such internal faults.

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ReliabilityFirst Corp.	Bulk Electric System Definition
<p><b>Example 1B:</b> In another example, if a 138/12.47 kV distribution transformer is tapped from a networked 138 kV line which is included in the BES, and that transformer has protective relays (such as differential relays) that trip <u>only</u> the distribution transformer out-of-service and do not trip the networked 138 kV line; then those protective relays are <u>not included</u> as part of the BES definition. Breaker failure relaying on Breaker A, if any, is included if operation results in tripping of the networked 138kV line (Reference Diagram 1B.)</p>	
	
<p>Diagram 1B</p> <p>Relays protecting non-BES facility (e.g. transformer with secondary windings less than 100 kV) and tripping Breaker A are <u>not included</u> as part of BES.</p>	

However, slide 42 of Western Electricity Coordinating Council's PowerPoint presentation from their August 12, 2008 Relay Workshop (available at <http://www.wecc.biz/documents/library/compliance/2008/2008%2008%2012%20-%20Relay%20Workshop%20-%20Portland,%20OR%20-%20Presentation.ppt>) and shown below, also directly addresses this question, indicating that the equipment in the example above would be considered a transmission Protection System and would be subject to PRC-004-1 and PRC-005-1.



These issues stem from the fact that the term "transmission Protection System" is not clearly defined.

**Identify the material impact associated with this interpretation:**

**Identify the material impact to your organization or others caused by the lack of clarity or an incorrect interpretation of this standard.**

Depending upon the interpreted definition of the term "transmission Protection System," Y-WEA and other Tri-State members who are Distribution Providers and own substations connecting to the BES for power delivery from a wholesale provider as well as Tri-State and other Transmission Owners could be directly and materially affected by these standards. Y-WEA and other Tri-State members are compliant with these NERC standards. We believe the applicability of WECC's more stringent interpretation must be clarified for uniform enforcement.

Alleged violations from a WECC audit where these standards were not thought to be applicable could result in sanctions and civil penalties.

**Project 2009-17: Response to Request for an Interpretation of PRC-004-1 and PRC-005-1 for Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc.**

The following interpretation of PRC-004-1 — Analysis & Mitigation of Transmission and Generation Protection System Misoperations Requirements R1 and R3 and PRC-005-1 – Transmission and Generation Protection System Maintenance and Testing Requirements R1 and R2 was developed by the System Protection and Controls Subcommittee.

**Requirement Number and Text of Requirement**

**PRC-004-1:**

**R1.** The Transmission Owner and any Distribution Provider that owns a transmission Protection System shall each analyze its transmission Protection System Misoperations and shall develop and implement a Corrective Action Plan to avoid future Misoperations of a similar nature according to the Regional Reliability Organization's procedures developed for Reliability Standard PRC-003 Requirement 1.

**R3.** The Transmission Owner, any Distribution Provider that owns a transmission Protection System, and the Generator Owner shall each provide to its Regional Reliability Organization, documentation of its Misoperations analyses and Corrective Action Plans according to the Regional Reliability Organization's procedures developed for PRC-003 R1.

**PRC-005-1:**

**R1.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall have a Protection System maintenance and testing program for Protection Systems that affect the reliability of the BES. The program shall include:

**R1.1.** Maintenance and testing intervals and their basis.

**R1.2.** Summary of maintenance and testing procedures.

**R2.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization on request (within 30 calendar days). The documentation of the program implementation shall include:

**R2.1.** Evidence Protection System devices were maintained and tested within the defined intervals.

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**Question**

Y-W Electric Association, Inc. (Y-WEA) and Tri-State Generation and Transmission Association, Inc. (Tri-State) respectfully request an interpretation of the term "transmission Protection System" and specifically whether protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System and is subject to these standards.

## Response

The request for interpretation of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2 focuses on the applicability of the term "transmission Protection System." The NERC *Glossary of Terms Used in Reliability Standards* contains a definition of "Protection System" but does not contain a definition of transmission Protection System. The term transmission Protection System is applicable to any Protection System that is installed for the purpose of ~~designed to~~ detecting and initiate action for system faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources.

In general, a radially connected transformer protection system energized from the BES would not be considered a transmission Protection System. In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission system faults, then these Protection Systems would be considered transmission Protection Systems.

It should also be noted that due to the differences among ~~variance in~~ the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to ~~may be required from~~ the appropriate Regional Entity.

## Standards Announcement

### Ballot Pool and Pre-ballot Window

October 20–November 19, 2009

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

#### **Project 2009-17: Interpretation of PRC-004-1 and PRC-005-1 for Y-W Electric and Tri-State (Revision 1)**

A revised interpretation of standards PRC-004-1 — Analysis and Mitigation of Transmission and Generation Protection System Misoperations and PRC-005-1 — Transmission and Generation Protection System Maintenance and Testing for Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc. 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 November 19, 2009**.

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-2009-17\\_RFI\\_YW\\_Rev1\\_in](#).

#### **Next Steps**

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

#### **Project Background**

Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc. requested an interpretation of the term “transmission Protection System” and specifically whether protection for a radially connected transformer protection system energized from the Bulk Electric System is considered a transmission Protection System and is subject to these standards.

This is a revised version of the interpretation. The drafting team revised the interpretation to address balloter concerns regarding 1) the applicability of transmission Protection System and 2) the differences in the Regional Entity definitions of Bulk Electric System and the use of the phrase “specific clarification may be required.” The changes to the interpretation are shown in a redline version posted for review. The team has also posted a response to comments received during the initial ballot (July 31-August 10, 2009) for the original interpretation.

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

[http://www.nerc.com/filez/standards/Project2009-17\\_Interpretation\\_PRC-004\\_PRC-005\\_Y-W\\_TriStateG&T.html](http://www.nerc.com/filez/standards/Project2009-17_Interpretation_PRC-004_PRC-005_Y-W_TriStateG&T.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 Streeeter at [shaun.streeeter@nerc.net](mailto:shaun.streeeter@nerc.net) or at 609.452.8060.*



NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

Recognizing that the U.S. Thanksgiving holiday may limit entity resources, we have extended the ballot window for the interpretation referenced below through December 7, 2009 to allow entities to focus on the current ballot for [Project 2009-21: Cyber Security Ninety-day Response](#). Project 2009-21 is a time-sensitive project that involves revised critical infrastructure protection (CIP) standards and implementation plans to respond to the Federal Energy Regulatory Commission (FERC) September 30, 2009 Order approving version 2 CIP Standards.

## Standards Announcement

### Initial Ballot Window Open

### November 19–December 7, 2009

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

#### **Project 2009-17: Interpretation of PRC-004-1 and PRC-005-1 for Y-W Electric and Tri-State (Revision 1)**

An initial ballot window for a revised interpretation of standards PRC-004-1 — Analysis and Mitigation of Transmission and Generation Protection System Misoperations and PRC-005-1 — Transmission and Generation Protection System Maintenance and Testing for Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc. is now open **until 8 p.m. EST on December 7, 2009**.

#### **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**

Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc. requested an interpretation of the term "transmission Protection System" and specifically whether protection for a radially connected transformer protection system energized from the Bulk Electric System is considered a transmission Protection System and is subject to these standards.

This is a revised version of the interpretation. The drafting team revised the interpretation to address balloter concerns regarding 1) the applicability of transmission Protection System and 2) the differences in the Regional Entity definitions of Bulk Electric System and the use of the phrase "specific clarification may be required." The changes to the interpretation are shown in a redline version posted for review. The team has also posted a response to comments received during the initial ballot (July 31-August 10, 2009) for the original interpretation.

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[http://www.nerc.com/filez/standards/Project2009-17\\_Interpretation\\_PRC-004\\_PRC-005\\_Y-W\\_TriStateG&T.html](http://www.nerc.com/filez/standards/Project2009-17_Interpretation_PRC-004_PRC-005_Y-W_TriStateG&T.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.



User Name

Password

Log in

Register

- Ballot Pools
- Current Ballots
- Ballot Results
- Registered Ballot Body
- Proxy Voters

Home Page

## Ballot Results

<b>Ballot Name:</b>	Project 2009-17 - Interpretation Y-W Electric and Tri-State (Revision 1)_in
<b>Ballot Period:</b>	11/19/2009 - 12/7/2009
<b>Ballot Type:</b>	Initial
<b>Total # Votes:</b>	206
<b>Total Ballot Pool:</b>	240
<b>Quorum:</b>	<b>85.83 % The Quorum has been reached</b>
<b>Weighted Segment Vote:</b>	58.91 %
<b>Ballot Results:</b>	<b>The standard will proceed to recirculation ballot.</b>

## Summary of Ballot Results

Segment	Ballot Pool	Segment Weight	Affirmative		Negative		Abstain # Votes	No Vote
			# Votes	Fraction	# Votes	Fraction		
1 - Segment 1.	64	1	35	0.66	18	0.34	1	10
2 - Segment 2.	10	0.7	5	0.5	2	0.2	1	2
3 - Segment 3.	60	1	31	0.608	20	0.392	1	8
4 - Segment 4.	13	1	8	0.727	3	0.273	1	1
5 - Segment 5.	47	1	19	0.5	19	0.5	3	6
6 - Segment 6.	25	1	9	0.429	12	0.571	1	3
7 - Segment 7.	0	0	0	0	0	0	0	0
8 - Segment 8.	6	0.6	3	0.3	3	0.3	0	0
9 - Segment 9.	6	0.1	1	0.1	0	0	2	3
10 - Segment 10.	9	0.6	3	0.3	3	0.3	2	1
<b>Totals</b>	<b>240</b>	<b>7</b>	<b>114</b>	<b>4.124</b>	<b>80</b>	<b>2.876</b>	<b>12</b>	<b>34</b>

## Individual Ballot Pool Results

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

1	BC Transmission Corporation	Gordon Rawlings	Affirmative	
1	Black Hills Corp	Eric Egge		
1	Bonneville Power Administration	Donald S. Watkins	Affirmative	
1	Brazos Electric Power Cooperative, Inc.	Tony Kroskey		
1	CenterPoint Energy	Paul Rocha	Negative	
1	Central Maine Power Company	Brian Conroy	Affirmative	
1	City Utilities of Springfield, Missouri	Jeff Knottek	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	Negative	<a href="#">View</a>
1	E.ON U.S. LLC	Larry Monday	Affirmative	
1	Entergy Corporation	George R. Bartlett	Negative	<a href="#">View</a>
1	Exelon Energy	John J. Blazekovich	Negative	
1	FirstEnergy Energy Delivery	Robert Martinko	Affirmative	
1	Florida Keys Electric Cooperative Assoc.	Dennis Minton	Affirmative	
1	Georgia Transmission Corporation	Harold Taylor, II	Affirmative	
1	Great River Energy	Gordon Pietsch		
1	Hoosier Energy Rural Electric Cooperative, Inc.	Damon Holladay		
1	Hydro One Networks, Inc.	Ajay Garg	Affirmative	
1	Hydro-Quebec TransEnergie	Albert Poiré	Affirmative	
1	Idaho Power Company	Ronald D. Schellberg	Affirmative	
1	ITC Transmission	Elizabeth Howell	Negative	
1	Lakeland Electric	Larry E Watt	Negative	<a href="#">View</a>
1	Lee County Electric Cooperative	John W Delucca	Affirmative	
1	Manitoba Hydro	Michelle Rheault	Affirmative	
1	MidAmerican Energy Co.	Terry Harbour	Negative	<a href="#">View</a>
1	National Grid	Saurabh Saksena		
1	Northeast Utilities	David H. Boguslawski	Affirmative	<a href="#">View</a>
1	Northern Indiana Public Service Co.	Kevin M Largura	Negative	
1	NorthWestern Energy	John Canavan	Affirmative	
1	Ohio Valley Electric Corp.	Robert Matthey	Affirmative	
1	Otter Tail Power Company	Lawrence R. Larson	Affirmative	
1	Pacific Gas and Electric Company	Chifong L. Thomas		
1	PacifiCorp	Mark Sampson	Negative	
1	Platte River Power Authority	John C. Collins	Affirmative	
1	Potomac Electric Power Co.	Richard J. Kafka	Affirmative	
1	PowerSouth Energy Cooperative	Larry D. Avery	Affirmative	
1	PP&L, Inc.	Ray Mammarella	Abstain	
1	Public Service Electric and Gas Co.	Kenneth D. Brown	Affirmative	
1	Puget Sound Energy, Inc.	Catherine Koch	Affirmative	
1	Sacramento Municipal Utility District	Tim Kelley	Affirmative	
1	Salt River Project	Robert Kondziolka	Negative	<a href="#">View</a>
1	Santee Cooper	Terry L. Blackwell	Negative	<a href="#">View</a>
1	SaskPower	Wayne Guttormson		
1	SCE&G	Henry Delk, Jr.		
1	Seattle City Light	Pawel Krupa	Affirmative	
1	Sierra Pacific Power Co.	Richard Salgo	Affirmative	<a href="#">View</a>
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	Negative	<a href="#">View</a>
1	Southwestern Power Administration	Gary W Cox	Affirmative	
1	Tri-State G & T Association Inc.	Keith V. Carman	Affirmative	
1	Tucson Electric Power Co.	John Tolo		
1	Westar Energy	Allen Klassen	Affirmative	
1	Western Area Power Administration	Brandy A Dunn	Affirmative	
1	Xcel Energy, Inc.	Gregory L Pieper	Negative	<a href="#">View</a>
2	Alberta Electric System Operator	Jason L. Murray	Affirmative	
2	BC Transmission Corporation	Faramarz Amjadi	Affirmative	
2	Electric Reliability Council of Texas, Inc.	Chuck B Manning	Abstain	
2	Independent Electricity System Operator	Kim Warren	Negative	<a href="#">View</a>
2	ISO New England, Inc.	Kathleen Goodman	Affirmative	
2	Midwest ISO, Inc.	Jason L Marshall	Negative	<a href="#">View</a>
2	New Brunswick System Operator	Alden Briggs	Affirmative	
2	New York Independent System Operator	Gregory Campoli		
2	PJM Interconnection, L.L.C.	Tom Bowe		

2	Southwest Power Pool	Charles H Yeung	Affirmative	
3	Alabama Power Company	Bobby Kerley	Affirmative	
3	Allegheny Power	Bob Reeping		
3	Ameren Services	Mark Peters	Negative	<a href="#">View</a>
3	American Electric Power	Raj Rana	Negative	<a href="#">View</a>
3	Anaheim Public Utilities Dept.	Kelly Nguyen		
3	Arizona Public Service Co.	Thomas R. Glock	Affirmative	
3	Associated Electric Cooperative, Inc.	Chris W Bolick	Negative	<a href="#">View</a>
3	Atlantic City Electric Company	James V. Petrella	Affirmative	
3	BC Hydro and Power Authority	Pat G. Harrington	Abstain	
3	Bonneville Power Administration	Rebecca Berdahl	Affirmative	
3	Central Lincoln PUD	Steve Alexanderson	Affirmative	
3	City of Farmington	Linda R. Jacobson	Affirmative	
3	Commonwealth Edison Co.	Stephen Lesniak	Negative	<a href="#">View</a>
3	Consolidated Edison Co. of New York	Peter T Yost	Negative	<a href="#">View</a>
3	Consumers Energy	David A. Lapinski	Negative	
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	Negative	<a href="#">View</a>
3	Entergy Services, Inc.	Matt Wolf	Negative	<a href="#">View</a>
3	FirstEnergy Solutions	Joanne Kathleen Borrell	Affirmative	
3	Florida Power Corporation	Lee Schuster	Negative	<a href="#">View</a>
3	Georgia Power Company	Leslie Sibert	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		
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		
3	Kissimmee Utility Authority	Gregory David Woessner	Affirmative	
3	Lakeland Electric	Mace Hunter	Negative	
3	Lincoln Electric System	Bruce Merrill	Negative	<a href="#">View</a>
3	Louisville Gas and Electric Co.	Charles A. Freibert		
3	Manitoba Hydro	Greg C Parent	Affirmative	
3	MidAmerican Energy Co.	Thomas C. Mielnik	Negative	
3	Mississippi Power	Don Horsley	Affirmative	
3	Muscatine Power & Water	John Bos		
3	New York Power Authority	Michael Lupo	Affirmative	
3	Niagara Mohawk (National Grid Company)	Michael Schiavone	Affirmative	
3	Northern Indiana Public Service Co.	William SeDoris	Negative	
3	Orlando Utilities Commission	Ballard Keith Mutters	Negative	
3	PacifiCorp	John Apperson	Negative	
3	PECO Energy an Exelon Co.	John J. McCawley	Affirmative	
3	Platte River Power Authority	Terry L Baker	Affirmative	
3	Potomac Electric Power Co.	Robert Reuter	Affirmative	
3	Progress Energy Carolinas	Sam Waters	Negative	<a href="#">View</a>
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	Negative	<a href="#">View</a>
3	San Diego Gas & Electric	Scott Peterson		
3	Santee Cooper	Zack Dusenbury	Negative	
3	Seattle City Light	Dana Wheelock	Affirmative	
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	United Power Inc	Dean Hubbuck	Affirmative	
3	Wisconsin Electric Power Marketing	James R. Keller	Negative	
3	Xcel Energy, Inc.	Michael Ibold	Negative	<a href="#">View</a>
4	Alliant Energy Corp. Services, Inc.	Kenneth Goldsmith	Affirmative	
4	Consumers Energy	David Frank Ronk		
4	Detroit Edison Company	Daniel Herring	Affirmative	
4	Georgia System Operations Corporation	Guy Andrews	Affirmative	
4	Illinois Municipal Electric Agency	Bob C. Thomas	Negative	<a href="#">View</a>
4	LaGen	Richard Comeaux	Abstain	

4	Madison Gas and Electric Co.	Joseph G. DePoorter	Negative	
4	Ohio Edison Company	Douglas Hohlbaugh	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	Wisconsin Energy Corp.	Anthony Jankowski	Negative	
4	Y-W Electric Association, Inc.	James A Ziebarth	Affirmative	
5	AEP Service Corp.	Brock Ondayko	Negative	<a href="#">View</a>
5	Amerenue	Sam Dwyer	Negative	
5	Associated Electric Cooperative, Inc.	Brad Haralson	Negative	
5	Avista Corp.	Edward F. Groce	Negative	
5	Bonneville Power Administration	Francis J. Halpin	Affirmative	
5	City of Tallahassee	Alan Gale	Negative	<a href="#">View</a>
5	Colmac Clarion/Piney Creek LP	Harvie D. Beavers	Affirmative	
5	Consolidated Edison Co. of New York	Edwin E Thompson	Negative	<a href="#">View</a>
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	Negative	<a href="#">View</a>
5	Entergy Corporation	Stanley M Jaskot	Negative	<a href="#">View</a>
5	Exelon Nuclear	Michael Korchynsky	Negative	
5	FirstEnergy Solutions	Kenneth Dresner	Affirmative	
5	Great River Energy	Cynthia E Sulzer		
5	Lakeland Electric	Thomas J Trickey	Negative	
5	Liberty Electric Power LLC	Daniel Duff		
5	Lincoln Electric System	Dennis Florom	Negative	<a href="#">View</a>
5	Louisville Gas and Electric Co.	Charlie Martin	Affirmative	
5	Manitoba Hydro	Mark Aikens	Affirmative	
5	MidAmerican Energy Co.	Christopher Schneider	Negative	
5	New York Power Authority	Gerald Mannarino		
5	Northern Indiana Public Service Co.	Michael K Wilkerson	Negative	<a href="#">View</a>
5	Northern States Power Co.	Liam Noailles	Negative	
5	Orlando Utilities Commission	Richard Kinan		
5	PacifiCorp Energy	David Godfrey	Negative	
5	Portland General Electric Co.	Gary L Tingley		
5	PPL Generation LLC	Mark A. Heimbach	Abstain	
5	Progress Energy Carolinas	Wayne Lewis	Negative	<a href="#">View</a>
5	PSEG Power LLC	Thomas Piascik	Affirmative	
5	RRI Energy	Thomas J. Bradish	Affirmative	
5	Sacramento Municipal Utility District	Bethany Wright	Affirmative	
5	Salt River Project	Glen Reeves	Negative	<a href="#">View</a>
5	Seattle City Light	Michael J. Haynes	Affirmative	
5	Seminole Electric Cooperative, Inc.	Brenda K. Atkins	Affirmative	
5	South California Edison Company	Ahmad Sanati	Abstain	
5	South Carolina Electric & Gas Co.	Richard Jones	Abstain	
5	Southeastern Power Administration	Douglas Spencer	Affirmative	
5	Southern Company Generation	William D Shultz	Affirmative	
5	Tenaska, Inc.	Scott M. Helyer	Negative	
5	Tri-State G & T Association Inc.	Barry Ingold	Affirmative	
5	U.S. Army Corps of Engineers Northwestern Division	Karl Bryan	Affirmative	
5	U.S. Bureau of Reclamation	Martin Bauer	Affirmative	
5	Vandolah Power Company L.L.C.	Douglas A. Jensen		
5	Wisconsin Electric Power Co.	Linda Horn	Negative	
6	AEP Marketing	Edward P. Cox	Negative	<a href="#">View</a>
6	Associated Electric Cooperative, Inc.	Renee Rigsby-Busiek	Negative	
6	Bonneville Power Administration	Brenda S. Anderson	Affirmative	
6	Consolidated Edison Co. of New York	Nickesha P Carrol	Negative	<a href="#">View</a>
6	Dominion Resources, Inc.	Louis S Slade	Affirmative	
6	Duke Energy Carolina	Walter Yeager	Negative	
6	Entergy Services, Inc.	Terri F Benoit	Negative	<a href="#">View</a>
6	FirstEnergy Solutions	Mark S Travaglianti	Affirmative	
6	Great River Energy	Donna Stephenson		
6	Lakeland Electric	Paul Shipps	Negative	
6	Lincoln Electric System	Eric Ruskamp	Negative	<a href="#">View</a>
6	Louisville Gas and Electric Co.	Daryn Barker	Affirmative	

6	Manitoba Hydro	Daniel Prowse	Affirmative	
6	New York Power Authority	Thomas Papadopoulos		
6	Northern Indiana Public Service Co.	Joseph O'Brien	Negative	<a href="#">View</a>
6	PSEG Energy Resources & Trade LLC	James D. Hebson	Affirmative	
6	Public Utility District No. 1 of Chelan County	Hugh A. Owen	Abstain	
6	Salt River Project	Mike Hummel	Negative	<a href="#">View</a>
6	Santee Cooper	Suzanne Ritter	Negative	<a href="#">View</a>
6	Seattle City Light	Dennis Sismaet	Affirmative	
6	Seminole Electric Cooperative, Inc.	Trudy S. Novak	Affirmative	
6	Southern California Edison Co.	Marcus V Lotto	Affirmative	
6	SunGard Data Systems	Christopher K Heisler	Negative	
6	Western Area Power Administration - UGP Marketing	John Stonebarger		
6	Xcel Energy, Inc.	David F. Lemmons	Negative	<a href="#">View</a>
8	Edward C Stein	Edward C Stein	Negative	
8	James A Maenner	James A Maenner	Affirmative	<a href="#">View</a>
8	JDRJC Associates	Jim D. Cyrulewski	Negative	
8	Kit Carson Electric Cooperative Inc.	Cecilia Quintana	Affirmative	
8	Roger C Zaklukiewicz	Roger C Zaklukiewicz	Affirmative	
8	Volkman Consulting, Inc.	Terry Volkman	Negative	
9	Commonwealth of Massachusetts Department of Public Utilities	Donald E. Nelson	Affirmative	
9	Maine Public Utilities Commission	Jacob A McDermott	Abstain	
9	National Association of Regulatory Utility Commissioners	Diane J. Barney		
9	New York State Department of Public Service	Thomas G Dvorsky		
9	Oregon Public Utility Commission	Jerome Murray	Abstain	
9	Public Utilities Commission of Ohio	Klaus Lambeck		
10	Electric Reliability Council of Texas, Inc.	Kent Saathoff	Abstain	
10	Florida Reliability Coordinating Council	Linda Campbell	Negative	<a href="#">View</a>
10	Midwest Reliability Organization	Dan R Schoenecker	Negative	
10	New York State Reliability Council	Alan Adamson	Affirmative	
10	Northeast Power Coordinating Council, Inc.	Guy V. Zito	Affirmative	
10	ReliabilityFirst Corporation	Jacque Smith	Abstain	
10	SERC Reliability Corporation	Carter B Edge	Affirmative	
10	Southwest Power Pool Regional Entity	Stacy Dochoda		
10	Western Electricity Coordinating Council	Louise McCarren	Negative	<a href="#">View</a>

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NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Standards Announcement

### Initial Ballot Results

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

#### **Project 2009-17: Interpretation of PRC-004-1 and PRC-005-1 for Y-W Electric and Tri-State (Revision 1)**

The initial ballot for a revised interpretation of standards PRC-004-1 — Analysis and Mitigation of Transmission and Generation Protection System Misoperations and PRC-005-1 — Transmission and Generation Protection System Maintenance and Testing for Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc. ended on December 7, 2009.

#### **Ballot Results**

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

Quorum: 85.83%  
Approval: 58.91%

Since at least one negative ballot included a comment, these results are not final. A second (or recirculation) ballot must be conducted. Ballot criteria are listed at the end of the announcement.

#### **Next Steps**

As part of the recirculation ballot process, the drafting team must draft and post responses to voter comments. The drafting team will also determine whether or not to make revisions to the balloted item(s). Should the team decide to make revisions, the revised item(s) will return to the initial ballot phase.

#### **Project Background**

Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc. requested an interpretation of the term "transmission Protection System" and specifically whether protection for a radially connected transformer protection system energized from the Bulk Electric System is considered a transmission Protection System and is subject to these standards.

This is a revised version of the interpretation. The drafting team revised the interpretation to address balloter concerns regarding 1) the applicability of transmission Protection System and 2) the differences in the Regional Entity definitions of Bulk Electric System and the use of the phrase "specific clarification may be required." The changes to the interpretation are shown in a redline version posted for review. The team has also posted a response to comments received during the initial ballot (July 31-August 10, 2009) for the original interpretation.

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

<http://www.nerc.com/filez/standards/Project2009-17 Interpretation PRC-004 PRC-005 Y-W TriStateG&T.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 Shaun Streeter at [shaun.streeter@nerc.net](mailto:shaun.streeter@nerc.net) or at 609.452.8060.*

## **Project 2009-17: Interpretation of PRC-004-1 and PRC-005-1 for Y-W Electric and Tri-State Consideration of Comments for Initial Ballot of Revision 1 (November 19–December 7, 2009)**

### **Summary Consideration:**

Several commenters expressed concern that low-voltage networks and small generators do not have a material impact on the reliability of the Bulk Electric System (BES) or that discussion of low-voltage networks or “transmission system faults” was not clear. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”

Several commenters expressed concern that the interpretation has created a defined term, “transmission Protection System,” and that definitions should be developed through the NERC standards development process. The drafting team has modified the first paragraph of the interpretation to clarify our intent is to interpret the applicability of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2; not to define the term “transmission Protection System.” The last sentence now reads, “In these two standards, use of the phrase “transmission Protection System” indicates that the requirements using this phrase are applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”

Some commenters expressed concern that the interpretation is in conflict with regional definitions of the BES or that it attempts to interpret these regional definitions. Other commenters expressed concern that the final paragraph in the interpretation regarding regional differences in definitions of the BES amounted to a disclaimer and undermined the interpretation. The drafting team believes the interpretation, as modified, avoids potential conflicts with regional definitions and believes that references to the BES are valid for the existing definition of the BES and also will be applicable if a NERC-wide methodology for determining BES facilities is developed. The drafting team acknowledges the concern with the last paragraph of the interpretation. The drafting team has removed the paragraph, believing it is not needed to respond to the request for interpretation.

Two commenters expressed concern that faults on non-BES elements could have a material impact on the BES if a protection system failure were to occur. The drafting team acknowledges the potential for faults on non-BES elements to impact the BES and had extensive discussion regarding this concern. However, the drafting team believes that extending applicability of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2 to non-BES elements would change these standards. Such a change would require a Standard Authorization Request (SAR). A majority of the drafting team believes the modifications to the interpretation are adequate and that a SAR to modify the standard is not necessary.

If you feel that the drafting team overlooked your comments, please let us know immediately. Our goal is to give every comment serious consideration in this process. If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Gerry Adamski, at 609-452-8060 or at [gerry.adamski@nerc.net](mailto:gerry.adamski@nerc.net). In addition, there is a NERC Reliability Standards Appeals Process.<sup>1</sup>

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<sup>1</sup> The appeals process is in the Reliability Standards Development Procedure: [http://www.nerc.com/files/RSDP\\_V6\\_1\\_12Mar07.pdf](http://www.nerc.com/files/RSDP_V6_1_12Mar07.pdf).

Voter	Entity	Segment	Vote	Comment
Kirit S. Shah  Mark Peters	Ameren Services	1  3	Negative	1. We know of no situation where these networks or small (< 20MVA ) generator have a material impact on the reliability of the BES. Many co-ops, municipals, and customers operate with a networked sub-transmission or medium voltage system which would make their back-feed protection a transmission protection system per this definition. 2. If this interpretation is approved, the owning entity is responsible for compliance. The TO to which they're connected is not responsible. NERC and regional entities are responsible for assuring that all entities (e.g. co-ops, municipals, and even retail customers) are registered, and then enforcing NERC standards. This could significantly increase compliance enforcement burden with little material improvement in BES reliability. 3. We believe that all transformer taps with low-side voltage below 100kV should be excluded.
<p><b>Response:</b> The drafting team has modified the interpretation in response to the comments received. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p>				
Larry E Watt	Lakeland Electric	1	Negative	Based on the NERC definition and FERC Order 693, the Interpretation Team has overstepped their bounds by attempting to define ‘transmission Protection Systems’ as they apply to the regional definitions of Bulk Electric System. All requests for interpretation of regional definitions of the Bulk Electric System and regional documents supporting the definition should be directed to the appropriate Regional Entity for review and comment.
<p><b>Response:</b> The drafting team has modified the first paragraph of the interpretation to clarify our intent is to interpret the applicability of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2, not to define the term “transmission Protection System.” The last sentence now reads, “In these two standards, use of the phrase transmission Protection System indicates that the requirements using this phrase are applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p>				
Peter T Yost  Edwin E	Consolidated Edison Co. of New York	3  5	Negative	Con Edison votes no on this ballot for the following reason: the term "networked low side system" is unclear. We believe the term should be revised to "low side system supplied from multiple transmission substations". This revision is better aligned with the language regarding radial exclusions in the NERC definition of Bulk Electric System.



Voter	Entity	Segment	Vote	Comment
Thompson  Nickesha P Carrol		6		
<p><b>Response:</b> The drafting team has modified the interpretation in response to the comments received. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p>				
Douglas E. Hils  Robert Smith  Henry Ernst Jr	Duke Energy Carolina	1  5  3	Negative	<p>Duke Energy votes “Negative” on this Interpretation because of the sentence “In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission system faults, then these Protection Systems would be considered transmission Protection Systems.” This sentence is in conflict with the RFC BES definition which states that “The ReliabilityFirst Bulk Electric System excludes: (1) radial facilities connected to load serving facilities or individual generation resources smaller than 20 MVA or a generation plant with aggregate capacity less than 75 MVA where the failure of the radial facilities will not adversely affect the reliable steady-state operation of other facilities operated at voltages of 100 kV or higher...”</p>
<p><b>Response:</b> The drafting team has modified the interpretation in response to the comments received. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p>				
Louise McCarren	Western Electricity Coordinating Council	10	Negative	<p>During the first ballot of this interpretation the following comment was submitted We would consider the protection system for a transformer with a High Side Voltage greater than 100Kv, connected to a transmission line at greater than 100KV by a tap as a BES protection system if: 1) the transformer tap connection had two power supplies. Or 2) the transformer protection system had direct communication with another BES relay or protection system such as a transfer trip. The current definition of BES specifies that a radial transmission line serving only</p>

Voter	Entity	Segment	Vote	Comment
				<p>load is not considered as BES IF there is only a single power source. WECC considers these tapped connections as having two power sources. We also believe these transformer protection systems for this configuration should be considered as BES protection systems and subject to PRC-005 because of the potential impact on the BES should they fail to operate. If a tapped transformer has a relay protection failure, the backup protection would be 2 remote breakers in the BES which would isolate not only the affected transformer and its load but any other tapped circuits between the open breakers and also would remove a section of BES transmission from service. It is clear that a failure or misoperation of this transformer protection equipment would impact the BES and we believe it should be considered as an applicable BES protection system. The changes made to the current interpretation did not alter the interpretation to address these concerns</p>
<p><b>Response:</b> The interpretation does not impact the definition of the Bulk Electric System or its application within each region. The drafting team acknowledges the potential for faults on non-Bulk Electric System elements to impact the Bulk Electric System and had extensive discussion regarding this concern. However, the drafting team is required to base the interpretation on the text of the existing standard and supporting documents, such as defined terms in the NERC Glossary. The drafting team believes that extending applicability of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2 to non-Bulk Electric System elements would change these standards. Such a change would require a Standard Authorization Request (SAR). A majority of the drafting team believes the modifications to the interpretation are adequate and that a SAR to modify the standard is not necessary.</p>				
George R. Bartlett	Entergy Corporation	1	Negative	<p>We believe that there must be a minimum MW value for low side sources potentially contributing fault energy into the BES. It does not seem reasonable to include every single distributed generation source (no matter the size) and its associated protection schemes in the scope of transmission protection schemes under these standards. We suggest the following points to exclude the applicability of relaying protection schemes applied to transformers operated with low sides less than 100kV: Â· Protection schemes designed primarily to protect the transformer itself AFTER the BES branch is isolated through its associated transmission line protection scheme - i.e. overcurrent schemes which isolate tapped transformers from damaging currents which might otherwise be backfed through the transformer's networked or paralleled low side for permanent line faults or isolated transmission load. Â· Protection schemes designed to operate AFTER the clearing of a transmission BES branch to prevent overvoltage conditions which might damage other distribution or transmission assets such as insulators, bushings, lightning arresters, breakers, PT's, CT's, power transformer windings etc. due to a permanent line to ground fault on the isolated BES branch backfed through a delta connected primary</p>
Matt Wolf		3		
Stanley M Jaskot		5		
Terri F Bennet		6		

Voter	Entity	Segment	Vote	Comment
				winding. (i.e. reverse power schemes, zero sequence overvoltage, etc). We support having a reasonable grace period established to allow all entities to come into compliance with any interpretation of a standard when such interpretations represent a significant difference in the initial understanding and application of that standard. We further support waiving or otherwise making special allowance for retroactive compliance requirements when interpretations represent a significant change in the industry's understanding and application of a standard.
<p><b>Response:</b> The drafting team has modified the interpretation in response to the comments received. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p> <p>Based on NERC’s standards development process, as defined in the <i>Reliability Standards Development Procedure</i>, interpretations become effective when approved by regulatory authorities; therefore, implementation plans are not applicable. The drafting team believes that the revised interpretation will not be viewed as a “significant change in the industry's understanding and application of a standard,” and believes the changes to this interpretation will address the commenter’s concern.</p>				
Stephen Lesniak	Commonwealth Edison Co.	3	Negative	Exelon does not believe that protection equipment that trips non-BES equipment poses a threat to the Bulk Electric System. Exelon knows of no evidence within its’ system or on the systems of others where this equipment has led to anything approaching a Bulk Electric System event. Therefore protective equipment designed to detect BES faults that does not trip a BES element should not be subject to the substantial additional expense and burden of record keeping and compliance required by a NERC standard. The definition of a Transmission Protection System should be changed to include only those devices designed to detect transmission level faults and trip BES level elements.
<p><b>Response:</b> The drafting team has modified the interpretation in response to the comments received. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p>				
Suzanne Ritter  Terry L.	Santee Cooper	6	Negative	Further clarity is needed in the sentence "In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission system faults, then these Protection Systems would be considered transmission Protection Systems." Specifically,

Voter	Entity	Segment	Vote	Comment
Blackwell		1		<p>what is meant by "installed to detect and initiate actions for transmission system faults?" If there is a networked subtransmission system (less than 100 kV), there sometimes are protection system elements that could "detect and initiate actions for transmission system faults" eventually, just based on the settings needed to protect the subtransmission element. However, they are not "installed to detect and initiate actions for transmission system faults." They are installed to protect the subtransmission elements. Also, sometimes there are protection system elements on small, sub-transmission generators that are "installed to detect and initiate actions for transmission system faults," but not necessarily for the protection of the transmission system element, just as a precaution for the unit itself. These protection systems are not really significant to the transmission system. For instances like these, the ramifications for the possible expansion of this definition of "transmission protection system," based on the wording of these sentences, could be both significant and open to further interpretation. The significance to entities of such an interpretation seems to warrant this subject being handled within the actual standard, instead of an interpretation (based on the note that says, "Note: an Interpretation cannot be used to change a standard"), unless the interpretation is specifically clarified to make sure it is only taken as pertaining to protection systems for potential sources (generator or networked low side system) that are installed specifically to protect a transmission element, not just that may be able to operate for a fault on a transmission system element. Suggest at least wording the sentence as "... and there are Protection Systems primarily installed to protect the associated transmission system element by detecting and initiating actions for transmission system faults, then these Protection Systems would be considered transmission Protection Systems."</p>
<p><b>Response:</b> The drafting team has modified the interpretation in response to the comments received. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is "installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES."</p>				
Alan Gale	City of Tallahassee	5	Negative	<p>I appreciate Y-WEA's and Tri-State's effort to obtain a clarification so that "[t]hose who are subject to Commission penalties need to know, in advance, what they must do to avoid a penalty" as Commissioner Moeller reiterated in his concurring opinion to the FPL settlement. However, the questions asked must be addressed at the regional level. It is possible that two different regions have two different definitions of what the BES is. Where is the boundary line</p>

Voter	Entity	Segment	Vote	Comment
				for the BES? Can you have sub-transmission components of the BES? Does a small local generator make it a transmission system and part of the BES? The interpretation provided even states that this clarification should come from the Regional Entity.
<p><b>Response:</b> The drafting team has modified the interpretation to avoid potential conflicts with regional definitions of the Bulk Electric System. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.” This interpretation clarifies the protective relays to which PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2 are applicable. The drafting team acknowledges that by referring to the Bulk Electric System in the interpretation, the applicability is dependent on the definition of Bulk Electric System in each region, similar to application of any other standard that references the Bulk Electric System.</p>				
John J. Moraski	Baltimore Gas & Electric Company	1	Negative	If the highlighted change below (i.e., *normally*) were made that would cause BGE to favor the interpretation. BGE often has slow acting low-side reverse directional relays enabled on radial transformers to protect the transformer against the effects of a transmission line fault in the improbable circumstance that abnormal switching has provided a fault current source at the distribution voltage level. The interpretation as written would incent BGE to disable that protection in order to avoid regulatory risk, an action that would not serve reliability. It is worth noting that when such a relay operates it is after the fault has already been cleared at the transmission terminals, so the benefit of the relay is to the transformer, not to the BES. In general, a radially connected transformer protection system energized from the BES would not be considered a transmission Protection System. In the event that the transformer low side is *normally* connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission system faults, then these Protection Systems would be considered transmission Protection Systems.
<p><b>Response:</b> The drafting team has modified the interpretation in response to the comments received. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p>				
Lee Schuster	Florida Power Corporation	3	Negative	Progress is voting Negative and supports the position held by FRCC, as explained in their comments in this ballot. The requester of the interpretation asked for an interpretation and definition of the undefined term “transmission Protection System”. Definitions should be

Voter	Entity	Segment	Vote	Comment
				developed through the NERC Reliability Standards Development Procedure by submitting a SAR and requesting that a term be defined. The interpretation development process should not be used to create a new defined term, as requested by the requester in this Project.
<p><b>Response:</b> The drafting team has modified the first paragraph of the interpretation to clarify our intent is to interpret the applicability of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2, not to define the term “transmission Protection System.” The last sentence now reads, “In these two standards use of the phrase transmission Protection System indicates that the requirements using this phrase are applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p>				
Sam Waters  Wayne Lewis	Progress Energy Carolinas	3  5	Negative	Progress is voting Negative and supports the position held by FRCC, as explained in their comments in this ballot. The requester of the interpretation asked for an interpretation and definition of the undefined term “transmission Protection System”. Definitions should be developed through the NERC Reliability Standards Development Procedure by submitting a SAR and requesting that a term be defined. The interpretation development process should not be used to create a new defined term, as requested by the requester in this Project.
<p><b>Response:</b> The drafting team has modified the first paragraph of the interpretation to clarify our intent is to interpret the applicability of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2, not to define the term “transmission Protection System.” The last sentence now reads, “In these two standards use of the phrase transmission Protection System indicates that the requirements using this phrase are applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p>				
John Bussman	Associated Electric Cooperative, Inc.	1	Negative	Response: The request for interpretation of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2 focuses on the applicability of the term “transmission Protection System.” The NERC Glossary of Terms Used in Reliability Standards contains a definition of “Protection System” but does not contain a definition of transmission Protection System. The term transmission Protection System is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and initiating action to clear the protected element from all local sources. In general, a radially connected transformer protection system energized from the BES would not be considered a transmission Protection System. In the event that the transformer low side is connected to a potential source (generator

Voter	Entity	Segment	Vote	Comment
				<p>or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission system faults, then these Protection Systems would be considered transmission Protection Systems. It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity. We believe one of the main problems with this interpretation is that “transmission system faults” is not defined. Are these faults on the BES? If so, we can better define which relays should be in the testing program. Still, for low voltage faults not on the BES, the BES can be impacted if the fault does not clear properly Another concern is where the generator source ends. That is, If an entity has a wind farm or other generator source at 10 or 20 MW (we have some as low as a few MWs) connected through two transformers 12.47 KV/ 69kV then 69kV/161kV before it is connected to the 100KV system; does all the relaying in between 12.47 and 100 kV have to be included within the relay maintenance test program. We don’t think that it would be necessary since the fault contribution would be negligible and the affect on the reliability of the BES is minimal. There is a concern with the term networked low side system. At AECl there are many 69KV loops that start at the 161kV transmission system and end back at the 161kV system with a number of transformations in between. Therefore, based on the interpretation; all relay systems within the 69kV network would be required to be included in the relay maintenance and testing program. We don’t believe that was the intent of the interpretation. We understand the intent of the interpretation. However, generator sources should be limited to those above some minimum MW value. In addition, the interpretation should limit the sub-100 kV Protection Systems that would be considered transmission Protection Systems to those associated with the first protective device downstream from the Bulk Electric System. The last item of concern is an implementation plan. If entities have not interrelated the standard per this interpretation when does the interpretation go into effect? There should be some amount of time that an entity has to have it included in their relay maintenance and test program. It should not be retroactive back to June 18, 2007.</p>

**Response:** The drafting team has modified the interpretation in response to the comments received. The drafting team believes these modifications avoid potential conflicts with regional definitions of the Bulk Electric System. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”

Voter	Entity	Segment	Vote	Comment
Michael K Wilkerson	Northern Indiana Public Service Co.	5	Negative	The final sentence in the interpretation appears to be a disclaimer that needs to be addressed. Variance in Regional Entity definitions of the BES should be eliminated by NERC especially since there are entities that span multiple regions.
Joseph O'Brien		6		
<p><b>Response:</b> The drafting team has removed the last paragraph from the interpretation. The drafting team acknowledges the concern with this paragraph raised by several commenters and believes this paragraph is not needed to respond to the request for interpretation.</p>				
James L. Jones	Southwest Transmission Cooperative, Inc.	1	Negative	The last sentence of the interpretation completely throws the whole issue back to the regions who have not been consistent in the first place. (It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.)
<p><b>Response:</b> The drafting team has removed the last paragraph from the interpretation. The drafting team acknowledges the concern with this paragraph raised by several commenters and believes this paragraph is not needed to respond to the request for interpretation.</p>				
Jason L Marshall	Midwest ISO, Inc.	2	Negative	We believe the interpretation would be accurate and correct with just the first two paragraphs. The last paragraph should be deleted as it undermines the first two paragraphs.
<p><b>Response:</b> The drafting team has removed the last paragraph from the interpretation. The drafting team acknowledges the concern with this paragraph raised by several commenters and believes this paragraph is not needed to respond to the request for interpretation.</p>				
Bob C. Thomas	Illinois Municipal Electric Agency	4	Negative	Actual interpretation is acceptable; however, IMEA's understanding is there is concern within the industry that the last sentence compromises the interpretation.
<p><b>Response:</b> The drafting team has removed the last paragraph from the interpretation. The drafting team acknowledges the concern with this paragraph raised by several commenters and believes this paragraph is not needed to respond to the request for interpretation.</p>				
Bruce Merrill	Lincoln Electric System	3	Negative	The old and new NERC definition of a transmission protection system seem to include only relays that detect faults on the BES and not relays that protect a radially connected transformer. However, we see from the Request for Interpretation that ReliabilityFirst includes



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Dennis Florom  Erik Ruskamp		5  6		breaker failure protection for the transformer high side breaker and WECC includes all of the transformer protection. These protection systems do not detect faults on the BES but can trip an element of the BES. These regional entities are going a step further than NERC. This could present a problem in an audit situation.
<p><b>Response:</b> This interpretation clarifies the protective relays to which PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2 are applicable. The drafting team acknowledges that by referring to the Bulk Electric System in the interpretation, the applicability is dependent on the definition of Bulk Electric System in each region, similar to application of any other standard that references the Bulk Electric System.</p>				
Linda Campbell	Florida Reliability Coordinating Council	10	Negative	<p>The requesters have asked NERC to define ‘transmission Protection System’ and to effectively make a determination of which regional (WECC or RFC) definition of Bulk Electric System is correct. This is an inappropriate use of the Interpretation Process for several reasons. Definitions should be developed through the NERC Reliability Standards Development Procedure by submitting a Standard Authorization Request (SAR) to the standards process manager requesting that a term be defined. Development of a definition for one Reliability Standard interpretation may not consider the impact to the other Reliability Standards that will also use that same definition. Furthermore the Standards Development Procedure ensures that industry vetting is applied to establish consensus. The responsibility of defining Bulk Electric System resides with the regions. This is clearly stated in the NERC definition of the term: “As defined by the Regional Reliability Organization, the electrical generation resources, transmission lines, interconnections with neighboring systems, and associated equipment, generally operated at voltages of 100 kV or higher. Radial transmission facilities serving only load with one transmission source are generally not included in this definition”. Additionally, In Order 693, Paragraph 77, FERC directed NERC to provide them with a complete set of regional definitions of the bulk electric system and any regional documents that identify critical facilities to which the Reliability Standards apply (i.e. facilities below a 100kV threshold that have been identified by the regions as critical to system reliability). The NERC definition and FERC Order 693 clearly identify that the responsibility for the definition of the Bulk Electric System resides with the Regional Entities. Based on the NERC definition and FERC Order 693, the Interpretation Team has overstepped their bounds by attempting to define ‘transmission Protection Systems’ as they apply to the regional definitions of Bulk Electric System. All requests for interpretation of regional definitions of the Bulk Electric System and regional documents supporting the definition should be directed to the appropriate Regional Entity for review and comment.</p>

Voter	Entity	Segment	Vote	Comment
<p><b>Response:</b> The drafting team has modified the interpretation to avoid potential conflicts with regional definitions of the Bulk Electric System. The discussion regarding low-voltage networks has been removed from the second paragraph and the first paragraph has been modified. The drafting team also has modified the first paragraph of the interpretation to clarify our intent is to interpret the applicability of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2, not to define the term “transmission Protection System.” The last sentence now reads, “In these two standards use of the phrase transmission Protection System indicates that the requirements using this phrase are applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p>				
<p>Glen Reeves</p> <p>Robert Kondziolka</p> <p>John T. Underhill</p> <p>Mike Hummel</p>	<p>Salt River Project</p>	<p>5</p> <p>1</p> <p>3</p> <p>6</p>	<p>Negative</p>	<p>The term "transmission system faults" used in the interpretation needs to be defined. Is "transmission system" synonymous with "Bulk Electric System"?</p>
<p><b>Response:</b> The drafting team has modified the interpretation to remove the phrase “transmission system faults.” The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p>				
<p>Chris W Bolick</p>	<p>Associated Electric Cooperative, Inc.</p>	<p>3</p>	<p>Negative</p>	<p>The term transmission system faults is undefined</p>
<p><b>Response:</b> The drafting team has modified the interpretation to remove the phrase “transmission system faults.” The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p>				

Voter	Entity	Segment	Vote	Comment
Terry Harbour	MidAmerican Energy Co.	1	Negative	This interpretation could inappropriately pull in distribution protection systems (such as 13 or 69 kV breakers) on the low side of a transformer
<p><b>Response:</b> The drafting team has modified the interpretation in response to the comments received. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p>				
Kim Warren	Independent Electricity System Operator	2	Negative	We continue to have certain reservations regarding the interpretation as drafted because the revisions have failed to address what in our view is its limited scope. The interpretation now reads in part: “... any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES)...” Our point is that it is possible for (lower voltage) faults on non-BES elements to impact the BES if those faults are not cleared properly, so that any protection system installed with the intention of detecting and initiating action in such cases where the fault is impactful, should also be classified as a transmission protection system. In short, we believe the goal of a transmission protection system should be to protect the BES from faults that may have an adverse impact on it whether these faults occur on BES elements or not, and as such the “test” of what constitutes a transmission protection should be expanded beyond merely faults on BES elements. Notwithstanding the DT’s response to our previous comment on this issue, the current version of the interpretation does not make this clear.
<p><b>Response:</b> The drafting team acknowledges the potential for faults on non-Bulk Electric System elements to impact the Bulk Electric System and had extensive discussion regarding this concern. However, the drafting team is required to base the interpretation on the text of the existing standard and supporting documents, such as defined terms in the NERC Glossary. The drafting team believes that extending applicability of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2 to non-Bulk Electric System elements would change these standards. Such a change would require a Standard Authorization Request (SAR). A majority of the drafting team believes the modifications to the interpretation are adequate and that a SAR to modify the standard is not necessary.</p>				
Gregory L Pieper	Xcel Energy, Inc.	1	Negative	We felt that the drafting team’s response to our comment in the last ballot was very helpful and addressed our concern. However, no corresponding clarification was made to the interpretation. Interpretations should not introduce new ambiguity. We feel that it is the drafting team’s responsibility to ensure that the issues relating to “potential sources” is clear in the interpretation and modifications should be made. One suggested way to clarify the

Voter	Entity	Segment	Vote	Comment
Michael Ibold  David F. Lemmons		3  6		interpretation is to add some of the language in the drafting team's response to our comment in the last ballot.
<p><b>Response:</b> The drafting team agrees it is important that an interpretation should not introduce new ambiguity. The drafting team has modified the interpretation in response to the comments received. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified to clarify that a transmission Protection System is “installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.”</p>				
Paul B. Johnson  Raj Rana  Brock Ondayko  Edward P. Cox	American Electric Power	1  3  5  6	Negative	<p>While AEP generally agrees with the interpretation provided by the SDT, we do not believe that the interpretation process is being used appropriately in this instance. First, AEP does not believe it is appropriate to define a term used in the standard through an interpretation, especially when such a definition changes the meaning of the standard's requirements. Establishing a definition for the term "transmission Protection System" should be done in the standard development process and through the NERC glossary development process. To justify doing otherwise by stating that the term is already used (but not defined) in the standard, does not seem to be a logical approach. In the case of the acknowledged differences among Regional Entity definitions of the BES, regional BES differences should be identified within the standard. Alternatively, the applicable definition of "transmission Protection System" facilities should be provided on a national basis, with the regions provided the opportunity to create exceptions through the regional standards development process. To simply direct responsible entities to independently seek specific clarification for each Regional Entity, as is written in the third paragraph of the interpretation, is inconsistent with how regional differences have been managed in other standards developed through the national and regional standards development process. Furthermore, the approach of directing responsible entities to request specific clarification of the regional (BES) definition (as applicable to "transmission Protection System") of the appropriate Regional Entity, does not provide a formal and consistent basis under which responsible entities can demonstrate full compliance with the standard.</p>
<p><b>Response:</b> The drafting team has modified the first paragraph of the interpretation to clarify our intent is to interpret the applicability of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2, not to define the term “transmission Protection System.” The drafting team also has modified the interpretation to avoid potential</p>				

Voter	Entity	Segment	Vote	Comment
<p>conflicts with regional definitions of the Bulk Electric System. The discussion regarding low-voltage networks has been removed from the second paragraph, and the first paragraph has been modified. The last sentence now reads, "In these two standards use of the phrase transmission Protection System indicates that the requirements using this phrase are applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES."</p> <p>The drafting team has removed the last paragraph from the interpretation. The drafting team acknowledges the concern with this paragraph raised by several commenters and believes this paragraph is not needed to respond to the request for interpretation</p>				
David H. Boguslawski	Northeast Utilities	1	Affirmative	Support with comments: 1) Suggest replacing phrase "from all local sources" with "from all terminals that must open to clear the fault from the BES" -- since introducing the concept of "local" may cause some confusion. 2) Suggest that the definition of Transmission protection system be added to the NERC glossary of terms.
<p><b>Response:</b> The drafting team acknowledges your affirmative response and clarifying comment. The drafting team has modified the interpretation in line with the commenter's suggestion. The first paragraph has been modified to clarify that a transmission Protection System is "installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES."</p>				
Richard Salgo	Sierra Pacific Power Co.	1	Affirmative	The clarifications provided in this revision to the interpretation address our previous concerns.
<p><b>Response:</b> The drafting team acknowledges your affirmative response and clarifying comment. The drafting team thanks you for your participation in this project.</p>				
James A Maenner	James A Maenner	8	Affirmative	While I agree with this interpretation, the issue has unveiled problems concerning regional differences. By allowing each region to define the Bulk Electric System consensus on transmission applicability will be difficult to achieve. I suggest the development of a NERC-wide methodology for determining BES facilities.
<p><b>Response:</b> The drafting team acknowledges your affirmative response and clarifying comment. The drafting team has modified the interpretation to avoid potential conflicts with regional definitions of the Bulk Electric System. The drafting team believes this revised interpretation will be applicable for the existing definition of the Bulk Electric System, and also will be applicable if a NERC-wide methodology for determining BES facilities is developed.</p>				

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

Request for an Interpretation of a Reliability Standard	
<b>Date submitted:</b> <a href="#">March 25, 2009</a>	
<b>Contact information for person requesting the interpretation:</b>	
<b>Name:</b> <a href="#">James A. Ziebarth</a>	<a href="#">T. William Middaugh</a>
<b>Organization:</b> <a href="#">Y-W Electric Association, Inc.</a> <a href="#">Tri-State Generation &amp; Transmission Association, Inc.</a>	
<b>Telephone:</b> <a href="#">(970) 345-2291</a>	<a href="#">(303) 254-3433</a>
<b>E-mail:</b> <a href="mailto:james@hea.coop">james@hea.coop</a>	<a href="mailto:bmiddaugh@tristategt.org">bmiddaugh@tristategt.org</a>
<b>Identify the standard that needs clarification:</b>	
<b>Standard Number (include version number):</b> <a href="#">PRC-004-1</a> and <a href="#">PRC-005-1</a>	
<b>Standard Title:</b> <a href="#">Analysis &amp; Mitigation of Transmission/Generation Protection System Misoperations; Transmission &amp; Generation Protection System Maintenance &amp; Testing</a>	
<b>Identify specifically what needs clarification</b>	
<b>Requirement Number and Text of Requirement:</b>	
<b>In Standard <a href="#">PRC-004-1</a>:</b>	
<p><b>R1.</b> The Transmission Owner and any Distribution Provider that owns a transmission Protection System shall each analyze its transmission Protection System Misoperations and shall develop and implement a Corrective Action Plan to avoid future Misoperations of a similar nature according to the Regional Reliability Organization's procedures developed for Reliability Standard PRC-003 Requirement 1.</p> <p><b>R3.</b> The Transmission Owner, any Distribution Provider that owns a transmission Protection System, and the Generator Owner shall each provide to its Regional Reliability Organization, documentation of its Misoperations analyses and Corrective Action Plans according to the Regional Reliability Organization's procedures developed for PRC-003 R1.</p>	
<b>In Standard <a href="#">PRC-005-1</a>:</b>	
<p><b>R1.</b> Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall have a Protection System maintenance and testing program for Protection Systems that affect the reliability of the BES. The program shall include:</p> <p><b>R1.1.</b> Maintenance and testing intervals and their basis.</p>	

**R1.2.** Summary of maintenance and testing procedures.

**R2.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization on request (within 30 calendar days). The documentation of the program implementation shall include:

**R2.1.** Evidence Protection System devices were maintained and tested within the defined intervals.

**R2.2.** Date each Protection System device was last tested/maintained.

**Clarification needed:**

Y-W Electric Association, Inc. (Y-WEA) and Tri-State Generation and Transmission Association, Inc. (Tri-State) respectfully request an interpretation of the term "transmission Protection System" and specifically whether protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System and is subject to these standards.

**Background:**

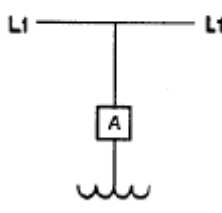
The requirements above from PRC-004-1 and PRC-005-1 refer to "the Transmission Owner and any Distribution Provider that owns a transmission Protection System" and place various testing and reporting requirements on these entities. The term "Protection System" is defined in the NERC glossary, and other interpretation requests currently under consideration cover the fine details of what this term means. However, these standards narrow the scope of their applicability to "transmission" Protection Systems. Unfortunately, this narrowing causes much confusion as to the applicability of these standards because the entire term "Transmission Protection System" is not defined anywhere in NERC's documentation.

There is some debate as to what constitutes a transmission Protection System, versus any other Protection System. For example, consider a tap from a looped 115 kV transmission system where this tap consists of a step-down power transformer and its associated distribution system. The Protection System includes the transformer protection equipment (overcurrent and differential relaying with a circuit switcher) and the associated distribution system protection equipment (usually reclosers). For this example, all connected distribution facilities are designed to be radial in nature and are normally operated radially, with only the possibility of being briefly connected in parallel with other distribution facilities during switching to feed this load from another substation while this substation is taken out of service.

In this example, the looped 115 kV transmission system may be part of the Bulk Electric System and its protective relays and breakers located at the endpoints of this line section would be considered transmission Protection Systems and be subject to these standards. The status of the transformer protection equipment is unclear, though. The protective relays and the circuit switcher are connected at or attached to equipment that is connected at 115 kV, but this equipment is essentially connected to the BES radially, serves radial load, and is not necessarily designed to protect the transmission system to which it is connected. In fact, in many cases this equipment is designed strictly to protect the transformer from overloads and through-faults relating to the connected distribution system as well as to minimize

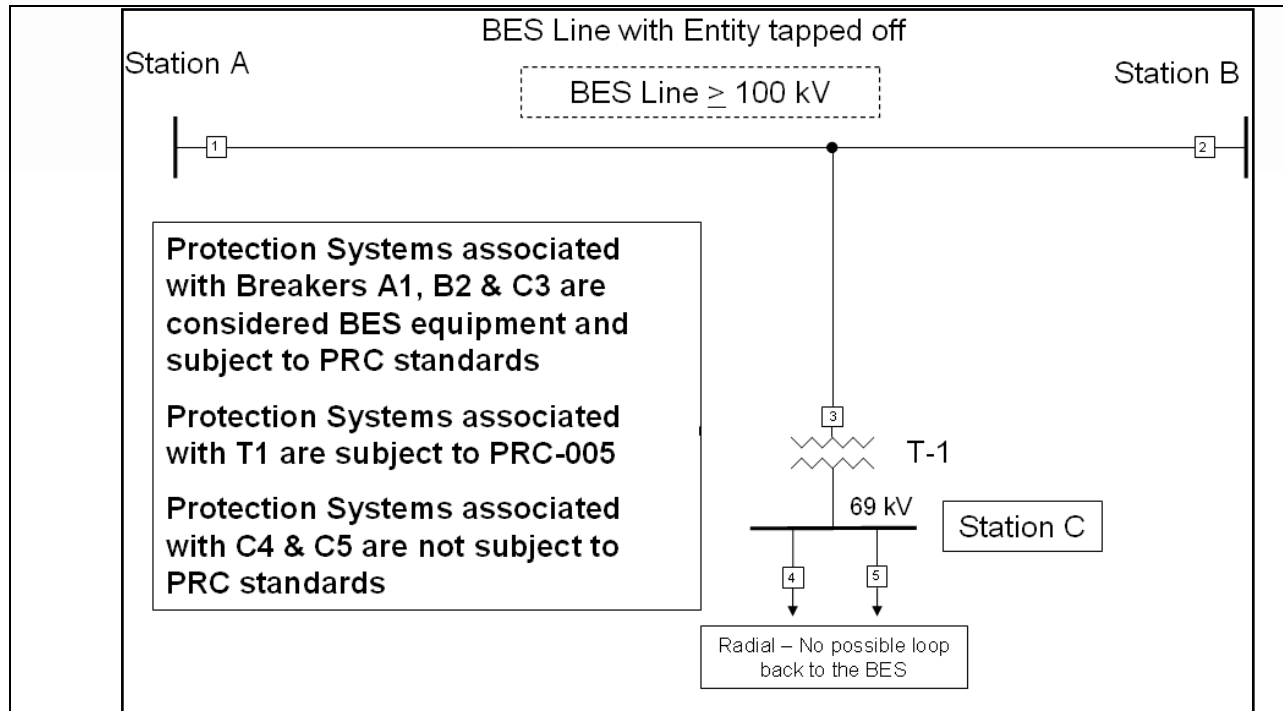
transformer damage resulting from internal faults by rapidly de-energizing the transformer for such internal faults.

There is a lack of consistent application or interpretation of these rules between various Regional Entities. For instance, ReliabilityFirst Corporation's Appendix A to their Bulk Electric System Definition shown below (available at <http://www.rfirst.org/Documents/AboutUs/Members/RFC%20BES%20Definition.pdf>) directly addresses this question, indicating that the transformer protection equipment in the above example would not be considered a transmission Protection System.

ReliabilityFirst Corp.	Bulk Electric System Definition
<p><b>Example 1B:</b> In another example, if a 138/12.47 kV distribution transformer is tapped from a networked 138 kV line which is included in the BES, and that transformer has protective relays (such as differential relays) that trip <u>only</u> the distribution transformer out-of-service and do not trip the networked 138 kV line; then those protective relays are <u>not included</u> as part of the BES definition. Breaker failure relaying on Breaker A, if any, is included if operation results in tripping of the networked 138kV line (Reference Diagram 1B.)</p>	
	
<p>Diagram 1B</p> <p>Relays protecting non-BES facility (e.g. transformer with secondary windings less than 100 kV) and tripping Breaker A are <u>not included</u> as part of BES.</p>	

However, slide 42 of Western Electricity Coordinating Council's PowerPoint presentation from their August 12, 2008 Relay Workshop (available at <http://www.wecc.biz/documents/library/compliance/2008/2008%2008%2012%20-%20Relay%20Workshop%20-%20Portland,%20OR%20-%20Presentation.ppt>) and shown below, also directly addresses this question, indicating that the equipment in the example above would be considered a transmission Protection System and would be subject to PRC-004-1 and PRC-005-1.





These issues stem from the fact that the term "transmission Protection System" is not clearly defined.

**Identify the material impact associated with this interpretation:**

**Identify the material impact to your organization or others caused by the lack of clarity or an incorrect interpretation of this standard.**

Depending upon the interpreted definition of the term "transmission Protection System," Y-WEA and other Tri-State members who are Distribution Providers and own substations connecting to the BES for power delivery from a wholesale provider as well as Tri-State and other Transmission Owners could be directly and materially affected by these standards. Y-WEA and other Tri-State members are compliant with these NERC standards. We believe the applicability of WECC's more stringent interpretation must be clarified for uniform enforcement.

Alleged violations from a WECC audit where these standards were not thought to be applicable could result in sanctions and civil penalties.

**Project 2009-17: Response to Request for an Interpretation of PRC-004-1 and PRC-005-1 for Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc.**

The following interpretation of PRC-004-1 — Analysis & Mitigation of Transmission and Generation Protection System Misoperations Requirements R1 and R3 and PRC-005-1 – Transmission and Generation Protection System Maintenance and Testing Requirements R1 and R2 was developed by the System Protection and Controls Subcommittee.

**Requirement Number and Text of Requirement**

**PRC-004-1:**

**R1.** The Transmission Owner and any Distribution Provider that owns a transmission Protection System shall each analyze its transmission Protection System Misoperations and shall develop and implement a Corrective Action Plan to avoid future Misoperations of a similar nature according to the Regional Reliability Organization's procedures developed for Reliability Standard PRC-003 Requirement 1.

**R3.** The Transmission Owner, any Distribution Provider that owns a transmission Protection System, and the Generator Owner shall each provide to its Regional Reliability Organization, documentation of its Misoperations analyses and Corrective Action Plans according to the Regional Reliability Organization's procedures developed for PRC-003 R1.

**PRC-005-1:**

**R1.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall have a Protection System maintenance and testing program for Protection Systems that affect the reliability of the BES. The program shall include:

**R1.1.** Maintenance and testing intervals and their basis.

**R1.2.** Summary of maintenance and testing procedures.

**R2.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization on request (within 30 calendar days). The documentation of the program implementation shall include:

**R2.1.** Evidence Protection System devices were maintained and tested within the defined intervals.

**R2.2.** Date each Protection System device was last tested/maintained.

**Question**

Y-W Electric Association, Inc. (Y-WEA) and Tri-State Generation and Transmission Association, Inc. (Tri-State) respectfully request an interpretation of the term "transmission

Protection System" and specifically whether protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System and is subject to these standards.

## Response

The request for interpretation of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2 focuses on the applicability of the term "transmission Protection System." The NERC *Glossary of Terms Used in Reliability Standards* contains a definition of "Protection System" but does not contain a definition of transmission Protection System. In these two standards, use of the phrase transmission Protection System indicates that the requirements using this phrase are applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.

A Protection System for a radially connected transformer energized from the BES would be considered a transmission Protection System and subject to these standards only if the protection trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element.

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

Request for an Interpretation of a Reliability Standard	
<b>Date submitted:</b> <a href="#">March 25, 2009</a>	
<b>Contact information for person requesting the interpretation:</b>	
<b>Name:</b> <a href="#">James A. Ziebarth</a>	<a href="#">T. William Middaugh</a>
<b>Organization:</b> <a href="#">Y-W Electric Association, Inc.</a> <a href="#">Tri-State Generation &amp; Transmission Association, Inc.</a>	
<b>Telephone:</b> <a href="#">(970) 345-2291</a>	<a href="#">(303) 254-3433</a>
<b>E-mail:</b> <a href="mailto:james@hea.coop">james@hea.coop</a>	<a href="mailto:bmiddaugh@tristategt.org">bmiddaugh@tristategt.org</a>
<b>Identify the standard that needs clarification:</b>	
<b>Standard Number (include version number):</b> <a href="#">PRC-004-1</a> and <a href="#">PRC-005-1</a>	
<b>Standard Title:</b> <a href="#">Analysis &amp; Mitigation of Transmission/Generation Protection System Misoperations; Transmission &amp; Generation Protection System Maintenance &amp; Testing</a>	
<b>Identify specifically what needs clarification</b>	
<b>Requirement Number and Text of Requirement:</b>	
<b>In Standard <a href="#">PRC-004-1</a>:</b>	
<p><b>R1.</b> The Transmission Owner and any Distribution Provider that owns a transmission Protection System shall each analyze its transmission Protection System Misoperations and shall develop and implement a Corrective Action Plan to avoid future Misoperations of a similar nature according to the Regional Reliability Organization's procedures developed for Reliability Standard PRC-003 Requirement 1.</p> <p><b>R3.</b> The Transmission Owner, any Distribution Provider that owns a transmission Protection System, and the Generator Owner shall each provide to its Regional Reliability Organization, documentation of its Misoperations analyses and Corrective Action Plans according to the Regional Reliability Organization's procedures developed for PRC-003 R1.</p>	
<b>In Standard <a href="#">PRC-005-1</a>:</b>	
<p><b>R1.</b> Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall have a Protection System maintenance and testing program for Protection Systems that affect the reliability of the BES. The program shall include:</p> <p><b>R1.1.</b> Maintenance and testing intervals and their basis.</p>	

**R1.2.** Summary of maintenance and testing procedures.

**R2.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization on request (within 30 calendar days). The documentation of the program implementation shall include:

**R2.1.** Evidence Protection System devices were maintained and tested within the defined intervals.

**R2.2.** Date each Protection System device was last tested/maintained.

**Clarification needed:**

Y-W Electric Association, Inc. (Y-WEA) and Tri-State Generation and Transmission Association, Inc. (Tri-State) respectfully request an interpretation of the term "transmission Protection System" and specifically whether protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System and is subject to these standards.

**Background:**

The requirements above from PRC-004-1 and PRC-005-1 refer to "the Transmission Owner and any Distribution Provider that owns a transmission Protection System" and place various testing and reporting requirements on these entities. The term "Protection System" is defined in the NERC glossary, and other interpretation requests currently under consideration cover the fine details of what this term means. However, these standards narrow the scope of their applicability to "transmission" Protection Systems. Unfortunately, this narrowing causes much confusion as to the applicability of these standards because the entire term "Transmission Protection System" is not defined anywhere in NERC's documentation.

There is some debate as to what constitutes a transmission Protection System, versus any other Protection System. For example, consider a tap from a looped 115 kV transmission system where this tap consists of a step-down power transformer and its associated distribution system. The Protection System includes the transformer protection equipment (overcurrent and differential relaying with a circuit switcher) and the associated distribution system protection equipment (usually reclosers). For this example, all connected distribution facilities are designed to be radial in nature and are normally operated radially, with only the possibility of being briefly connected in parallel with other distribution facilities during switching to feed this load from another substation while this substation is taken out of service.

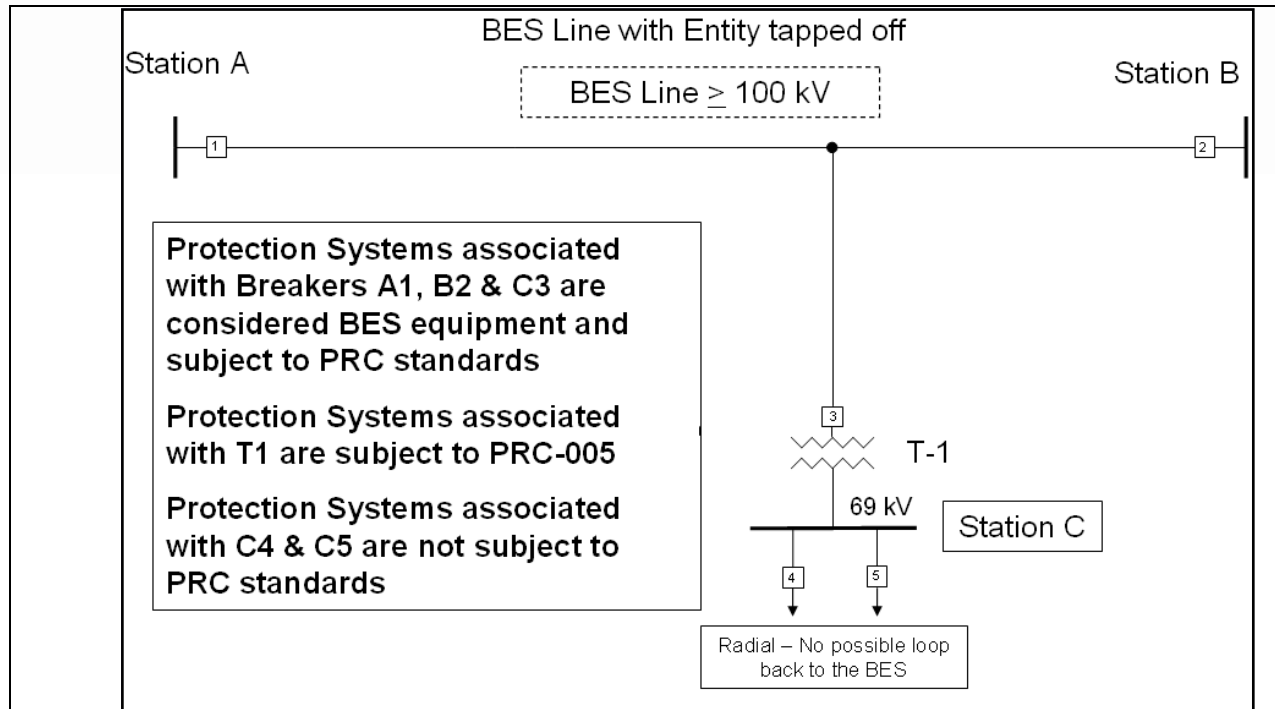
In this example, the looped 115 kV transmission system may be part of the Bulk Electric System and its protective relays and breakers located at the endpoints of this line section would be considered transmission Protection Systems and be subject to these standards. The status of the transformer protection equipment is unclear, though. The protective relays and the circuit switcher are connected at or attached to equipment that is connected at 115 kV, but this equipment is essentially connected to the BES radially, serves radial load, and is not necessarily designed to protect the transmission system to which it is connected. In fact, in many cases this equipment is designed strictly to protect the transformer from overloads and through-faults relating to the connected distribution system as well as to minimize

transformer damage resulting from internal faults by rapidly de-energizing the transformer for such internal faults.

There is a lack of consistent application or interpretation of these rules between various Regional Entities. For instance, ReliabilityFirst Corporation's Appendix A to their Bulk Electric System Definition shown below (available at <http://www.rfirst.org/Documents/AboutUs/Members/RFC%20BES%20Definition.pdf>) directly addresses this question, indicating that the transformer protection equipment in the above example would not be considered a transmission Protection System.

ReliabilityFirst Corp.	Bulk Electric System Definition
<p><b>Example 1B:</b> In another example, if a 138/12.47 kV distribution transformer is tapped from a networked 138 kV line which is included in the BES, and that transformer has protective relays (such as differential relays) that trip <u>only</u> the distribution transformer out-of-service and do not trip the networked 138 kV line; then those protective relays are <u>not included</u> as part of the BES definition. Breaker failure relaying on Breaker A, if any, is included if operation results in tripping of the networked 138kV line (Reference Diagram 1B.)</p>	
<p>Diagram 1B</p> <p>Relays protecting non-BES facility (e.g. transformer with secondary windings less than 100 kV) and tripping Breaker A are <u>not included</u> as part of BES.</p>	

However, slide 42 of Western Electricity Coordinating Council's PowerPoint presentation from their August 12, 2008 Relay Workshop (available at <http://www.wecc.biz/documents/library/compliance/2008/2008%2008%2012%20-%20Relay%20Workshop%20-%20Portland,%20OR%20-%20Presentation.ppt>) and shown below, also directly addresses this question, indicating that the equipment in the example above would be considered a transmission Protection System and would be subject to PRC-004-1 and PRC-005-1.



These issues stem from the fact that the term "transmission Protection System" is not clearly defined.

**Identify the material impact associated with this interpretation:**

**Identify the material impact to your organization or others caused by the lack of clarity or an incorrect interpretation of this standard.**

Depending upon the interpreted definition of the term "transmission Protection System," Y-WEA and other Tri-State members who are Distribution Providers and own substations connecting to the BES for power delivery from a wholesale provider as well as Tri-State and other Transmission Owners could be directly and materially affected by these standards. Y-WEA and other Tri-State members are compliant with these NERC standards. We believe the applicability of WECC's more stringent interpretation must be clarified for uniform enforcement.

Alleged violations from a WECC audit where these standards were not thought to be applicable could result in sanctions and civil penalties.

**Project 2009-17: Response to Request for an Interpretation of PRC-004-1 and PRC-005-1 for Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc.**

The following interpretation of PRC-004-1 — Analysis & Mitigation of Transmission and Generation Protection System Misoperations Requirements R1 and R3 and PRC-005-1 – Transmission and Generation Protection System Maintenance and Testing Requirements R1 and R2 was developed by the System Protection and Controls Subcommittee.

**Requirement Number and Text of Requirement**

**PRC-004-1:**

**R1.** The Transmission Owner and any Distribution Provider that owns a transmission Protection System shall each analyze its transmission Protection System Misoperations and shall develop and implement a Corrective Action Plan to avoid future Misoperations of a similar nature according to the Regional Reliability Organization's procedures developed for Reliability Standard PRC-003 Requirement 1.

**R3.** The Transmission Owner, any Distribution Provider that owns a transmission Protection System, and the Generator Owner shall each provide to its Regional Reliability Organization, documentation of its Misoperations analyses and Corrective Action Plans according to the Regional Reliability Organization's procedures developed for PRC-003 R1.

**PRC-005-1:**

**R1.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall have a Protection System maintenance and testing program for Protection Systems that affect the reliability of the BES. The program shall include:

**R1.1.** Maintenance and testing intervals and their basis.

**R1.2.** Summary of maintenance and testing procedures.

**R2.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization on request (within 30 calendar days). The documentation of the program implementation shall include:

**R2.1.** Evidence Protection System devices were maintained and tested within the defined intervals.

**R2.2.** Date each Protection System device was last tested/maintained.

**Question**



Y-W Electric Association, Inc. (Y-WEA) and Tri-State Generation and Transmission Association, Inc. (Tri-State) respectfully request an interpretation of the term "transmission Protection System" and specifically whether protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System and is subject to these standards.

## Response

The request for interpretation of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2 focuses on the applicability of the term "transmission Protection System." The NERC *Glossary of Terms Used in Reliability Standards* contains a definition of "Protection System" but does not contain a definition of transmission Protection System. [In these two standards, use of the term phrase transmission Protection System indicates that the requirements using this phrase are](#) applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) [and trips an interrupting device that interrupts current supplied directly from the BES](#) ~~initiating action to clear the protected element from all local sources.~~

~~In general, a~~ [Protection System for a radially-radially](#) -connected transformer ~~protection system~~ energized from the BES would ~~not~~ be considered a transmission Protection System [and subject to these standards only if the protection trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element.](#) ~~In the event that the transformer low side is connected to a potential source (generator or networked low side system) and there are Protection Systems installed to detect and initiate actions for transmission system faults, then these Protection Systems would be considered transmission Protection Systems.~~

~~It should also be noted that due to the differences among the Regional Entity definitions of the BES, requests for specific clarification of the regional definition, if needed, should be directed to the appropriate Regional Entity.~~



NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Standards Announcement

### Ballot Pool and Pre-ballot Window

March 29–April 28, 2010

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

### **Project 2009-17: Interpretation of PRC-004-1 and PRC005-1 for Y-W Electric and Tri State (Revision 2)**

A revised interpretation of standards PRC-004-1 — Analysis and Mitigation of Transmission and Generation Protection System Misoperations and PRC-005-1 — Transmission and Generation Protection System Maintenance and Testing for Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc. is posted for a 30-day pre-ballot review **until 8 a.m. Eastern on April 28, 2010.**

### **Instructions**

Registered Ballot Body members may join the ballot pool to be eligible to vote in the upcoming ballot at the following page: <https://standards.nerc.net/BallotPool.aspx>.

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-2009-17\\_RFI\\_YW\\_Rev2\\_in@nerc.com](mailto:bp-2009-17_RFI_YW_Rev2_in@nerc.com).

### **Next Steps**

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

### **Project Background**

This is a revised version of the interpretation. The drafting team revised the interpretation to address balloter concerns about wording related to low-voltage networks and small generators, the phrase “transmission Protection System,” and references to regional definitions of the Bulk Electric System.

The changes to the interpretation are shown in a redline version posted on the project page. The team has also posted a response to comments received during the initial ballot (conducted in November–December 2009) of the previous revision.

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

[http://www.nerc.com/filez/standards/Project2009-17\\_Interpretation\\_PRC-004\\_PRC-005\\_Y-W\\_TriStateG&T.html](http://www.nerc.com/filez/standards/Project2009-17_Interpretation_PRC-004_PRC-005_Y-W_TriStateG&T.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 Lauren Koller at [Lauren.Koller@nerc.net](mailto:Lauren.Koller@nerc.net)*



NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Standards Announcement

### Initial Ballot Window Open

April 28-May 10, 2010

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

#### **Project 2009-17: Interpretation PRC-004-1 and PRC-005-1 for Y-W Electric and Tri-State (Revision 2)**

An initial ballot window for an interpretation of standards PRC-004-1 — Analysis and Mitigation of Transmission and Generation Protection System Misoperations and PRC-005-1 — Transmission and Generation Protection System Maintenance and Testing for Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc is now open **until 8 p.m. Eastern on May 10, 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**

This is a revised version of the interpretation. The drafting team revised the interpretation to address balloter concerns about wording related to low-voltage networks and small generators, the phrase “transmission Protection System,” and references to regional definitions of the Bulk Electric System.

The changes to the interpretation are shown in a redline version posted on the project page. The team has also posted a response to comments received during the initial ballot (conducted in November–December 2009) of the previous revision.

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

<http://www.nerc.com/filez/standards/Project2009-17 Interpretation PRC-004 PRC-005 Y-W TriStateG&T.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 Lauren Koller at [Lauren.Koller@nerc.net](mailto:Lauren.Koller@nerc.net)*

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- Current Ballots
- Ballot Results
- Registered Ballot Body
- Proxy Voters

Home Page

**Ballot Results**

<b>Ballot Name:</b>	Project 2009-17 - Interpretation Y-W Electric and Tri-State (Revision 2)_in
<b>Ballot Period:</b>	4/28/2010 - 5/10/2010
<b>Ballot Type:</b>	Initial
<b>Total # Votes:</b>	232
<b>Total Ballot Pool:</b>	279
<b>Quorum:</b>	<b>83.15 % The Quorum has been reached</b>
<b>Weighted Segment Vote:</b>	74.55 %
<b>Ballot Results:</b>	<b>The standard will proceed to recirculation ballot.</b>

**Summary of Ballot Results**

Segment	Ballot Pool	Segment Weight	Affirmative		Negative		Abstain # Votes	No Vote
			# Votes	Fraction	# Votes	Fraction		
1 - Segment 1.	82	1	53	0.746	18	0.254	1	10
2 - Segment 2.	9	0.6	5	0.5	1	0.1	1	2
3 - Segment 3.	69	1	37	0.698	16	0.302	7	9
4 - Segment 4.	19	1	9	0.75	3	0.25	3	4
5 - Segment 5.	49	1	25	0.735	9	0.265	2	13
6 - Segment 6.	34	1	18	0.692	8	0.308	3	5
7 - Segment 7.	0	0	0	0	0	0	0	0
8 - Segment 8.	7	0.6	5	0.5	1	0.1	0	1
9 - Segment 9.	2	0	0	0	0	0	1	1
10 - Segment 10.	8	0.4	3	0.3	1	0.1	2	2
<b>Totals</b>	<b>279</b>	<b>6.6</b>	<b>155</b>	<b>4.921</b>	<b>57</b>	<b>1.679</b>	<b>20</b>	<b>47</b>

**Individual Ballot Pool Results**

Segment	Organization	Member	Ballot	Comments
1	Ameren Services	Kirit S. Shah	Affirmative	
1	American Electric Power	Paul B. Johnson	Negative	<a href="#">View</a>
1	American Transmission Company, LLC	Jason Shaver	Affirmative	
1	Associated Electric Cooperative, Inc.	John Bussman	Affirmative	
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	Negative	<a href="#">View</a>
1	Bonneville Power Administration	Donald S. Watkins	Affirmative	
1	CenterPoint Energy	Paul Rocha	Affirmative	
1	Central Maine Power Company	Brian Conroy		
1	City of Vero Beach	Randall McCamish	Affirmative	
1	City Utilities of Springfield, Missouri	Jeff Knottek	Affirmative	
1	Clark Public Utilities	Jack Stamper	Affirmative	
1	Cleco Power LLC	Danny McDaniel	Negative	<a href="#">View</a>
1	Colorado Springs Utilities	Paul Morland		
1	Commonwealth Edison Co.	Daniel Brotzman	Affirmative	
1	Consolidated Edison Co. of New York	Christopher L de Graffenried	Affirmative	
1	Deseret Power	James Tucker	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	Negative	
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	GDS Associates, Inc.	Claudiu Cadar	Negative	<a href="#">View</a>
1	Great River Energy	Gordon Pietsch	Affirmative	
1	Hoosier Energy Rural Electric Cooperative, Inc.	Robert Solomon	Affirmative	
1	Hydro One Networks, Inc.	Ajay Garg	Affirmative	
1	Idaho Power Company	Ronald D. Schellberg	Affirmative	
1	ITC Transmission	Elizabeth Howell	Affirmative	
1	Kansas City Power & Light Co.	Michael Gammon	Affirmative	
1	Keys Energy Services	Stan T. Rzad		
1	Lake Worth Utilities	Walt Gill	Affirmative	
1	Lakeland Electric	Larry E Watt	Negative	<a href="#">View</a>
1	Lee County Electric Cooperative	John W Delucca	Affirmative	
1	Lincoln Electric System	Doug Bantam		
1	Long Island Power Authority	Jonathan Appelbaum	Affirmative	
1	Manitoba Hydro	Michelle Rheault	Negative	<a href="#">View</a>
1	MEAG Power	Danny Dees	Affirmative	
1	MidAmerican Energy Co.	Terry Harbour	Negative	<a href="#">View</a>
1	Minnesota Power, Inc.	Randi Woodward	Negative	<a href="#">View</a>
1	Montana-Dakota Utilities Co.	Henry Ford	Affirmative	
1	National Grid	Saurabh Saksena		
1	New York Power Authority	Arnold J. Schuff	Affirmative	
1	Northeast Utilities	David H. Boguslawski	Affirmative	
1	Northern Indiana Public Service Co.	Kevin M Largura	Affirmative	
1	Ohio Valley Electric Corp.	Robert Matthey	Negative	
1	Oklahoma Gas and Electric Co.	Marvin E VanBebber	Abstain	
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	Pacific Gas and Electric Company	Chifong L. Thomas	Negative	<a href="#">View</a>
1	PacifiCorp	Mark Sampson	Negative	
1	PECO Energy	Ronald Schloendorn	Affirmative	
1	Platte River Power Authority	John C. Collins		
1	Portland General Electric Co.	Frank F. Afranji	Affirmative	<a href="#">View</a>
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	Affirmative	
1	Progress Energy Carolinas	Sammy Roberts		
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	Negative	<a href="#">View</a>
1	Santee Cooper	Terry L. Blackwell	Affirmative	
1	SCE&G	Henry Delk, Jr.	Affirmative	
1	Seattle City Light	Pawel Krupa		
1	Sierra Pacific Power Co.	Richard Salgo	Negative	<a href="#">View</a>
1	South Texas Electric Cooperative	Richard McLeon	Affirmative	

1	Southern California Edison Co.	Dana Cabbell	Negative	
1	Southern Company Services, Inc.	Horace Stephen Williamson	Negative	<a href="#">View</a>
1	Southwest Transmission Cooperative, Inc.	James L. Jones	Affirmative	
1	Southwestern Power Administration	Gary W Cox	Affirmative	
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	Negative	<a href="#">View</a>
2	Alberta Electric System Operator	Jason L. Murray	Affirmative	
2	California ISO	Timothy VanBlaricom	Negative	<a href="#">View</a>
2	Electric Reliability Council of Texas, Inc.	Chuck B Manning	Abstain	<a href="#">View</a>
2	Independent Electricity System Operator	Kim Warren	Affirmative	<a href="#">View</a>
2	ISO New England, Inc.	Kathleen Goodman	Affirmative	
2	Midwest ISO, Inc.	Jason L Marshall	Affirmative	
2	New Brunswick System Operator	Alden Briggs		
2	PJM Interconnection, L.L.C.	Tom Bowe	Affirmative	
2	Southwest Power Pool	Charles H Yeung		
3	Alabama Power Company	Richard J. Mandes	Negative	<a href="#">View</a>
3	Ameren Services	Mark Peters	Affirmative	
3	American Electric Power	Raj Rana	Negative	<a href="#">View</a>
3	Arizona Public Service Co.	Thomas R. Glock	Affirmative	
3	Atlantic City Electric Company	James V. Petrella	Affirmative	
3	Basin Electric Power Cooperative	Daniel Klempel	Abstain	
3	BC Hydro and Power Authority	Pat G. Harrington	Abstain	
3	Blue Ridge Power Agency	Duane S. Dahlquist	Affirmative	
3	Bonneville Power Administration	Rebecca Berdahl	Affirmative	
3	Central Lincoln PUD	Steve Alexanderson	Affirmative	<a href="#">View</a>
3	City of Bartow, Florida	Matt Culverhouse	Abstain	
3	City of Clewiston	Lynne Mila		
3	City of Farmington	Linda R. Jacobson	Affirmative	
3	City of Green Cove Springs	Gregg R Griffin	Abstain	
3	City of Leesburg	Phil Janik		
3	Cleco Utility Group	Bryan Y Harper	Negative	<a href="#">View</a>
3	ComEd	Bruce Krawczyk	Affirmative	
3	Consolidated Edison Co. of New York	Peter T Yost	Affirmative	
3	Consumers Energy	David A. Lapinski	Affirmative	
3	Cowlitz County PUD	Russell A Noble	Affirmative	<a href="#">View</a>
3	Delmarva Power & Light Co.	Michael R. Mayer	Affirmative	
3	Detroit Edison Company	Kent Kujala	Affirmative	
3	Dominion Resources Services	Michael F Gildea	Abstain	
3	Duke Energy Carolina	Henry Ernst-Jr	Affirmative	
3	East Kentucky Power Coop.	Sally Witt	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	Affirmative	
3	Florida Power Corporation	Lee Schuster	Affirmative	
3	Georgia Power Company	Anthony L Wilson	Negative	<a href="#">View</a>
3	Georgia System Operations Corporation	R Scott S. Barfield-McGinnis	Abstain	
3	Great River Energy	Sam Kokkinen	Affirmative	
3	Gulf Power Company	Gwen S Frazier	Negative	<a href="#">View</a>
3	Hydro One Networks, Inc.	Michael D. Penstone	Affirmative	
3	JEA	Garry Baker		
3	Kansas City Power & Light Co.	Charles Locke		
3	Kissimmee Utility Authority	Gregory David Woessner		
3	Lakeland Electric	Mace Hunter	Affirmative	
3	Lincoln Electric System	Bruce Merrill	Negative	<a href="#">View</a>
3	Louisville Gas and Electric Co.	Charles A. Freibert	Negative	
3	Manitoba Hydro	Greg C Parent	Negative	<a href="#">View</a>
3	MidAmerican Energy Co.	Thomas C. Mielnik	Negative	<a href="#">View</a>
3	Mississippi Power	Don Horsley	Negative	<a href="#">View</a>
3	New York Power Authority	Marilyn Brown	Affirmative	
3	Niagara Mohawk (National Grid Company)	Michael Schiavone		
3	Northern Indiana Public Service Co.	William SeDoris	Affirmative	
3	Ocala Electric Utility	David T. Anderson	Affirmative	
3	Orlando Utilities Commission	Ballard Keith Mutters	Abstain	
3	OTP Wholesale Marketing	Bradley Tollerson	Affirmative	

3	PacifiCorp	John Apperson	Affirmative	
3	PECO Energy an Exelon Co.	Vincent J. Catania	Affirmative	
3	Platte River Power Authority	Terry L Baker	Affirmative	
3	Potomac Electric Power Co.	Robert Reuter		
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	Salem Electric	Anthony Schacher	Negative	<a href="#">View</a>
3	Salt River Project	John T. Underhill	Negative	<a href="#">View</a>
3	Santee Cooper	Zack Dusenbury	Affirmative	
3	Seattle City Light	Dana Wheelock		
3	South Carolina Electric & Gas Co.	Hubert C. Young	Affirmative	
3	Southern California Edison Co.	David Schiada	Negative	
3	Tampa Electric Co.	Ronald L Donahey		
3	Tri-State G & T Association Inc.	Janelle Marriott	Affirmative	
3	United Power Inc	Dean Hubbuck	Affirmative	
3	Wisconsin Electric Power Marketing	James R. Keller	Negative	<a href="#">View</a>
3	Wisconsin Public Service Corp.	Gregory J Le Grave	Negative	<a href="#">View</a>
3	Xcel Energy, Inc.	Michael Ibold	Negative	<a href="#">View</a>
4	Alliant Energy Corp. Services, Inc.	Kenneth Goldsmith	Negative	<a href="#">View</a>
4	City of Clewiston	Kevin McCarthy		
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		
4	Fort Pierce Utilities Authority	Thomas W. Richards	Negative	
4	Georgia System Operations Corporation	Guy Andrews	Abstain	
4	Illinois Municipal Electric Agency	Bob C. Thomas	Affirmative	
4	Integrus Energy Group, Inc.	Christopher Plante	Abstain	
4	LaGen	Richard Comeaux	Abstain	
4	Ohio Edison Company	Douglas Hohlbaugh	Affirmative	
4	Sacramento Municipal Utility District	Mike Ramirez	Affirmative	
4	Seattle City Light	Hao Li		
4	Seminole Electric Cooperative, Inc.	Steven R Wallace	Affirmative	
4	South Mississippi Electric Power Association	Steve McElhaney		
4	Tacoma Public Utilities	Keith Morissette	Affirmative	
4	Wisconsin Energy Corp.	Anthony Jankowski	Negative	<a href="#">View</a>
4	Y-W Electric Association, Inc.	James A Ziebarth	Affirmative	<a href="#">View</a>
5	AEP Service Corp.	Brock Ondayko		
5	Amerenue	Sam Dwyer	Affirmative	
5	Avista Corp.	Edward F. Groce	Affirmative	
5	Black Hills Corp	George Tatar	Negative	<a href="#">View</a>
5	Bonneville Power Administration	Francis J. Halpin	Affirmative	
5	City of Grand Island	Jeff Mead	Negative	
5	City of Tallahassee	Alan Gale	Affirmative	<a href="#">View</a>
5	Cleco Power LLC	Grant Bryant		
5	Connectiv Energy Supply, Inc.	Kara Dundas	Affirmative	
5	Consolidated Edison Co. of New York	Wilket (Jack) Ng	Affirmative	
5	Constellation Power Source Generation, Inc.	Amir Y Hammad	Abstain	<a href="#">View</a>
5	Consumers Energy	James B Lewis	Affirmative	
5	Detroit Edison Company	Christy Wicke	Affirmative	
5	Dominion Resources, Inc.	Mike Garton	Affirmative	
5	Duke Energy	Robert Smith	Affirmative	
5	East Kentucky Power Coop.	Stephen Ricker	Affirmative	
5	Edison Mission Energy	Ellen Oswald		
5	Entergy Corporation	Stanley M Jaskot		
5	Exelon Nuclear	Michael Korchynsky	Affirmative	
5	FirstEnergy Solutions	Kenneth Dresner		
5	Florida Municipal Power Agency	David Schumann		
5	Great River Energy	Cynthia E Sulzer	Affirmative	
5	JEA	Donald Gilbert	Abstain	
5	Kansas City Power & Light Co.	Scott Heidtbrink	Affirmative	
5	Kissimmee Utility Authority	Mike Blough	Negative	
5	Liberty Electric Power LLC	Daniel Duff		
5	Lincoln Electric System	Dennis Florum		

5	Louisville Gas and Electric Co.	Charlie Martin		
5	MidAmerican Energy Co.	Christopher Schneider	Negative	
5	New York Power Authority	Gerald Mannarino	Affirmative	
5	Northern Indiana Public Service Co.	Michael K Wilkerson	Affirmative	
5	Orlando Utilities Commission	Richard Kinas		
5	PacifiCorp	Sandra L. Shaffer	Affirmative	
5	Portland General Electric Co.	Gary L Tingley		
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	Negative	<a href="#">View</a>
5	Seattle City Light	Michael J. Haynes	Affirmative	
5	Seminole Electric Cooperative, Inc.	Brenda K. Atkins	Affirmative	
5	South Carolina Electric & Gas Co.	Richard Jones	Affirmative	
5	Tampa Electric Co.	RJames Rocha		
5	U.S. Army Corps of Engineers Northwestern Division	Karl Bryan	Negative	<a href="#">View</a>
5	U.S. Bureau of Reclamation	Martin Bauer P.E.		
5	Wisconsin Electric Power Co.	Linda Horn	Negative	<a href="#">View</a>
5	Wisconsin Public Service Corp.	Leonard Rentmeester	Negative	<a href="#">View</a>
5	Xcel Energy, Inc.	Liam Noailles	Negative	<a href="#">View</a>
6	AEP Marketing	Edward P. Cox	Negative	<a href="#">View</a>
6	Black Hills Corp	Tyson Taylor		
6	Bonneville Power Administration	Brenda S. Anderson	Affirmative	
6	Cleco Power LLC	Matthew D Cripps	Negative	<a href="#">View</a>
6	Consolidated Edison Co. of New York	Nickesha P Carrol	Affirmative	
6	Constellation Energy Commodities Group	Brenda Powell	Affirmative	
6	Dominion Resources, Inc.	Louis S Slade	Affirmative	
6	Duke Energy Carolina	Walter Yeager		
6	Entergy Services, Inc.	Terri F Benoit	Affirmative	
6	Exelon Power Team	Pulin Shah		
6	FirstEnergy Solutions	Mark S Travaglianti	Affirmative	
6	Florida Municipal Power Agency	Richard L. Montgomery		
6	Florida Municipal Power Pool	Thomas E Washburn	Abstain	
6	Florida Power & Light Co.	Silvia P Mitchell	Affirmative	
6	Great River Energy	Donna Stephenson	Affirmative	
6	Kansas City Power & Light Co.	Thomas Saitta	Affirmative	
6	Lakeland Electric	Paul Shipps	Negative	<a href="#">View</a>
6	Lincoln Electric System	Eric Ruskamp	Negative	<a href="#">View</a>
6	Louisville Gas and Electric Co.	Daryn Barker	Negative	
6	Manitoba Hydro	Daniel Prowse	Negative	<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	Abstain	
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	Santee Cooper	Suzanne Ritter	Affirmative	
6	Seattle City Light	Dennis Sismaet	Abstain	
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	Negative	
6	Western Area Power Administration - UGP Marketing	John Stonebarger	Affirmative	
6	Xcel Energy, Inc.	David F. Lemmons	Negative	<a href="#">View</a>
8		Roger C Zaklukiewicz	Affirmative	
8		James A Maenner	Affirmative	
8	JDRJC Associates	Jim D. Cyrulewski	Affirmative	
8	Power Energy Group LLC	Peggy Abbadini	Affirmative	
8	Shafer, Kline, & Warren Inc. (SKW)	Michael J Bequette, P.E.	Affirmative	
8	Utility Services, Inc.	Brian Evans-Mongeon		
8	Volkman Consulting, Inc.	Terry Volkman	Negative	
9	California Energy Commission	William Mitchell Chamberlain		
9	Commonwealth of Massachusetts Department of Public Utilities	Donald E. Nelson	Abstain	





10	Electric Reliability Council of Texas, Inc.	Kent Saathoff	<a href="#">Abstain</a>	<a href="#">View</a>
10	Florida Reliability Coordinating Council	Linda Campbell	<a href="#">Affirmative</a>	
10	Midwest Reliability Organization	Dan R. Schoenecker	<a href="#">Negative</a>	<a href="#">View</a>
10	New York State Reliability Council	Alan Adamson	<a href="#">Affirmative</a>	
10	Northeast Power Coordinating Council, Inc.	Guy V. Zito	<a href="#">Affirmative</a>	
10	ReliabilityFirst Corporation	Jacque Smith	<a href="#">Abstain</a>	
10	SERC Reliability Corporation	Carter B Edge		
10	Western Electricity Coordinating Council	Louise McCarren		

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NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Standards Announcement

### Initial Ballot Results

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

#### **Project 2009-17: Interpretation PRC-004-1 and PRC-005-1 for Y-W Electric and Tri-State (Revision 2)**

The initial ballot for a revised interpretation of PRC-004-1 — Analysis and Mitigation of Transmission and Generation Protection System Misoperations and PRC-005-1 — Transmission and Generation Protection System Maintenance and Testing for Y-W Electric Association, Inc. and Tri-State Generation and Transmission Association, Inc ended on May 10, 2010.

#### **Ballot Results**

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

Quorum: 83.15 %  
Approval: 74.55 %

Since at least one negative ballot included a comment, these results are not final. A second (or recirculation) ballot must be conducted. Ballot criteria are listed at the end of the announcement.

#### **Next Steps**

As part of the recirculation ballot process, the drafting team must draft and post responses to voter comments. The drafting team will also determine whether or not to make revisions to the balloted item(s). Should the team decide to make revisions, the revised item(s) will return to the initial ballot phase.

#### **Project Background**

This is a revised version of the interpretation. The drafting team revised the interpretation to address balloter concerns about wording related to low-voltage networks and small generators, the phrase “transmission Protection System,” and references to regional definitions of the Bulk Electric System.

The changes to the interpretation are shown in a redline version posted on the project page. The team has also posted a response to comments received during the initial ballot (conducted in November–December 2009) of the previous revision.

More information can be found on the project page:

[http://www.nerc.com/filez/standards/Project2009-17 Interpretation PRC-004 PRC-005 Y-W TriStateG&T.html](http://www.nerc.com/filez/standards/Project2009-17%20Interpretation%20PRC-004%20PRC-005%20Y-W%20TriStateG&T.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)

**Consideration of Comments on Initial Ballot — Interpretation Y-W Electric and Tri-State (Revision 2) (Project 2009-17)  
 Initial Ballot (April 28-May 10, 2010)**

**Summary Consideration:**

The majority of the commenters stated, in various ways, concerns regarding what could be construed as a BES element and requested further clarification. The SDT explained that providing a clarification or further defining a BES element was outside the scope of the interpretation. The SDT believes that references to the BES in the interpretation are clear and valid in the context of the existing NERC definition of the BES (as defined by the Regional Reliability Organization per the NERC Glossary of Terms). The SDT further explained that the request for interpretation did not ask for clarification as to when a piece of equipment was considered a BES element. Y-W Electric Association, INC. and Tri-State Generation and Transmission Association, Inc. requested an interpretation of the term “transmission Protection System” and specifically whether protection for a radially-connected transformer protection system energized from the BES was considered a transmission Protection System and if it is subject to these standards. The SDT believes that the interpretation clearly answers both the general and specific aspects of the request.

A couple of commenters indicated that some Protection Systems were installed strictly for the purpose of protecting generators, substation transformers and Distribution Systems downstream. They were concerned that, based on this interpretation, they would now be considered transmission Protection Systems. The SDT explained that in order to be considered a “transmission Protection System”, all three of the aspects of the interpretation must be met:

- (1) installed for the purpose of detecting Faults on the transmission elements,
- (2) the protected element is identified as included in the BES, and
- (3) trips an interrupting device that interrupts current supplied directly from the BES.

The definition of Bulk Electric System: As defined by the Regional Reliability Organization, the electrical generation resources, transmission lines, interconnections with neighboring systems, and associated equipment, generally operated at voltages of 100 kV or higher. Radial transmission facilities serving only load with one transmission source are generally not included in this definition.

If you feel that the drafting team overlooked your comments, please let us know immediately. Our goal is to give every comment serious consideration in this process. If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Herbert Schrayshuen, at 609-452-8060 or at herb.schrayshuen@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.<sup>1</sup>

Voter	Entity	Segment	Vote	Comment
Larry E Watt	Lakeland Electric	1	Negative	a protection system installed on that non-BES transformer could be determined to be a "transmission Protection System" with this interpretation. This contradicts the example.

<sup>1</sup> The appeals process is in the Reliability Standards Development Procedure: [http://www.nerc.com/files/RSDP\\_V6\\_1\\_12Mar07.pdf](http://www.nerc.com/files/RSDP_V6_1_12Mar07.pdf).

**Consideration of Comments on Initial Ballot of Interpretation for Y-W Electric Association, Inc. Tri-State Generation & Transmission Association, Inc. of PRC-004-1, Requirements R1 and R3 and PRC-005-1, Requirements R1 and R2**

Voter	Entity	Segment	Vote	Comment
<p><b>Response:</b> The interpretation states that the requirements are “applicable to any Protection System that is installed for the purpose of detecting Faults on <u>Transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System</u>” (emphasis added). A Protection System installed on a non-BES transformer is not included in this list. This interpretation therefore excludes the possibility that the commenter’s example could be determined to be a “transmission Protection System.”</p>				
Horace Stephen Williamson	Southern Company Services, Inc.	1	Negative	<p>Although we are in agreement with the first part of the definition that has been proposed for the phase 'transmission Protection System' as "any Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System" we do not concur with the modification to the qualifier noted as 'and trips an interrupting device that interrupts current supplied directly from the BES'. We feel that the original applicability to 'and initiates action to clear the protected element from all local sources' more accurately addresses the transmission reliability concerns. As now proposed, a 230/69-kV facility that is interconnected with other non- BES 69-kV sources (other substations or generation facilities) and has Protection Systems installed to detect faults on the 230-kV source (.. Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System..) and trips a 69-kV device, would not be included since it isn't tripping a device ' that interrupts current supplied directly from the BES'.</p>
Richard J. Mandes	Alabama Power Company	3	Negative	
Anthony L Wilson	Georgia Power Company	3	Negative	
Gwen S Frazier	Gulf Power Company	3	Negative	
Don Horsley	Mississippi Power	3	Negative	
<p><b>Response:</b> The drafting team believes the present interpretation appropriately addresses the reliability concern. In the commenters' example, if a failure to interrupt the Fault current from the 69 kV system resulted in a reliability concern the 69 kV Elements could be identified as BES Elements.</p>				
George Tatar	Black Hills Corp	5	Negative	BHP voted No because of the qualifiers "that interrupts current supplied directly from the BES' and 'the transformer is a BES element". These qualifiers force the issue of whether a

**Consideration of Comments on Initial Ballot of Interpretation for Y-W Electric Association, Inc. Tri-State Generation & Transmission Association, Inc. of PRC-004-1, Requirements R1 and R3 and PRC-005-1, Requirements R1 and R2**

Voter	Entity	Segment	Vote	Comment
				transformer fed from a non-BES line can be considered a BES transformer. Because the interpretation, as written, does not allow the entities question to be consistently and reliably answered, BHP is voting NO.
<p><b>Response:</b> Deciding whether the transformer in the commenter’s example is a BES element is outside the scope of the interpretation. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms).</p>				
Eric Egge	Black Hills Corp	1	Negative	Black Hills Power respectfully votes against the interpretation because of the qualifiers ‘that interrupts current supplied directly from the BES’ and ‘the transformer is a BES element’. These qualifiers force the issue of whether a transformer fed from a non-BES line can be considered a BES transformer. This issue arises because of disagreement of whether a radial transmission line tapped off the BES serving only load is part of the BES, and that question arises from different interpretation of what constitutes ‘one’ source or ‘two’ sources. Although the interpretation must be limited in scope to the standards affected, the original interpretation request from the submitting entities asks whether ‘protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System’. Because the interpretation as written does not allow the entities’ question to be consistently and reliably answered, Black Hills Power is voting “No”.
<p><b>Response:</b> Deciding whether the transformer in the commenter’s example is a BES element is outside the scope of the interpretation. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms).</p>				
Danny McDaniel	Cleco Power LLC	1	Negative	Cleco agrees with the intent of the interpretation but disagrees that an Entity must determine if the transformer or line is a BES element. Additional clarification is required. Protection systems on radially connected transformers or lines serving load only that do not interrupt transmission grid flow as part of its protection scheme should not be part of the transmission Protection System. If the protection scheme tripped load served by the radially connected line or transformer and additional flows between transmission substations, the protection scheme would be part of the transmission Protection System.
Bryan Y Harper	Cleco Utility Group	3	Negative	
Matthew D Cripps	Cleco Power LLC	6	Negative	
<p><b>Response:</b> The drafting team has not stated in this interpretation what Entity is responsible for determining if a transformer or a line is a BES element. Deciding whether a transformer or line is a BES element is outside the scope of the interpretation. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization</p>				

**Consideration of Comments on Initial Ballot of Interpretation for Y-W Electric Association, Inc. Tri-State Generation & Transmission Association, Inc. of PRC-004-1, Requirements R1 and R3 and PRC-005-1, Requirements R1 and R2**

Voter	Entity	Segment	Vote	Comment
per the NERC Glossary of terms).				
Terry Harbour	MidAmerican Energy Co.	1	Negative	Comment: Further clarification is required regarding the definition of a “BES element” (e.g., What is a BES transformer?). Receiving current from the BES is not a suitable criterion for applicability. As currently written 115kV/12kV distribution transformers could be incorrectly classified as a BES elements (without a clear definition) because they receive current from the BES. The concept of “no potential loop” back to the BES as presented in one of the examples is incorrect as this could bring in all facilities into scope regardless of voltage when that facility could be tied to another 100 kV and greater source. This could include lower voltage distribution based networks or possibly 15 kV class feeders with ties to adjacent feeders also fed from nearby BES substations. We propose the following definitions. Non-GSU transformers must have all windings (excluding any tertiary) rated at 100kV and above to be classified as a BES transformer. GSU transformers must have one winding rated at 100kV and above in order to be classified to be a BES transformer. These definitions are consistent with the bright line 100 kV and greater concept.
<b>Response:</b> Providing clarification regarding the definition of a “BES element” is outside the scope of the interpretation. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms).				
Kenneth Goldsmith	Alliant Energy Corp. Services, Inc.	4	Negative	Further clarification is required regarding the definition of "BES Element" (e.g. What is a BES transformer?). Receiving current from the BES is not a suitable criterion for applicability. As currently written 115 kV/12 kV distribution transformers would incorrectly be classified as as BES Element because they receive current from the BES. We propose the following definitions: Non-GSU Transformers -- Must have all windings (excluding the tertiary winding) rated at 100 kV and above to be classified as a BES Transformer. GSU Transformers -- Must have a primary winding rated at 100 kV or above in order to be classified as a BES Transformer.
<b>Response:</b> Providing clarification regarding the definition of a “BES element” is outside the scope of the interpretation. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms).				

**Consideration of Comments on Initial Ballot of Interpretation for Y-W Electric Association, Inc. Tri-State Generation & Transmission Association, Inc. of PRC-004-1, Requirements R1 and R3 and PRC-005-1, Requirements R1 and R2**

Voter	Entity	Segment	Vote	Comment
Randi Woodward	Minnesota Power, Inc.	1	Negative	Further clarification is required regarding the definition of a “BES Element” (e.g., What is a BES transformer?). We propose the following definitions: - Non GSU transformers must have all windings (excluding tertiary windings) rated at 100kV and above in order to be classified as a BES transformer. - GSU transformers must have a primary winding rating at 100kV and above in order to be classified as a BES transformer.
<p><b>Response:</b> Providing clarification regarding the definition of a “BES element” is outside the scope of the interpretation. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms).</p>				
Bruce Merrill	Lincoln Electric System	3	Negative	Further clarification is required regarding the definition of a “BES element” (e.g., What is a BES transformer?). Receiving current from the BES is not a suitable criterion for applicability. As currently written 115kV/12kV distribution transformers would incorrectly be classified as a BES element because they receive current from the BES. We propose the following definitions: Non-GSU transformers must have all windings (excluding the tertiary winding) rated at 100kV and above in order to be classified to be a BES transformer. GSU transformers must have a primary winding rated at 100kV and above in order to be classified to be a BES transformer.
Eric Ruskamp	Lincoln Electric System	6	Negative	
<p><b>Response:</b> Providing clarification regarding the definition of a “BES element” is outside the scope of the interpretation. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms).</p>				
Dan R. Schoenecker	Midwest Reliability Organization	10	Negative	Further clarification is required regarding the definition of a “BES element” (e.g., What is a BES transformer?). Receiving current from the BES is not a suitable criterion for applicability. As currently written 115kV/12kV distribution transformers would incorrectly be classified as a BES element because they receive current from the BES.
<p><b>Response:</b> Providing clarification regarding the definition of a “BES element” is outside the scope of the interpretation. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms).</p>				
Michelle Rheault	Manitoba Hydro	1	Negative	Manitoba Hydro does not agree with the statement “A Protection System for a radially connected transformer energized from the BES would be considered a transmission Protection System and subject to these standards only if the protection trips an interrupting

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Voter	Entity	Segment	Vote	Comment
Greg C Parent	Manitoba Hydro	3	Negative	device that interrupts current supplied directly from the BES and the transformer is a BES element". We feel that consideration of the transformer low side being networked or connected to a source should determine if it is a transmission Protection System, as stated in previous interpretation. If a radially connected transformer trips an interrupting device that interrupts current supplied directly from the BES, and the interrupting device is in a ring bus configuration, this does not affect, the remaining BES transmission lines on that ring. Why did the last interpretation state that a radially connected transformer is not a transmission Protection System, and this interpretation states that it is a transmission Protection System? Would a radially connected transformer not be the same as a radially connected line, which does not fall under PRC-005-1?
Daniel Prowse	Manitoba Hydro	6	Negative	
<p><b>Response:</b> Changes between the previous interpretation and the current interpretation to remove the reference to low-side networks were made in response to comments. The drafting team believes the reference to interrupting current supplied from the BES provides more clarity than the previous reference to low-side networks. With regard to the commenters' comparison of the previous and present interpretations, please note that the present interpretation does not state that a Protection System on a radially connected transformer is a "transmission Protection System."</p>				
Paul Shipps	Lakeland Electric	6	Negative	Needs better wording on "interrupts current supplied directly from the BES", not having to determine what the purpose of back-up protection is.
<p><b>Response:</b> The drafting team spent considerable time drafting this phrase and does not believe that additional clarity is necessary.</p>				
James R. Keller	Wisconsin Electric Power Marketing	3	Negative	The Comment Period and Ballot Period should not overlap. The industry and Standard Drafting Team should have opportunity to review comments prior to a ballot.
Linda Horn	Wisconsin Electric Power Co.	5	Negative	
<p><b>Response:</b> The drafting team is unaware of any overlap during development of this interpretation. There is no comment period for interpretations – comments are limited to those submitted with ballots. The present interpretation and responses to comments from the previous ballot were posted at the start of the 30-day pre-ballot window which was open from March 29 to April 28. The 30-day pre-ballot window provides the industry with the opportunity to review comments prior to the ballot window which was open from April 28 to May 10.</p>				



**Consideration of Comments on Initial Ballot of Interpretation for Y-W Electric Association, Inc. Tri-State Generation & Transmission Association, Inc. of PRC-004-1, Requirements R1 and R3 and PRC-005-1, Requirements R1 and R2**

Voter	Entity	Segment	Vote	Comment
Chifong L. Thomas	Pacific Gas and Electric Company	1	Negative	The interpretation applies Requirements R1 and R3 in PRC-004-1, and to 1 and R2 in PRC-005-1. PG&E is concerned that, as written, the interpretation could introduce confusion for the generator Protection System. The interpretation states, "a Protection System for a radially connected transformer energized from the BES would be considered a transmission Protection System and subject to these standards only if the protection trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element." However, from NERC Glossary of Terms, the definition of BES includes "the electrical generation resources, transmission lines, interconnections with neighboring systems, and associated equipment, generally operated at voltages of 100 kV or higher". Therefore, if a generator protection trips the generator, the generator protection system can also be deemed a transmission Protection System because the generator is included in the BES. PG&E suggests that the interpretation be modified to state, "a Protection System for a radially connected transformer, which serves only Load and energized from the BES, would be considered a transmission Protection System and subject to these standards only if the protection trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element."
<p><b>Response:</b> In order to be considered a "transmission Protection System," all three aspects of the interpretation must be met: (1) installed for the purpose of detecting Faults on Transmission Elements, (2) the protected Element is identified as included in the BES, and (3) trips an interrupting device that interrupts current supplied directly from the BES. Generator protection installed to detect Faults on the generator or generator step-up transformer or to protect the generator against abnormal operating conditions do not meet the first aspect and would not be considered "transmission Protection Systems."</p>				
Robert Kondziolka	Salt River Project	1	Negative	The Interpretation does not answer the question asked. It bases its guidance on whether or not the transformer is a BES element. Determining whether the transformer is a BES element causes the confusion and inconsistencies we believe the Interpretation request wanted to resolve.
John T. Underhill	Salt River Project	3	Negative	
Glen Reeves	Salt River Project	5	Negative	
<p><b>Response:</b> The request for interpretation did not ask for clarification as to when a transformer is considered to be a BES element. Y-W Electric Association, Inc. (Y-WEA) and Tri-State Generation and Transmission Association, Inc. (Tri-State) requested an interpretation of the term "transmission Protection System" and specifically whether protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System and is subject to these standards. The drafting team believes the interpretation clearly answers both the general and specific aspects of this request. Providing clarification regarding the definition of a "BES element" is outside the scope of the interpretation.</p>				
Karl Bryan	U.S. Army Corps of Engineers	5	Negative	The interpretation does not clearly answer the question posed by the "request for interpretation". The intent of the Reliability Standards is to have one set of rules for the BES

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Voter	Entity	Segment	Vote	Comment
	Northwestern Division			and yet the Regional Entities appear to be carving out exceptions that are going beyond the intent of a reliable BES. In regards to this particular issue, either the transformer feeding a radial load is in or out of the BES and the disparity amongst the REs (RFirst and WECC) needs to be fixed.
<p><b>Response:</b> The request for interpretation did not ask for clarification as to when a transformer is considered to be a BES element. Y-W Electric Association, Inc. (Y-WEA) and Tri-State Generation and Transmission Association, Inc. (Tri-State) requested an interpretation of the term "transmission Protection System" and specifically whether protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System and is subject to these standards. The drafting team believes the interpretation clearly answers both the general and specific aspects of this request. Providing clarification regarding the definition of a "BES element" is outside the scope of the interpretation.</p>				
Anthony Jankowski	Wisconsin Energy Corp.	4	Negative	The interpretation is contrary to the NERC BES definition and the RFC BES definition.
<p><b>Response:</b> The drafting team cannot respond without clarification as to how the interpretation is contrary to the definition of BES. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms).</p>				
Gregory J Le Grave	Wisconsin Public Service Corp.	3	Negative	The interpretation needs to be further clarified to state: BES transformers are defined as: Generator step-up transformers that have high side voltage of 100Kv or greater. Or Transformers that have a high and low side voltages of 100Kv or greater.
Leonard Rentmeester	Wisconsin Public Service Corp.	5	Negative	
<p><b>Response:</b> The request for interpretation did not ask for a definition of what constitutes a BES transformer. Y-W Electric Association, Inc. (Y-WEA) and Tri-State Generation and Transmission Association, Inc. (Tri-State) requested an interpretation of the term "transmission Protection System" and specifically whether protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System and is subject to these standards. The drafting team believes the interpretation clearly answers both the general and specific aspects of this request. Providing clarification regarding the definition of "BES transformers" is outside the scope of the interpretation.</p>				
Paul B. Johnson	American Electric Power	1	Negative	The revised interpretation is a significant improvement and AEP appreciates the work by the drafting team. However, AEP feels the last sentence of the first paragraph of the

**Consideration of Comments on Initial Ballot of Interpretation for Y-W Electric Association, Inc. Tri-State Generation & Transmission Association, Inc. of PRC-004-1, Requirements R1 and R3 and PRC-005-1, Requirements R1 and R2**

Voter	Entity	Segment	Vote	Comment
Raj Rana	American Electric Power	3	Negative	interpretation could be improved from: "...trips an interrupting device that interrupts current supplied directly from the BES." to the following: "...trips an interrupting device (such as circuit breakers and circuit switchers) that interrupts current flowing through the networked BES." In addition, AEP feels the last sentence of the last paragraph of the interpretation could be improved from: "...trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element." to the following: "...trips an interrupting device (such as circuit breakers and circuit switchers) that interrupts current flowing through the networked BES and the transformer is a BES element."
<b>Response:</b> The drafting team appreciates this input, but believes that the existing phrase more precisely reflects our intent.				
Edward P. Cox	AEP Marketing	6	Negative	The revised interpretation is a significant improvement and AEP appreciates the work by the drafting team. However, AEP feels the last sentence of the first paragraph of the interpretation could be improved from: "...trips an interrupting device that interrupts current supplied directly from the BES." to the following: "...trips an interrupting device (such as circuit breakers and circuit switchers) that interrupts current flowing through the networked BES." In addition, AEP feels the last sentence of the last paragraph of the interpretation could be improved from: "...trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element." to the following: "...trips an interrupting device (such as circuit breakers and circuit switchers) that interrupts current flowing through the networked BES and the transformer is a BES element."
<b>Response:</b> The drafting team appreciates this input, but believes that the existing phrase more precisely reflects our intent.				
Richard Salgo	Sierra Pacific Power Co.	1	Negative	The Standards Drafting Team is commended for eliminating the elements of vagueness from the prior interpretation (use of "generally" and deferral to the Regional Entity for specific clarification). However, we disagree with a key concept of this version, that an applicable protection system would trip an interrupting device that interrupts current supplied directly from the BES. Focusing on the very purpose of a transmission protection system, the principle of inclusion of a protection system in the subject standards applicability should revolve around whether the protection system detects and acts to isolate faults on transmission elements from any source of energy, not whether it interrupts current supplied from the BES. In the 2nd paragraph, the interpretation reads "...only if the protection trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element". From this statement, it appears that the intent is for both conditions to be satisfied (interruption of current from the BES AND the transformer being a part of the BES). In that event, with the transformer presumed to be a part of the BES, there would be no

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Voter	Entity	Segment	Vote	Comment
				doubt as to the status of the associated protection system and no need for interpretation. However, the situation posed in the request is that of a radial transformer, and as such, the transformer itself would not likely be part of the BES at any rate, given the general radial exclusion in the present NERC definition of BES. As well, the radial nature of the transformer indicates that it may not even be considered to be a transmission element at all, but rather, distribution. We suggest a modification to the interpretation such that a Protection System be considered to be a transmission Protection System if it is installed for the purpose of detecting faults on transmission elements identified as being included in the BES, initiating action to clear the protected element from any source of energy.
<p><b>Response:</b> The modification to the interpretation proposed by the commenter is substantially the same as the first interpretation developed by the drafting team. Based on industry input through the Standard Development Process the drafting team has modified the interpretation and believes the present version of the interpretation appropriately addresses reliability of the Bulk Electric System by including the phrase “<u>and</u> trips an interrupting device that interrupts current supplied directly from the BES.”</p>				
Anthony Schacher	Salem Electric	3	Negative	The sytem protection devices have been installed to protect the substation transformers and distribution system downstream of the protection device, not the BES upstream. Therefore they should be exempt of the standard requirements
<p><b>Response:</b> In order to be considered a “Transmission Protection System,” all three aspects of the interpretation must be met: (1) installed for the purpose of detecting Faults on Transmission Elements, (2) the protected Element is identified as included in the BES, and (3) trips an interrupting device that interrupts current supplied directly from the BES. Per the interpretation if the substation transformers and distribution system downstream of the protection device referenced by the commenter are not BES elements, then the protection systems installed for detecting Faults on these elements are not “transmission Protection Systems.”</p>				
Thomas C. Mielnik	MidAmerican Energy Co.	3	Negative	We are concerned that the interpretation could be interpreted in a way that incorrectly leads to the conclusion that transformers with low side below 100 kV (and the transformer's sytem protection) are BES. Both windings need to be 100 kV and above to be considered to be BES.
<p><b>Response:</b> The existing definition of Bulk Electric System is not changed by this interpretation and providing clarification regarding the definition of a BES transformer is outside the scope of the interpretation. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms).</p>				
Claudiu Cadar	GDS Associates, Inc.	1	Negative	We do not support the interpretation of PRC-004-1 and PRC-005-1 requirements based on the following reasons: o Consistent with current reliability standards if the transmission line is radial in nature and

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Voter	Entity	Segment	Vote	Comment
				<p>no other network customer is impacted when the protective device operates, then no transmission Protection System exists.</p> <p>o NERC interpretation suggests certain situations where the transformer connected to the BES in a load serving radial configuration would be also considered a BES element. Would the secondary voltage of the transformer at 100 kV or above be determinant to consider the transformer a BES element? The definition of BES states that “Radial transmission facilities serving only load with one transmission source are generally not included in this definition.” In load serving radial configurations the only party impacted by a potential transformer failure would be the customer and not the BES, so the transformer cannot be considered a BES element.</p> <p>o If a protection system exists for any other reason than fault protection of the Bulk Electric System, most of the times it would be categorized as a Special Protection System (i.e. preventing overload of a transformer or line based upon a contingent situation, etc.). Transfer trip schemes and blocking schemes react to faulted conditions, however we do not believe that non-BES elements would be considered part of a protection system unless the RC or TOP indicates that the portion of the transmission system would be critical.</p> <p>o We suggest to revise the interpretation of the term “transmission Protection System” in a more clear and concise form.</p> <p>o We consider that not only the transmission Protection System is in need of subsequent clarifications and clearness, but also the definition of BES. This argument resides on FERC Order 693 and FERC Docket No. RC09-3-000 related to the definition of BES where the Commission explained that “Although we are accepting the NERC definition of bulk electric system and NERC’s registration process for now, the Commission remains concerned about the need to address the potential gaps in coverage of facilities. For example, some current regional definitions of bulk electric system exclude facilities below 230 kV and transmission lines that serve major load centers such as Washington, DC and New York City. The Commission intends to address this matter in a future proceeding.[...]”.</p> <p>o Although the above argument may be considered beyond the scope of current interpretation, we consider that due to the related nature of the mentioned definitions, NERC may need to pursue additional steps for clarification rather than a simple term interpretation. The drafting team may consider proposing the addition of a new term such as “Transmission Protection System”, or to modify the existing “Protection System” definition and “Bulk Electric System” by case if found appropriate.</p>

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Voter	Entity	Segment	Vote	Comment
<p><b>Response:</b> The drafting team was not asked to provide an interpretation of when transformers or other elements would be considered BES elements. As such, discussion of whether radial transformers can be BES elements and whether winding voltage has a bearing on such determinations are outside the scope of this interpretation.</p>				
<p>The interpretation purposely makes reference to “to any Protection System that is installed for the purpose of detecting Faults on Transmission Elements” to exclude Special Protection Systems. The intent of the commenter’s reference to non-BES elements being considered part of a Protection System is not clear given the NERC Glossary definitions of Element (Any electrical device with terminals that may be connected to other electrical devices such as a generator, transformer, circuit breaker, bus section, or transmission line. An element may be comprised of one or more components.) and Protection System (Protective relays, associated communication systems, voltage and current sensing devices, station batteries and DC control circuitry.) are mutually exclusive.</p>				
<p>The drafting team acknowledges there are existing dockets that reference the definition of the BES. As contemplated by the commenter, however, the drafting team agrees that providing clarification regarding the definition of a “BES Element” is outside the scope of the interpretation. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms) and also will be applicable if a NERC-wide methodology for determining BES facilities is developed.</p>				
Timothy VanBlaricom	California ISO	2	Negative	We feel that a formal definition of 'transmission protection system' should be developed so that all RROs interpret the meaning in the same way.
<p><b>Response:</b> Development of a formal definition is outside the scope of the request for interpretation. If the commenter desires a formal definition a Standard Authorization Request (SAR) may be submitted requesting development of a formal definition.</p>				
Gregory L Pieper	Xcel Energy, Inc.	1	Negative	<p>Xcel Energy believes that this interpretation uses language that depends upon definition of BES elements (in this case transformers). How to determine if a transformer is classified as BES has not been clearly established (i.e. it is not clear as to if classification is based on high side or low side voltage). We believe it needs to be established how these boundary components and supporting systems (e.g. protection system) are classified in order to form a basis for the interpretation.</p>
Michael Ibold	Xcel Energy, Inc.	3	Negative	
Liam Noailles	Xcel Energy, Inc.	5	Negative	
David F. Lemmons	Xcel Energy, Inc.	6	Negative	
<p><b>Response:</b> Providing clarification regarding the definition of a “BES Element” is outside the scope of the interpretation. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms).</p>				

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Voter	Entity	Segment	Vote	Comment
John J. Moraski	Baltimore Gas & Electric Company	1	Affirmative	BGE is comfortable with the interpretation as written. Specifically, the scope of inclusion is now limited as below: ...a Transmission Protection System and subject to these standards only if the protection trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element The transformer in the class of substation we are concerned with is not a BES element.
<b>Response:</b> Thank you for your support.				
Russell A Noble	Cowlitz County PUD	3	Affirmative	Is the definition of a BES transformer understood? My understanding is both primary and secondary are at or above 100 kV. Also, it must also be noted that some transmission side current interrupters (circuit switchers) can't clear a full transmission fault. They are there to protect the transformer from high impedance internal transformer faults. Should a transmission full available current fault occur, the upstream BES breaker(s) must clear the fault.
<b>Response:</b> Thank you for your support. However, please note that providing clarification regarding the definition of a "BES transformer" is outside the scope of the interpretation. The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms).				
Kevin Querry	FirstEnergy Solutions	3	Affirmative	No Comments
<b>Response:</b> Thank you for your support.				
Frank F. Afranji	Portland General Electric Co.	1	Affirmative	PGE agrees with the interpretation given by the System Protection and Controls Subcommittee. The protection system for a radially connected transformer should be considered a transmission Protective System since it interrupts current from the BES. If the transformer breaker was to misoperate, it could cause delayed tripping from the remaining transmission line breakers ultimately effectin the BES.
<b>Response:</b> Thank you for your support. Please note that as stated in the interpretation, the commenter's example would be considered a "Transmission Protection System" only if the protection trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element.				
Alan Gale	City of Tallahassee	5	Affirmative	TAL would like to thank the Drafting Team for their efforts. This is one example of how posting interpretations for industry comment prior to voting could shorten the overall process

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Voter	Entity	Segment	Vote	Comment
				and lead to consensus on the first vote.
<b>Response:</b> Thank you for your support.				
Kim Warren	Independent Electricity System Operator	2	Affirmative	The IESO appreciates the drafting team's thoughtful consideration of the points we had raised in the previous two ballots. We accept that there are imitations to the current interpretation process and therefore respectfully suggest that the drafting team include in the Reliability Standards Issues Database for future consideration, the issue of how uncleared faults on non-BES elements that may impact the BES, should be addressed in the reliability standards. We also wish to point out that this issue is fully addressed in the NPCC region by virtue of the performance-based methodology applied for defining the BES (BPS).
<b>Response:</b> Thank you for your support.				
Steve Alexanderson	Central Lincoln PUD	3	Affirmative	The new interpretation is an improvement over the last. We are still are baffled why the team did not include the NERC definition of "transmission" to show they are not creating a brand new definition. Perhaps comments included with affirmative ballots receive less attention than those with negative ballots. If so, this one may go unnoticed as well.
<b>Response:</b> Thank you for your support. The drafting team believes that simply linking the NERC Glossary defined terms "Transmission" and "Protection System" would not provide the level of clarity required to address this request for interpretation.				
James A Ziebarth	Y-W Electric Association, Inc.	4	Affirmative	Y-WEA appreciates the clarity that the drafting team put in this interpretation. This interpretation should bring about much more uniform understanding and enforcement of standards PRC-004-1 and PRC-005-1.
<b>Response:</b> Thank you for your support.				
Amir Y Hammad	Constellation Power Source Generation, Inc.	5	Abstain	Although this interpretation is reasonable when viewed between transmission and distribution elements, Constellation is concerned with this interpretation potentially being used for generation facilities connected to the BES. As an example, take a 10 MW generation facility connected at 115kV . This facility would not be part of the BES per the current definitions. However, as written, this interpretation would conclude that any protection of the step up transformer makes it part of the BES, even though the facility does not meet the BES criteria. Although this is not the intent of the interpretation, it is a potential consequence if applied



**Consideration of Comments on Initial Ballot of Interpretation for Y-W Electric Association, Inc. Tri-State Generation & Transmission Association, Inc. of PRC-004-1, Requirements R1 and R3 and PRC-005-1, Requirements R1 and R2**

Voter	Entity	Segment	Vote	Comment
				incorrectly.
<p><b>Response:</b> The drafting team agrees this example would be an incorrect application of the interpretation.</p>				
Chuck B Manning	Electric Reliability Council of Texas, Inc.	2	Abstain	the interpretation does NOT clearly answer the question
<p><b>Response:</b> Y-W Electric Association, Inc. (Y-WEA) and Tri-State Generation and Transmission Association, Inc. (Tri-State) requested an interpretation of the term "transmission Protection System" and specifically whether protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System and is subject to these standards. The drafting team believes the interpretation clearly answers both the general and specific aspects of this request.</p>				
Kent Saathoff	Electric Reliability Council of Texas, Inc.	10	Abstain	The question being asked is if the transformer protection system of a radially connected transformer, energized by the BES, is considered a BES transmission Protection System. The interpretation does not clearly state whether or not the transformer is part of the BES and further implies it may be some times but not all times, depending on how the transformer is cleared (separated from the transmission by the breaker vs. disconnecting the transformer and including clearing a section of transmission).
<p><b>Response:</b> The drafting team believes that references to the Bulk Electric System in the interpretation are clear and valid in the context of the existing NERC definition of the Bulk Electric System (as defined by the Regional Reliability Organization per the NERC Glossary of terms).</p>				



NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Standards Announcement

### Recirculation Ballot Open

November 19-December 3, 2010

**Available at:** <https://standards.nerc.net/CurrentBallots.aspx>

### **Project 2009-17: Interpretation of PRC-004-1 and PRC-005-1 for Y-W Electric and Tri-State**

A recirculation ballot period is open through **8 p.m. Eastern on December 3, 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>

The initial ballot pool for this project was formed some time ago. A list of ballot pool members can be found in the ballot results, posted at [http://www.nerc.com/docs/standards/sar/In-ballot\\_Results\\_2009-17\\_Rev2\\_2010May11.pdf](http://www.nerc.com/docs/standards/sar/In-ballot_Results_2009-17_Rev2_2010May11.pdf).

If a personnel change affecting a member of the original ballot pool has occurred that necessitates a substitution, please email Monica Benson at [monica.benson@nerc.net](mailto:monica.benson@nerc.net).

#### **Ballot Process**

The Standards Committee encourages all members of the ballot pool to review the consideration of comments submitted during the ballot window that ended May 10, 2010, along with the draft interpretation ([http://www.nerc.com/filez/standards/Project2009-17\\_Interpretation\\_PRC-004\\_PRC-005\\_Y-W\\_TriStateG&T.html](http://www.nerc.com/filez/standards/Project2009-17_Interpretation_PRC-004_PRC-005_Y-W_TriStateG&T.html)) for the April 28 – May 10, 2010 ballot. The drafting team made no changes to the draft interpretation after that ballot, so the most recently balloted draft interpretation posted on the project page is the subject of this recirculation ballot.

In the recirculation ballot, votes are counted by exception only. If a ballot pool member does not submit a revision to that member's original vote, the vote remains the same as in the first ballot. Members of the ballot pool may:

- Reconsider and change their vote from the first ballot.
- Vote in the second ballot even if they did not vote on the first ballot.
- Take no action if they do not want to change their original vote.

#### **Next Steps**

Voting results will be posted and announced after the ballot window closes. If approved, the interpretation will be submitted to the Board of Trustees.

## **Project Background**

On March 25, 2009, Y-W Electric Association, Inc. (Y-WEA) and Tri-State Generation and Transmission Association, Inc. (Tri-State) requested an interpretation of the term "transmission Protection System" as used in requirements R1 and R3 of PRC-004-1 and requirements R1 and R2 of PRC-005-1. Specifically, the interpretation seeks to clarify whether protection for a radically-connected transformer protection system energized from the BES is considered a transmission Protection System and is subject to these standards.

## **Standards Process**

The [Standard Processes Manual](#) 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 Monica Benson,  
Standards Process Administrator, at [monica.benson@nerc.net](mailto:monica.benson@nerc.net) or at 609.452.8060.*

North American Electric Reliability Corporation  
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Princeton, NJ 08540  
609.452.8060 | [www.nerc.com](http://www.nerc.com)

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## Ballot Results

<b>Ballot Name:</b>	Project 2009-17 - Interpretation Y-W Electric and Tri-State (Revision 2)_rc
<b>Ballot Period:</b>	11/19/2010 - 12/3/2010
<b>Ballot Type:</b>	recirculation
<b>Total # Votes:</b>	245
<b>Total Ballot Pool:</b>	279
<b>Quorum:</b>	<b>87.81 % The Quorum has been reached</b>
<b>Weighted Segment Vote:</b>	82.41 %
<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.	82	1	53	0.746	18	0.254	3	8
2 - Segment 2.	9	0.6	5	0.5	1	0.1	1	2
3 - Segment 3.	69	1	47	0.758	15	0.242	3	4
4 - Segment 4.	19	1	13	0.929	1	0.071	3	2
5 - Segment 5.	49	1	30	0.811	7	0.189	1	11
6 - Segment 6.	34	1	21	0.778	6	0.222	3	4
7 - Segment 7.	0	0	0	0	0	0	0	0
8 - Segment 8.	7	0.6	6	0.6	0	0	0	1
9 - Segment 9.	2	0.1	1	0.1	0	0	1	0
10 - Segment 10.	8	0.4	3	0.3	1	0.1	2	2
<b>Totals</b>	<b>279</b>	<b>6.7</b>	<b>179</b>	<b>5.522</b>	<b>49</b>	<b>1.178</b>	<b>17</b>	<b>34</b>

## Individual Ballot Pool Results

Segment	Organization	Member	Ballot	Comments
1	Ameren Services	Kirit S. Shah	Affirmative	
1	American Electric Power	Paul B. Johnson	Negative	<a href="#">View</a>
1	American Transmission Company, LLC	Jason Shaver	Affirmative	
1	Associated Electric Cooperative, Inc.	John Bussman	Affirmative	
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	Negative	<a href="#">View</a>
1	Bonneville Power Administration	Donald S. Watkins	Affirmative	
1	CenterPoint Energy	Paul Rocha	Affirmative	
1	Central Maine Power Company	Brian Conroy		
1	City of Vero Beach	Randall McCamish	Affirmative	
1	City Utilities of Springfield, Missouri	Jeff Knottek	Affirmative	
1	Clark Public Utilities	Jack Stamper	Affirmative	
1	Cleco Power LLC	Danny McDaniel	Negative	<a href="#">View</a>
1	Colorado Springs Utilities	Paul Morland	Negative	<a href="#">View</a>
1	Commonwealth Edison Co.	Daniel Brotzman	Affirmative	
1	Consolidated Edison Co. of New York	Christopher L de Graffenried	Affirmative	
1	Deseret Power	James Tucker	Affirmative	
1	Dominion Virginia Power	John K Loftis	Affirmative	
1	Duke Energy Carolina	Douglas E. Hils	Affirmative	
1	E.ON U.S.	Larry Monday	Negative	
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	Negative	<a href="#">View</a>
1	GDS Associates, Inc.	Claudiu Cadar	Negative	<a href="#">View</a>
1	Great River Energy	Gordon Pietsch	Affirmative	
1	Hoosier Energy Rural Electric Cooperative, Inc.	Robert Solomon	Affirmative	
1	Hydro One Networks, Inc.	Ajay Garg	Affirmative	
1	Idaho Power Company	Ronald D. Schellberg	Affirmative	
1	ITC Transmission	Elizabeth Howell	Affirmative	
1	Kansas City Power & Light Co.	Michael Gammon	Affirmative	<a href="#">View</a>
1	Keys Energy Services	Stan T. Rzad		
1	Lake Worth Utilities	Walt Gill	Affirmative	
1	Lakeland Electric	Larry E Watt	Negative	<a href="#">View</a>
1	Lee County Electric Cooperative	John W Delucca	Affirmative	
1	Lincoln Electric System	Doug Bantam		
1	Long Island Power Authority	Jonathan Appelbaum	Affirmative	
1	Manitoba Hydro	Joe D Petaski	Affirmative	
1	MEAG Power	Danny Dees	Affirmative	
1	MidAmerican Energy Co.	Terry Harbour	Affirmative	
1	Minnesota Power, Inc.	Randi Woodward	Negative	<a href="#">View</a>
1	Montana-Dakota Utilities Co.	Henry Ford	Affirmative	
1	National Grid	Saurabh Saksena		
1	New York Power Authority	Arnold J. Schuff	Affirmative	
1	Northeast Utilities	David H. Boguslawski	Affirmative	
1	Northern Indiana Public Service Co.	Kevin M Largura	Affirmative	
1	Ohio Valley Electric Corp.	Robert Matthey	Negative	
1	Oklahoma Gas and Electric Co.	Marvin E VanBebber	Abstain	
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	Pacific Gas and Electric Company	Chifong L. Thomas	Negative	<a href="#">View</a>
1	PacifiCorp	Mark Sampson	Negative	
1	PECO Energy	Ronald Schloendorn	Affirmative	
1	Platte River Power Authority	John C. Collins		
1	Portland General Electric Co.	Frank F. Afranji	Affirmative	<a href="#">View</a>
1	Potomac Electric Power Co.	Richard J Kafka	Affirmative	
1	PowerSouth Energy Cooperative	Larry D. Avery	Affirmative	
1	PPL Electric Utilities Corp.	Brenda L Truhe	Affirmative	
1	Progress Energy Carolinas	Sammy Roberts		
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	Negative	<a href="#">View</a>
1	Santee Cooper	Terry L. Blackwell	Affirmative	
1	SCE&G	Henry Delk, Jr.	Affirmative	
1	Seattle City Light	Pawel Krupa		
1	Sierra Pacific Power Co.	Rich Salgo	Negative	<a href="#">View</a>
1	South Texas Electric Cooperative	Richard McLeon	Abstain	

1	Southern California Edison Co.	Dana Cabbell	Negative	
1	Southern Company Services, Inc.	Horace Stephen Williamson	Negative	<a href="#">View</a>
1	Southwest Transmission Cooperative, Inc.	James L. Jones	Affirmative	
1	Southwestern Power Administration	Gary W Cox	Abstain	
1	Tri-State G & T Association, Inc.	Keith V. Carman	Affirmative	<a href="#">View</a>
1	Tucson Electric Power Co.	John Tolo	Negative	
1	Westar Energy	Allen Klassen	Affirmative	
1	Western Area Power Administration	Brandy A Dunn	Affirmative	
1	Xcel Energy, Inc.	Gregory L Pieper	Negative	<a href="#">View</a>
2	Alberta Electric System Operator	Jason L. Murray	Affirmative	
2	California ISO	Timothy VanBlaricom	Negative	<a href="#">View</a>
2	Electric Reliability Council of Texas, Inc.	Chuck B Manning	Abstain	<a href="#">View</a>
2	Independent Electricity System Operator	Kim Warren	Affirmative	<a href="#">View</a>
2	ISO New England, Inc.	Kathleen Goodman	Affirmative	
2	Midwest ISO, Inc.	Jason L Marshall	Affirmative	
2	New Brunswick System Operator	Alden Briggs		
2	PJM Interconnection, L.L.C.	Tom Bowe	Affirmative	
2	Southwest Power Pool	Charles H Yeung		
3	Alabama Power Company	Richard J. Mandes	Negative	<a href="#">View</a>
3	Ameren Services	Mark Peters	Affirmative	
3	American Electric Power	Raj Rana	Negative	<a href="#">View</a>
3	APS	Steven Norris	Negative	
3	Atlantic City Electric Company	James V. Petrella	Affirmative	
3	Basin Electric Power Cooperative	Daniel Klempel	Abstain	
3	BC Hydro and Power Authority	Pat G. Harrington	Affirmative	
3	Blue Ridge Power Agency	Duane S. Dahlquist	Affirmative	
3	Bonneville Power Administration	Rebecca Berdahl	Affirmative	
3	Central Lincoln PUD	Steve Alexanderson	Affirmative	<a href="#">View</a>
3	City of Bartow, Florida	Matt Culverhouse	Abstain	
3	City of Clewiston	Lynne Mila	Affirmative	
3	City of Farmington	Linda R. Jacobson	Affirmative	
3	City of Green Cove Springs	Gregg R Griffin	Affirmative	
3	City of Leesburg	Phil Janik	Affirmative	
3	Cleco Utility Group	Bryan Y Harper	Negative	<a href="#">View</a>
3	ComEd	Bruce Krawczyk	Affirmative	
3	Consolidated Edison Co. of New York	Peter T Yost	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 Services	Michael F Gildea	Affirmative	
3	Duke Energy Carolina	Henry Ernst-Jr	Affirmative	
3	East Kentucky Power Coop.	Sally Witt	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	Affirmative	
3	Florida Power Corporation	Lee Schuster	Affirmative	
3	Georgia Power Company	Anthony L Wilson	Negative	<a href="#">View</a>
3	Georgia System Operations Corporation	R Scott S. Barfield-McGinnis	Abstain	
3	Great River Energy	Sam Kokkinen	Affirmative	
3	Gulf Power Company	Gwen S Frazier	Negative	<a href="#">View</a>
3	Hydro One Networks, Inc.	Michael D. Penstone	Affirmative	
3	JEA	Garry Baker		
3	Kansas City Power & Light Co.	Charles Locke	Affirmative	<a href="#">View</a>
3	Kissimmee Utility Authority	Gregory David Woessner	Affirmative	
3	Lakeland Electric	Mace Hunter	Affirmative	
3	Lincoln Electric System	Bruce Merrill	Negative	<a href="#">View</a>
3	Louisville Gas and Electric Co.	Charles A. Freibert	Negative	
3	Manitoba Hydro	Greg C. Parent	Affirmative	
3	MidAmerican Energy Co.	Thomas C. Mielnik	Negative	<a href="#">View</a>
3	Mississippi Power	Don Horsley	Negative	<a href="#">View</a>
3	New York Power Authority	Marilyn Brown	Affirmative	
3	Niagara Mohawk (National Grid Company)	Michael Schiavone		
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	OTP Wholesale Marketing	Bradley Tollerson	Affirmative	

3	PacifiCorp	John Apperson	Affirmative	
3	PECO Energy an Exelon Co.	Vincent J. Catania	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	Salem Electric	Anthony Schacher	Negative	<a href="#">View</a>
3	Salt River Project	John T. Underhill	Negative	<a href="#">View</a>
3	Santee Cooper	Zack Dusenbury	Affirmative	
3	Seattle City Light	Dana Wheelock		
3	South Carolina Electric & Gas Co.	Hubert C. Young	Affirmative	
3	Southern California Edison Co.	David Schiada	Negative	
3	Tampa Electric Co.	Ronald L Donahey		
3	Tri-State G & T Association, Inc.	Janelle Marriott	Affirmative	
3	United Power Inc	Dean Hubbuck	Affirmative	
3	Wisconsin Electric Power Marketing	James R. Keller	Negative	<a href="#">View</a>
3	Wisconsin Public Service Corp.	Gregory J Le Grave	Affirmative	<a href="#">View</a>
3	Xcel Energy, Inc.	Michael Ibold	Negative	<a href="#">View</a>
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	Abstain	
4	Illinois Municipal Electric Agency	Bob C. Thomas	Affirmative	
4	Integrus Energy Group, Inc.	Christopher Plante	Affirmative	
4	LaGen	Richard Comeaux	Abstain	
4	Ohio Edison Company	Douglas Hohlbaugh	Affirmative	
4	Sacramento Municipal Utility District	Mike Ramirez	Affirmative	
4	Seattle City Light	Hao Li		
4	Seminole Electric Cooperative, Inc.	Steven R Wallace	Affirmative	
4	South Mississippi Electric Power Association	Steve McElhaney		
4	Tacoma Public Utilities	Keith Morissette	Abstain	
4	Wisconsin Energy Corp.	Anthony Jankowski	Negative	<a href="#">View</a>
4	Y-W Electric Association, Inc.	James A Ziebarth	Affirmative	<a href="#">View</a>
5	AEP Service Corp.	Brock Ondayko		
5	Amerenue	Sam Dwyer	Affirmative	
5	Avista Corp.	Edward F. Groce	Affirmative	
5	Black Hills Corp	George Tatar	Negative	<a href="#">View</a>
5	Bonneville Power Administration	Francis J. Halpin	Affirmative	
5	City of Grand Island	Jeff Mead	Negative	
5	City of Tallahassee	Alan Gale	Affirmative	
5	Cleco Power LLC	Grant Bryant		
5	Conectiv Energy Supply, Inc.	Kara Dundas	Affirmative	
5	Consolidated Edison Co. of New York	Wilket (Jack) Ng	Affirmative	
5	Constellation Power Source Generation, Inc.	Amir Y Hammad	Abstain	<a href="#">View</a>
5	Consumers Energy	James B Lewis	Affirmative	
5	Detroit Edison Company	Christy Wicke	Affirmative	
5	Dominion Resources, Inc.	Mike Garton	Affirmative	
5	Duke Energy	Robert Smith	Affirmative	
5	East Kentucky Power Coop.	Stephen Ricker	Affirmative	
5	Edison Mission Energy	Ellen Oswald		
5	Entergy Corporation	Stanley M Jaskot	Affirmative	
5	Exelon Nuclear	Michael Korchynsky	Affirmative	
5	FirstEnergy Solutions	Kenneth Dresner		
5	Florida Municipal Power Agency	David Schumann	Affirmative	
5	Great River Energy	Cynthia E Sulzer	Affirmative	
5	JEA	Donald Gilbert	Affirmative	
5	Kansas City Power & Light Co.	Scott Heidtbrink	Affirmative	<a href="#">View</a>
5	Kissimmee Utility Authority	Mike Blough	Affirmative	
5	Liberty Electric Power LLC	Daniel Duff		
5	Lincoln Electric System	Dennis Florom		

5	Louisville Gas and Electric Co.	Charlie Martin		
5	MidAmerican Energy Co.	Christopher Schneider	Negative	
5	New York Power Authority	Gerald Mannarino	Affirmative	
5	Northern Indiana Public Service Co.	Michael K Wilkerson	Affirmative	
5	Orlando Utilities Commission	Richard Kinas		
5	PacifiCorp	Sandra L. Shaffer	Affirmative	
5	Portland General Electric Co.	Gary L Tingley		
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	Negative	<a href="#">View</a>
5	Seattle City Light	Michael J. Haynes	Affirmative	
5	Seminole Electric Cooperative, Inc.	Brenda K. Atkins	Affirmative	
5	South Carolina Electric & Gas Co.	Richard Jones	Affirmative	
5	Tampa Electric Co.	RJames Rocha		
5	U.S. Army Corps of Engineers Northwestern Division	Karl Bryan	Negative	<a href="#">View</a>
5	U.S. Bureau of Reclamation	Martin Bauer P.E.		
5	Wisconsin Electric Power Co.	Linda Horn	Negative	<a href="#">View</a>
5	Wisconsin Public Service Corp.	Leonard Rentmeester	Affirmative	
5	Xcel Energy, Inc.	Liam Noailles	Negative	<a href="#">View</a>
6	AEP Marketing	Edward P. Cox	Negative	<a href="#">View</a>
6	Black Hills Corp	Tyson Taylor		
6	Bonneville Power Administration	Brenda S. Anderson	Affirmative	
6	Cleco Power LLC	Matthew D Cripps	Negative	<a href="#">View</a>
6	Consolidated Edison Co. of New York	Nickesha P Carrol	Affirmative	
6	Constellation Energy Commodities Group	Brenda Powell	Abstain	
6	Dominion Resources, Inc.	Louis S Slade	Affirmative	
6	Duke Energy Carolina	Walter Yeager		
6	Entergy Services, Inc.	Terri F Benoit	Affirmative	
6	Exelon Power Team	Pulin Shah		
6	FirstEnergy Solutions	Mark S Travaglianti	Affirmative	
6	Florida Municipal Power Agency	Richard L. Montgomery	Affirmative	
6	Florida Municipal Power Pool	Thomas E Washburn	Abstain	
6	Florida Power & Light Co.	Silvia P Mitchell	Affirmative	
6	Great River Energy	Donna Stephenson	Affirmative	
6	Kansas City Power & Light Co.	Thomas Saitta	Affirmative	
6	Lakeland Electric	Paul Shipps	Affirmative	
6	Lincoln Electric System	Eric Ruskamp	Negative	<a href="#">View</a>
6	Louisville Gas and Electric Co.	Daryn Barker	Negative	
6	Manitoba Hydro	Daniel Prowse	Affirmative	
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	Abstain	
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	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	Negative	
6	Western Area Power Administration - UGP Marketing	John Stonebarger	Affirmative	
6	Xcel Energy, Inc.	David F. Lemmons	Negative	<a href="#">View</a>
8		Roger C Zaklukiewicz	Affirmative	
8		James A Maenner	Affirmative	
8	JDRJC Associates	Jim D. Cyrulewski	Affirmative	
8	Power Energy Group LLC	Peggy Abbadini	Affirmative	
8	Shafer, Kline, & Warren Inc. (SKW)	Michael J Bequette, P.E.	Affirmative	
8	Utility Services, Inc.	Brian Evans-Mongeon		
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	Abstain	





10	Electric Reliability Council of Texas, Inc.	Kent Saathoff	<a href="#">Abstain</a>	<a href="#">View</a>
10	Florida Reliability Coordinating Council	Linda Campbell	<a href="#">Affirmative</a>	
10	Midwest Reliability Organization	Dan R. Schoenecker	<a href="#">Negative</a>	<a href="#">View</a>
10	New York State Reliability Council	Alan Adamson	<a href="#">Affirmative</a>	
10	Northeast Power Coordinating Council, Inc.	Guy V. Zito	<a href="#">Affirmative</a>	
10	ReliabilityFirst Corporation	Jacque Smith	<a href="#">Abstain</a>	
10	SERC Reliability Corporation	Carter B Edge		
10	Western Electricity Coordinating Council	Louise McCarren		

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NORTH AMERICAN ELECTRIC  
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## Standards Announcement Recirculation Ballot Results

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

### **Ballot Results for Project 2009-17: Interpretation of PRC-004-1 and PRC-005-1 for Y-W Electric and Tri-State (Revision 2)**

The recirculation ballot window to vote on a proposed interpretation of PRC-004-1 — Analysis and Mitigation of Transmission and Generation Protection System Misoperations and PRC-005-1 — Transmission and Generation Protection System Maintenance and Testing closed on December 3, 2010. The ballot pool approved the interpretation. Voting statistics are listed below, and the [Ballot Results](#) Web page provides a link to the detailed results.

Quorum: 87.81%

Approval: 82.41%

### **Background**

On March 25, 2009, Y-W Electric Association, Inc. (Y-WEA) and Tri-State Generation and Transmission Association, Inc. (Tri-State) requested an interpretation of the term "transmission Protection System" as used in requirements R1 and R3 of PRC-004-1 and requirements R1 and R2 of PRC-005-1. Specifically, the interpretation seeks to clarify whether protection for a radically-connected transformer protection system energized from the BES is considered a transmission Protection System and is subject to these standards. The approved interpretation and a full record of the development of the interpretation are available on the [project page](#).

### **Next Steps**

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

### **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 non-responses.

### **Standards Process**

The [Standard Processes Manual](#) 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 Monica Benson,  
Standards Process Administrator, at [monica.benson@nerc.net](mailto:monica.benson@nerc.net) or at 609.452.8060.*

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**Consideration of Comments on Initial Ballot — Interpretation of PRC-004-1 and PRC-005-1 for Y-W Electric and Tri-State (Project 2009-17)**

**Date of Initial Ballot: November 19, 2010 – December 3, 2010**

**Summary Consideration:**

If you feel that the drafting team overlooked your comments, please let us know immediately. Our goal is to give every comment serious consideration in this process. If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Herb Schrayshuen, at 609-452-8060 or at [herb.schrayshuen@nerc.net](mailto:herb.schrayshuen@nerc.net). In addition, there is a NERC Reliability Standards Appeals Process.<sup>1</sup>

Voter	Entity	Segment	Vote	Comment
Paul B. Johnson	American Electric Power	1	Negative	The revised interpretation is a significant improvement and AEP appreciates the work by the drafting team. However, AEP feels the last sentence of the first paragraph of the interpretation could be improved from: "...trips an interrupting device that interrupts current supplied directly from the BES." to the following: "...trips an interrupting device (such as circuit breakers and circuit switchers) that interrupts current flowing through the networked BES." In addition, AEP feels the last sentence of the last paragraph of the interpretation could be improved from: "...trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element." to the following: "...trips an interrupting device (such as circuit breakers and circuit switchers) that interrupts current flowing through the networked BES and the transformer is a BES element."
John J. Moraski	Baltimore Gas & Electric Company	1	Affirmative	BGE is comfortable with the interpretation as written.
Eric Egge	Black Hills Corp	1	Negative	Black Hills Power respectfully votes against the interpretation because of the qualifiers 'that interrupts current supplied directly from the BES' and 'the transformer is a BES element'. These qualifiers force the issue of whether a transformer fed from a non-BES line can be considered a BES transformer. This issue arises because of disagreement of whether a radial transmission line tapped off the BES serving only load is part of the BES, and that question arises from different interpretation of what constitutes 'one' source or 'two' sources. Although the interpretation must be limited in scope to the standards affected, the original interpretation request from the submitting entities asks whether 'protection for a radially-connected transformer protection system energized from the BES is considered a transmission Protection System'. Because the interpretation as written

<sup>1</sup> The appeals process is in the Reliability Standards Development Procedure: [http://www.nerc.com/files/RSDP\\_V6\\_1\\_12Mar07.pdf](http://www.nerc.com/files/RSDP_V6_1_12Mar07.pdf).

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				does not allow the entities' question to be consistently and reliably answered, Black Hills Power is voting "No".
Danny McDaniel	Cleco Power LLC	1	Negative	Cleco respectively disagrees with the interpretation by the drafting team and the determination of a BES element should be clear and consistent across the continent. The definition of a BES element brings with it confusion when terms such as "generally" are used. In the example provided, one of the determinations should not be that the device interrupts current supplied directly from the BES but that the device interrupts current flowing between multiple BES substations or between a BES generator and a BES switchyard.
Paul Morland	Colorado Springs Utilities	1	Negative	The interpretation gives no clarity to the associated issue. The interpretation refers back to the "Bulk Electric System", which as yet has not been defined, and as such gives no clear indication on what an entity is to understand from this. Also, if a Distribution Transformer (serving radial load), is protected by fuses, a lower quality protection system, and not by transformer differential relay, with over current backup, it would not be required to comply. This seems backwards to the goal of improving the quality of the "Bulk Electric System", and will in the end encourage a lowering of the quality of the bulk electric system.
Dennis Minton	Florida Keys Electric Cooperative Assoc.	1	Negative	Radials should be exempted, provided there is no adverse material impact to the BES.
Claudiu Cadar	GDS Associates, Inc.	1	Negative	We do not support the interpretation of PRC-004-1 and PRC-005-1 requirements based on the following reasons: <ul style="list-style-type: none"> <li>o Consistent with current reliability standards if the transmission line is radial in nature and no other network customer is impacted when the protective device operates, then no transmission Protection System exists.</li> <li>o NERC interpretation suggests certain situations where the transformer connected to the BES in a load serving radial configuration would be also considered a BES element. Would the secondary voltage of the transformer at 100 kV or above be determinant to consider the transformer a BES element? The definition of BES states that "Radial transmission facilities serving only load with one transmission source are generally not included in this definition." In load serving radial configurations the only party impacted by a potential transformer failure would be the customer and not the BES, so the transformer cannot be considered a BES element.</li> <li>o If a protection system exists for any other reason than fault protection of the Bulk Electric System, most of the times it would be categorized as a Special Protection System (i.e. preventing overload of a transformer or line based upon a contingent situation, etc.). Transfer trip schemes and blocking schemes react to faulted conditions, however we do not believe that</li> </ul>

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				<p>non-BES elements would be considered part of a protection system unless the RC or TOP indicates that the portion of the transmission system would be critical. o We suggest to revise the interpretation of the term "transmission Protection System" in a more clear and concise form. o We consider that not only the transmission Protection System is in need of subsequent clarifications and clearness, but also the definition of BES. This argument resides on FERC Order 693 and FERC Docket No. RC09-3-000 related to the definition of BES where the Commission explained that "Although we are accepting the NERC definition of bulk electric system and NERC's registration process for now, the Commission remains concerned about the need to address the potential gaps in coverage of facilities. For example, some current regional definitions of bulk electric system exclude facilities below 230 kV and transmission lines that serve major load centers such as Washington, DC and New York City. The Commission intends to address this matter in a future proceeding.[...]". o Although the above argument may be considered beyond the scope of current interpretation, we consider that due to the related nature of the mentioned definitions, NERC may need to pursue additional steps for clarification rather than a simple term interpretation. The drafting team may consider proposing the addition of a new term such as "Transmission Protection System", or to modify the existing "Protection System" definition and "Bulk Electric System" by case if found appropriate.</p>
Michael Gammon	Kansas City Power & Light Co.	1	Affirmative	<p>Recommend the first paragraph in the interpretation make it clear this does not include transformer protection systems for transformers with secondary winding voltages less than 100kv. Please consider the following language. The request for interpretation of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2 focuses on the applicability of the term "transmission Protection System." The NERC Glossary of Terms Used in Reliability Standards contains a definition of "Protection System" but does not contain a definition of transmission Protection System. In these two standards, use of the phrase transmission Protection System indicates that the requirements using this phrase are is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES and for transformers with secondary windings of 100kv or higher.</p>
Larry E Watt	Lakeland Electric	1	Negative	<p>a protection system installed on that non-BES transformer could be determined to be a "transmission Protection System" with this interpretation. This contradicts the example.</p>

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Randi Woodward	Minnesota Power, Inc.	1	Negative	Further clarification is required regarding the definition of a "BES Element" (e.g., What is a BES transformer?). We propose the following definitions: - Non GSU transformers must have all windings (excluding tertiary windings) rated at 100kV and above in order to be classified as a BES transformer. - GSU transformers must have a primary winding rating at 100kV and above in order to be classified as a BES transformer.
Chifong L. Thomas	Pacific Gas and Electric Company	1	Negative	The interpretation applies Requirements R1 and R3 in PRC-004-1, and to 1 and R2 in PRC-005-1. PG&E is concerned that, as written, the interpretation could introduce confusion for the generator Protection System. The interpretation states, "a Protection System for a radially connected transformer energized from the BES would be considered a transmission Protection System and subject to these standards only if the protection trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element." However, from NERC Glossary of Terms, the definition of BES includes "the electrical generation resources, transmission lines, interconnections with neighboring systems, and associated equipment, generally operated at voltages of 100 kV or higher". Therefore, if a generator protection trips the generator, the generator protection system can also be deemed a transmission Protection System because the generator is included in the BES. PG&E suggests that the interpretation be modified to state, "a Protection System for a radially connected transformer, which serves only Load and energized from the BES, would be considered a transmission Protection System and subject to these standards only if the protection trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element."
Frank F. Afranji	Portland General Electric Co.	1	Affirmative	PGE agrees with the interpretation given by the System Protection and Controls Subcommittee. The protection system for a radially connected transformer should be considered a transmission Protective System since it interrupts current from the BES. If the transformer breaker was to misoperate, it could cause delayed tripping from the remaining transmission line breakers ultimately effectin the BES.
Robert Kondziolka	Salt River Project	1	Negative	The Interpretation does not answer the question asked. It bases its guidance on whether or not the transformer is a BES element. Determining whether the transformer is a BES element causes the confusion and inconsistencies we believe the Interpretation request wanted to resolve.
Rich Salgo	Sierra Pacific Power Co.	1	Negative	The Standards Drafting Team is commended for eliminating the elements of vagueness from the prior interpretation (use of "generally" and deferral to the Regional Entity for specific clarification). However, we disagree with a key concept of this version, that an applicable protection system would trip an interrupting device that interrupts current supplied directly from the BES. Focusing on the very purpose of a transmission protection system, the principle of inclusion of a

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				<p>protection system in the subject standards applicability should revolve around whether the protection system detects and acts to isolate faults on transmission elements from any source of energy, not whether it interrupts current supplied from the BES. In the 2nd paragraph, the interpretation reads "...only if the protection trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element". From this statement, it appears that the intent is for both conditions to be satisfied (interruption of current from the BES AND the transformer being a part of the BES). In that event, with the transformer presumed to be a part of the BES, there would be no doubt as to the status of the associated protection system and no need for interpretation. However, the situation posed in the request is that of a radial transformer, and as such, the transformer itself would not likely be part of the BES at any rate, given the general radial exclusion in the present NERC definition of BES. As well, the radial nature of the transformer indicates that it may not even be considered to be a transmission element at all, but rather, distribution. We suggest a modification to the interpretation such that a Protection System be considered to be a transmission Protection System if it is installed for the purpose of detecting faults on transmission elements identified as being included in the BES, initiating action to clear the protected element from any source of energy.</p>
Horace Stephen Williamson	Southern Company Services, Inc.	1	Negative	<p>Recirculation Comment: We do not feel the response adequately addressed our reliability concern in the proposed interpretation. We continue to believe that 'any Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System' should be considered 'transmission Protection Systems' without any stipulation as to where they are installed or what they trip. The drafting team's response to our comment implies that low side equipment counts as part of the BES only if it fails to operate and impacts the BES reliability. What will be the criteria for determining the latter? Response to Original Comment: The drafting team believes the present interpretation appropriately addresses the reliability concern. In the commenter's example, if a failure to interrupt the Fault current from the 69 kV system resulted in a reliability concern the 69 kV Elements could be identified as BES Elements. Original Comment: Although we are in agreement with the first part of the definition that has been proposed for the phrase 'transmission Protection System' as "any Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System" we do not concur with the modification to the qualifier noted as 'and trips an interrupting device that interrupts current supplied directly from the BES'. We feel that the original applicability to 'and initiates action to clear the protected element from all local sources' more accurately addresses the transmission reliability</p>



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				concerns. As now proposed, a 230/69-kV facility that is interconnected with other non- BES 69-kV sources (other substations or generation facilities) and has Protection Systems installed to detect faults on the 230-kV source (. . . Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System..) and trips a 69-kV device, would not be included since it isn't tripping a device ' that interrupts current supplied directly from the BES'.
Keith V. Carman	Tri-State G & T Association, Inc.	1	Affirmative	Tri-State would like to point out that key to the interpretation is the condition that to be considered part of the "transmission Protection System" is that "the transformer is a BES element." Tri-State believes that a typical transformer that transforms from transmission voltage to distribution voltage is not a "BES element."
Gregory L Pieper	Xcel Energy, Inc.	1	Negative	Xcel Energy believes that this interpretation uses language that depends upon definition of BES elements (in this case transformers). How to determine if a transformer is classified as BES has not been clearly established (i.e. it is not clear as to if classification is based on high side or low side voltage). We believe it needs to be established how these boundary components and supporting systems (e.g. protection system) are classified in order to form a basis for the interpretation.
Timothy VanBlaricom	California ISO	2	Negative	We feel that a formal definition of 'transmission protection system' should be developed so that all RROs interpret the meaning in the same way.
Chuck B Manning	Electric Reliability Council of Texas, Inc.	2	Abstain	the interpretation does NOT clearly answer the question
Kim Warren	Independent Electricity System Operator	2	Affirmative	The IESO appreciates the drafting team's thoughtful consideration of the points we had raised in the previous two ballots. We accept that there are imitations to the current interpretation process and therefore respectfully suggest that the drafting team include in the Reliability Standards Issues Database for future consideration, the issue of how uncleared faults on non-BES elements that may impact the BES, should be addressed in the reliability standards. We also wish to point out that this issue is fully addressed in the NPCC region by virtue of the performance-based methodology applied for defining the BES (BPS).
Richard J. Mandes	Alabama Power Company	3	Negative	Recirculation Comment: We do not feel the response adequately addressed our reliability concern in the proposed interpretation. We continue to believe that 'any Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System' should be considered 'transmission Protection Systems' without any stipulation as to where they are installed or what they trip. The drafting team's response to our comment implies that low side equipment counts as part of the BES only if it fails to

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				<p>operate and impacts the BES reliability. What will be the criteria for determining the latter? Response to Original Comment: The drafting team believes the present interpretation appropriately addresses the reliability concern. In the commenter's example, if a failure to interrupt the Fault current from the 69 kV system resulted in a reliability concern the 69 kV Elements could be identified as BES Elements.</p> <p>Original Comment: Although we are in agreement with the first part of the definition that has been proposed for the phase 'transmission Protection System' as "any Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System" we do not concur with the modification to the qualifier noted as 'and trips an interrupting device that interrupts current supplied directly from the BES'. We feel that the original applicability to 'and initiates action to clear the protected element from all local sources' more accurately addresses the transmission reliability concerns. As now proposed, a 230/69-kV facility that is interconnected with other non- BES 69-kV sources (other substations or generation facilities) and has Protection Systems installed to detect faults on the 230-kV source (.. Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System..) and trips a 69-kV device, would not be included since it isn't tripping a device ' that interrupts current supplied directly from the BES'.</p>
Raj Rana	American Electric Power	3	Negative	<p>The revised interpretation is a significant improvement and AEP appreciates the work by the drafting team. However, AEP feels the last sentence of the first paragraph of the interpretation could be improved from: "...trips an interrupting device that interrupts current supplied directly from the BES." to the following: "...trips an interrupting device (such as circuit breakers and circuit switchers) that interrupts current flowing through the networked BES." In addition, AEP feels the last sentence of the last paragraph of the interpretation could be improved from: "...trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element." to the following: "...trips an interrupting device (such as circuit breakers and circuit switchers) that interrupts current flowing through the networked BES and the transformer is a BES element."</p>
Steve Alexanderson	Central Lincoln PUD	3	Affirmative	<p>The new interpretation is an improvement over the last. We are still are baffled why the team did not include the NERC definition of "transmission" to show they are not creating a brand new definition. Perhaps comments included with affirmative ballots receive less attention than those with negative ballots. If so, this one may go unnoticed as well.</p>
Bryan Y Harper	Cleco Utility Group	3	Negative	<p>Cleco respectively disagrees with the interpretation by the drafting team and the determination of a BES element should be clear and consistent across the continent. The definition of a BES element brings with it confusion when terms</p>

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				such as "generally" are used. In the example provided, one of the determinations should not be that the device interrupts current supplied directly from the BES but that the device interrupts current flowing between multiple BES substations or between a BES generator and a BES switchyard.
Kevin Querry	FirstEnergy Solutions	3	Affirmative	No Comments
Anthony L Wilson	Georgia Power Company	3	Negative	<p>Recirculation Comment: We do not feel the response adequately addressed our reliability concern in the proposed interpretation. We continue to believe that 'any Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System' should be considered 'transmission Protection Systems' without any stipulation as to where they are installed or what they trip. The drafting team's response to our comment implies that low side equipment counts as part of the BES only if it fails to operate and impacts the BES reliability. What will be the criteria for determining the latter? Response to Original Comment: The drafting team believes the present interpretation appropriately addresses the reliability concern. In the commenter's' example, if a failure to interrupt the Fault current from the 69 kV system resulted in a reliability concern the 69 kV Elements could be identified as BES Elements.</p> <p>Original Comment: Although we are in agreement with the first part of the definition that has been proposed for the phase 'transmission Protection System' as "any Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System" we do not concur with the modification to the qualifier noted as 'and trips an interrupting device that interrupts current supplied directly from the BES'. We feel that the original applicability to 'and initiates action to clear the protected element from all local sources' more accurately addresses the transmission reliability concerns. As now proposed, a 230/69-kV facility that is interconnected with other non- BES 69-kV sources (other substations or generation facilities) and has Protection Systems installed to detect faults on the 230-kV source (.. Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System..) and trips a 69-kV device, would not be included since it isn't tripping a device ' that interrupts current supplied directly from the BES'.</p>
Gwen S Frazier	Gulf Power Company	3	Negative	Although we are in agreement with the first part of the definition that has been proposed for the phase 'transmission Protection System' as "any Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System" we do not concur with the modification to the qualifier noted as 'and trips an interrupting device that

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				interrupts current supplied directly from the BES'. We feel that the original applicability to 'and initiates action to clear the protected element from all local sources' more accurately addresses the transmission reliability concerns. As now proposed, a 230/69-kV facility that is interconnected with other non- BES 69-kV sources (other substations or generation facilities) and has Protection Systems installed to detect faults on the 230-kV source (.. Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System..) and trips a 69-kV device, would not be included since it isn't tripping a device ' that interrupts current supplied directly from the BES'.
Charles Locke	Kansas City Power & Light Co.	3	Affirmative	Recommend the first paragraph in the interpretation make it clear this does not include transformer protection systems for transformers with secondary winding voltages less than 100kv. Please consider the following language. The request for interpretation of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2 focuses on the applicability of the term "transmission Protection System." The NERC Glossary of Terms Used in Reliability Standards contains a definition of "Protection System" but does not contain a definition of transmission Protection System. In these two standards, use of the phrase transmission Protection System indicates that the requirements using this phrase are is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES and for transformers with secondary windings of 100kv or higher.
Bruce Merrill	Lincoln Electric System	3	Negative	Further clarification is required regarding the definition of a "BES element" (e.g., What is a BES transformer?). Receiving current from the BES is not a suitable criterion for applicability. As currently written 115kV/12kV distribution transformers would incorrectly be classified as a BES element because they receive current from the BES. We propose the following definitions: Non-GSU transformers must have all windings (excluding the tertiary winding) rated at 100kV and above in order to be classified to be a BES transformer. GSU transformers must have a primary winding rated at 100kV and above in order to be classified to be a BES transformer.
Thomas C. Mielnik	MidAmerican Energy Co.	3	Negative	We are concerned that the interpretation could be interpreted in a way that incorrectly leads to the conclusion that transformers with low side below 100 kV (and the transformer's sytem protection) are BES. Both windings need to be 100 kV and above to be considered to be BES.
Don Horsley	Mississippi Power	3	Negative	Recirculation Comment: We do not feel the response adequately addressed our reliability concern in the proposed interpretation. We continue to believe that 'any Protection System that is installed for the purpose of detecting faults on

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				<p>transmission elements identified as being included in the Bulk Electric System' should be considered 'transmission Protection Systems' without any stipulation as to where they are installed or what they trip. The drafting team's response to our comment implies that low side equipment counts as part of the BES only if it fails to operate and impacts the BES reliability. What will be the criteria for determining the latter? Response to Original Comment: The drafting team believes the present interpretation appropriately addresses the reliability concern. In the commenter's example, if a failure to interrupt the Fault current from the 69 kV system resulted in a reliability concern the 69 kV Elements could be identified as BES Elements. Original Comment: Although we are in agreement with the first part of the definition that has been proposed for the phase 'transmission Protection System' as "any Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System" we do not concur with the modification to the qualifier noted as 'and trips an interrupting device that interrupts current supplied directly from the BES'. We feel that the original applicability to 'and initiates action to clear the protected element from all local sources' more accurately addresses the transmission reliability concerns. As now proposed, a 230/69-kV facility that is interconnected with other non- BES 69-kV sources (other substations or generation facilities) and has Protection Systems installed to detect faults on the 230-kV source (.. Protection System that is installed for the purpose of detecting faults on transmission elements identified as being included in the Bulk Electric System..) and trips a 69-kV device, would not be included since it isn't tripping a device ' that interrupts current supplied directly from the BES'.</p>
Anthony Schacher	Salem Electric	3	Negative	The system protection devices have been installed to protect the substation transformers and distribution system downstream of the protection device, not the BES upstream. Therefore they should be exempt of the standard requirements
John T. Underhill	Salt River Project	3	Negative	The Interpretation does not answer the question asked. It bases its guidance on whether or not the transformer is a BES element. Determining whether the transformer is a BES element causes the confusion and inconsistencies we believe the Interpretation request wanted to resolve.
James R. Keller	Wisconsin Electric Power Marketing	3	Negative	The Comment Period and Ballot Period should not overlap. The industry and Standard Drafting Team should have opportunity to review comments prior to a ballot.
Gregory J Le Grave	Wisconsin Public Service Corp.	3	Affirmative	The interpretation needs to be further clarified to state: BES transformers are defined as: Generator step-up transformers that have high side voltage of 100Kv or greater. Or Transformers that have a high and low side voltages of 100Kv or greater.

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Michael Ibold	Xcel Energy, Inc.	3	Negative	Xcel Energy believes that this interpretation uses language that depends upon definition of BES elements (in this case transformers). How to determine if a transformer is classified as BES has not been clearly established (i.e. it is not clear as to if classification is based on high side or low side voltage). We believe it needs to be established how these boundary components and supporting systems (e.g. protection system) are classified in order to form a basis for the interpretation.
Anthony Jankowski	Wisconsin Energy Corp.	4	Negative	The interpretation is contrary to the NERC BES definition and the RFC BES definition.
James A Ziebarth	Y-W Electric Association, Inc.	4	Affirmative	Y-WEA appreciates the clarity that the drafting team put in this interpretation. This interpretation should bring about much more uniform understanding and enforcement of standards PRC-004-1 and PRC-005-1.
George Tatar	Black Hills Corp	5	Negative	BHP voted No because of the qualifiers "that interrupts current supplied directly from the BES' and 'the transformer is a BES element". These qualifiers force the issue of whether a transformer fed from a non-BES line can be considered a BES transformer. Because the interpretation, as written, does not allow the entities question to be consistently and reliably answered, BHP is voting NO.
Amir Y Hammad	Constellation Power Source Generation, Inc.	5	Abstain	Although this interpretation is reasonable when viewed between transmission and distribution elements, Constellation is concerned with this interpretation potentially being used for generation facilities connected to the BES. As an example, take a 10 MW generation facility connected at 115kV . This facility would not be part of the BES per the current definitions. However, as written, this interpretation would conclude that any protection of the step up transformer makes it part of the BES, even though the facility does not meet the BES criteria. Although this is not the intent of the interpretation, it is a potential consequence if applied incorrectly.
Scott Heidtbrink	Kansas City Power & Light Co.	5	Affirmative	Recommend the first paragraph in the interpretation make it clear this does not include transformer protection systems for transformers with secondary winding voltages less than 100kv. Please consider the following language. The request for interpretation of PRC-004-1 Requirements R1 and R3 and PRC-005-1 Requirements R1 and R2 focuses on the applicability of the term "transmission Protection System." The NERC Glossary of Terms Used in Reliability Standards contains a definition of "Protection System" but does not contain a definition of transmission Protection System. In these two standards, use of the phrase transmission Protection System indicates that the requirements using this phrase are is applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES and for transformers with secondary windings of 100kv or higher.

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Glen Reeves	Salt River Project	5	Negative	The Interpretation does not answer the question asked. It bases its guidance on whether or not the transformer is a BES element. Determining whether the transformer is a BES element causes the confusion and inconsistencies we believe the Interpretation request wanted to resolve.
Karl Bryan	U.S. Army Corps of Engineers Northwestern Division	5	Negative	The interpretation does not clearly answer the question posed by the "request for interpretation". The intent of the Reliability Standards is to have one set of rules for the BES and yet the Regional Entities appear to be carving out exceptions that are going beyond the intent of a reliable BES. In regards to this particular issue, either the transformer feeding a radial load is in or out of the BES and the disparity amongst the REs (RFirst and WECC) needs to be fixed.
Linda Horn	Wisconsin Electric Power Co.	5	Negative	The Comment Period and Ballot Period should not overlap. The industry and Standard Drafting Team should have opportunity to review comments prior to a ballot.
Liam Noailles	Xcel Energy, Inc.	5	Negative	Xcel Energy believes that this interpretation uses language that depends upon definition of BES elements (in this case transformers). How to determine if a transformer is classified as BES has not been clearly established (i.e. it is not clear as to if classification is based on high side or low side voltage). We believe it needs to be established how these boundary components and supporting systems (e.g. protection system) are classified in order to form a basis for the interpretation.
Edward P. Cox	AEP Marketing	6	Negative	The revised interpretation is a significant improvement and AEP appreciates the work by the drafting team. However, AEP feels the last sentence of the first paragraph of the interpretation could be improved from: "...trips an interrupting device that interrupts current supplied directly from the BES." to the following: "...trips an interrupting device (such as circuit breakers and circuit switchers) that interrupts current flowing through the networked BES." In addition, AEP feels the last sentence of the last paragraph of the interpretation could be improved from: "...trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element." to the following: "...trips an interrupting device (such as circuit breakers and circuit switchers) that interrupts current flowing through the networked BES and the transformer is a BES element."
Matthew D Cripps	Cleco Power LLC	6	Negative	Cleco respectively disagrees with the interpretation by the drafting team and the determination of a BES element should be clear and consistent across the continent. The definition of a BES element brings with it confusion when terms such as "generally" are used. In the example provided, one of the determinations should not be that the device interrupts current supplied directly from the BES but that the device interrupts current flowing between multiple BES substations or between a BES generator and a BES switchyard.

Voter	Entity	Segment	Vote	Comment
Eric Ruskamp	Lincoln Electric System	6	Negative	Further clarification is required regarding the definition of a "BES element" (e.g., What is a BES transformer?). Receiving current from the BES is not a suitable criterion for applicability. As currently written 115kV/12kV distribution transformers would incorrectly be classified as a BES element because they receive current from the BES. We propose the following definitions: Non-GSU transformers must have all windings (excluding the tertiary winding) rated at 100kV and above in order to be classified to be a BES transformer. GSU transformers must have a primary winding rated at 100kV and above in order to be classified to be a BES transformer.
David F. Lemmons	Xcel Energy, Inc.	6	Negative	Xcel Energy believes that this interpretation uses language that depends upon definition of BES elements (in this case transformers). How to determine if a transformer is classified as BES has not been clearly established (i.e. it is not clear as to if classification is based on high side or low side voltage). We believe it needs to be established how these boundary components and supporting systems (e.g. protection system) are classified in order to form a basis for the interpretation.
Kent Saathoff	Electric Reliability Council of Texas, Inc.	10	Abstain	The question being asked is if the transformer protection system of a radially connected transformer, energized by the BES, is considered a BES transmission Protection System. The interpretation does not clearly state whether or not the transformer is part of the BES and further implies it may be some times but not all times, depending on how the transformer is cleared (separated from the transmission by the breaker vs. disconnecting the transformer and including clearing a section of transmission).
Dan R. Schoenecker	Midwest Reliability Organization	10	Negative	Further clarification is required regarding the definition of a "BES element" (e.g., What is a BES transformer?). Receiving current from the BES is not a suitable criterion for applicability. As currently written 115kV/12kV distribution transformers would incorrectly be classified as a BES element because they receive current from the BES.

End of Report



**A. Introduction**

- 1. Title:**           **Transmission and Generation Protection System Maintenance and Testing**
  
- 2. Number:**       PRC-005-1a
  
- 3. Purpose:**      To ensure all transmission and generation Protection Systems affecting the reliability of the Bulk Electric System (BES) are maintained and tested.
  
- 4. Applicability**
  - 4.1.** Transmission Owner.
  - 4.2.** Generator Owner.
  - 4.3.** Distribution Provider that owns a transmission Protection System.
  
- 5. Effective Date:**    To be determined

**B. Requirements**

- R1.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall have a Protection System maintenance and testing program for Protection Systems that affect the reliability of the BES. The program shall include:
- R1.1.** Maintenance and testing intervals and their basis.
  - R1.2.** Summary of maintenance and testing procedures.
- R2.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization on request (within 30 calendar days). The documentation of the program implementation shall include:
- R2.1.** Evidence Protection System devices were maintained and tested within the defined intervals.
  - R2.2.** Date each Protection System device was last tested/maintained.

**C. Measures**

- M1.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System that affects the reliability of the BES, shall have an associated Protection System maintenance and testing program as defined in Requirement 1.
- M2.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System that affects the reliability of the BES, shall have evidence it provided documentation of its associated Protection System maintenance and testing program and the implementation of its program as defined in Requirement 2.

**D. Compliance**

- 1. Compliance Monitoring Process**
  - 1.1. Compliance Monitoring Responsibility**

Regional Reliability Organization.

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

One calendar year.

**1.3. Data Retention**

The Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System, shall retain evidence of the implementation of its Protection System maintenance and testing program for three years.

The Compliance Monitor shall retain any audit data for three years.

**1.4. Additional Compliance Information**

The Transmission Owner and any Distribution Provider that owns a transmission Protection System and the Generator Owner that owns a generation Protection System, shall each demonstrate compliance through self-certification or audit (periodic, as part of targeted monitoring or initiated by complaint or event), as determined by the Compliance Monitor.

**2. Levels of Non-Compliance**

**2.1. Level 1:** Documentation of the maintenance and testing program provided was incomplete as required in R1, but records indicate maintenance and testing did occur within the identified intervals for the portions of the program that were documented.

**2.2. Level 2:** Documentation of the maintenance and testing program provided was complete as required in R1, but records indicate that maintenance and testing did not occur within the defined intervals.

**2.3. Level 3:** Documentation of the maintenance and testing program provided was incomplete, and records indicate implementation of the documented portions of the maintenance and testing program did not occur within the identified intervals.

**2.4. Level 4:** Documentation of the maintenance and testing program, or its implementation, was not provided.

**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
1	December 1, 2005	1. Changed incorrect use of certain hyphens (-) to “en dash” (–) and “em dash (—).” 2. Added “periods” to items where appropriate. 3. Changed “Timeframe” to “Time Frame” in item D, 1.2.	01/20/05
1a.	TBD	4. Added Appendix 1 - Interpretation	Project 2009-17

**Standard PRC-005-1a — Transmission and Generation Protection System Maintenance and Testing**

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		regarding applicability of standard to protection of radially connected transformers	interpretation
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## Appendix 1

Requirement Number and Text of Requirement
<p><b>R1.</b> Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall have a Protection System maintenance and testing program for Protection Systems that affect the reliability of the BES. The program shall include:</p> <p><b>R1.1.</b> Maintenance and testing intervals and their basis.</p> <p><b>R1.2.</b> Summary of maintenance and testing procedures.</p> <p><b>R2.</b> Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization on request (within 30 calendar days). The documentation of the program implementation shall include:</p> <p><b>R2.1</b> Evidence Protection System devices were maintained and tested within the defined intervals.</p> <p><b>R2.2</b> Date each Protection System device was last tested/maintained.</p>
<b>Question:</b>
Is protection for a radially-connected transformer protection system energized from the BES considered a transmission Protection System subject to this standard?
<b>Response:</b>
<p>The request for interpretation of PRC-005-1 Requirements R1 and R2 focuses on the applicability of the term “transmission Protection System.” The NERC Glossary of Terms Used in Reliability Standards contains a definition of “Protection System” but does not contain a definition of transmission Protection System. In these two standards, use of the phrase transmission Protection System indicates that the requirements using this phrase are applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.</p> <p>A Protection System for a radially connected transformer energized from the BES would be considered a transmission Protection System and subject to these standards only if the protection trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element.</p>

## A. Introduction

1. **Title:** **Transmission and Generation Protection System Maintenance and Testing**
2. **Number:** PRC-005-1a
3. **Purpose:** To ensure all transmission and generation Protection Systems affecting the reliability of the Bulk Electric System (BES) are maintained and tested.
4. **Applicability**
  - 4.1. Transmission Owner.
  - 4.2. Generator Owner.
  - 4.3. Distribution Provider that owns a transmission Protection System.
5. **Effective Date:** ~~May 1, 2006~~ To be determined

## B. Requirements

- R1.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall have a Protection System maintenance and testing program for Protection Systems that affect the reliability of the BES. The program shall include:
- R1.1.** Maintenance and testing intervals and their basis.
  - R1.2.** Summary of maintenance and testing procedures.
- R2.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization on request (within 30 calendar days). The documentation of the program implementation shall include:
- R2.1.** Evidence Protection System devices were maintained and tested within the defined intervals.
  - R2.2.** Date each Protection System device was last tested/maintained.

## C. Measures

- M1.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System that affects the reliability of the BES, shall have an associated Protection System maintenance and testing program as defined in Requirement 1.
- M2.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System that affects the reliability of the BES, shall have evidence it provided documentation of its associated Protection System maintenance and testing program and the implementation of its program as defined in Requirement 2.

## D. Compliance

1. **Compliance Monitoring Process**
  - 1.1. **Compliance Monitoring Responsibility**

Regional Reliability Organization.

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

One calendar year.

**1.3. Data Retention**

The Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System, shall retain evidence of the implementation of its Protection System maintenance and testing program for three years.

The Compliance Monitor shall retain any audit data for three years.

**1.4. Additional Compliance Information**

The Transmission Owner and any Distribution Provider that owns a transmission Protection System and the Generator Owner that owns a generation Protection System, shall each demonstrate compliance through self-certification or audit (periodic, as part of targeted monitoring or initiated by complaint or event), as determined by the Compliance Monitor.

**2. Levels of Non-Compliance**

- 2.1. Level 1:** Documentation of the maintenance and testing program provided was incomplete as required in R1, but records indicate maintenance and testing did occur within the identified intervals for the portions of the program that were documented.
- 2.2. Level 2:** Documentation of the maintenance and testing program provided was complete as required in R1, but records indicate that maintenance and testing did not occur within the defined intervals.
- 2.3. Level 3:** Documentation of the maintenance and testing program provided was incomplete, and records indicate implementation of the documented portions of the maintenance and testing program did not occur within the identified intervals.
- 2.4. Level 4:** Documentation of the maintenance and testing program, or its implementation, was not provided.

**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
1	December 1, 2005	1. Changed incorrect use of certain hyphens (-) to “en dash” (–) and “em dash (—).” 2. Added “periods” to items where appropriate. 3. Changed “Timeframe” to “Time Frame” in item D, 1.2.	01/20/05
<u>1a.</u>	<u>TBD</u>	<u>4. Added Appendix 1 - Interpretation</u>	<u>Project 2009-17</u>

Standard PRC-005-1a — Transmission and Generation Protection System Maintenance and Testing

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		<u>regarding applicability of standard to protection of radially connected transformers</u>	<u>interpretation</u>
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## Appendix 1

### Requirement Number and Text of Requirement

R1. Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall have a Protection System maintenance and testing program for Protection Systems that affect the reliability of the BES. The program shall include:

R1.1. Maintenance and testing intervals and their basis.

R1.2. Summary of maintenance and testing procedures.

R2. Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization on request (within 30 calendar days). The documentation of the program implementation shall include:

R2.1 Evidence Protection System devices were maintained and tested within the defined intervals.

R2.2 Date each Protection System device was last tested/maintained.

### Question:

Is protection for a radially-connected transformer protection system energized from the BES considered a transmission Protection System subject to this standard?

### Response:

The request for interpretation of PRC-005-1 Requirements R1 and R2 focuses on the applicability of the term “transmission Protection System.” The NERC Glossary of Terms Used in Reliability Standards contains a definition of “Protection System” but does not contain a definition of transmission Protection System. In these two standards, use of the phrase transmission Protection System indicates that the requirements using this phrase are applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.

A Protection System for a radially connected transformer energized from the BES would be considered a transmission Protection System and subject to these standards only if the protection trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element.



**A. Introduction**

- 1. Title:** Analysis and Mitigation of Transmission and Generation Protection System Misoperations
- 2. Number:** PRC-004-1a
- 3. Purpose:** Ensure all transmission and generation Protection System Misoperations affecting the reliability of the Bulk Electric System (BES) are analyzed and mitigated.
- 4. Applicability**
  - 4.1.** Transmission Owner.
  - 4.2.** Distribution Provider that owns a transmission Protection System.
  - 4.3.** Generator Owner.
- 5. Effective Date:** To be determined

**B. Requirements**

The Transmission Owner and any Distribution Provider that owns a transmission Protection System shall each analyze its transmission Protection System Misoperations and shall develop and implement a Corrective Action Plan to avoid future Misoperations of a similar nature according to the Regional Reliability Organization’s procedures developed for Reliability Standard PRC-003 Requirement 1.

The Generator Owner shall analyze its generator Protection System Misoperations, and shall develop and implement a Corrective Action Plan to avoid future Misoperations of a similar nature according to the Regional Reliability Organization’s procedures developed for PRC-003 R1.

The Transmission Owner, any Distribution Provider that owns a transmission Protection System, and the Generator Owner shall each provide to its Regional Reliability Organization, documentation of its Misoperations analyses and Corrective Action Plans according to the Regional Reliability Organization’s procedures developed for PRC-003 R1.

**C. Measures**

- M1.** The Transmission Owner, and any Distribution Provider that owns a transmission Protection System shall each have evidence it analyzed its Protection System Misoperations and developed and implemented Corrective Action Plans to avoid future Misoperations of a similar nature according to the Regional Reliability Organization procedures developed for PRC-003 R1.
- M2.** The Generator Owner shall have evidence it analyzed its Protection System Misoperations and developed and implemented Corrective Action Plans to avoid future Misoperations of a similar nature according to the Regional Reliability Organization’s procedures developed for PRC-003 R1.
- M3.** Each Transmission Owner, and any Distribution Provider that owns a transmission Protection System, and each Generator Owner shall have evidence it provided documentation of its Protection System Misoperations, analyses and Corrective Action Plans according to the Regional Reliability Organization procedures developed for PRC-003 R1.

**D. Compliance**

- 1. Compliance Monitoring Process**
  - 1.1. Compliance Monitoring Responsibility**

Regional Reliability Organization.

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

One calendar year.

**1.3. Data Retention**

The Transmission Owner, and Distribution Provider that own a transmission Protection System and the Generator Owner that owns a generation Protection System shall each retain data on its Protection System Misoperations and each accompanying Corrective Action Plan until the Corrective Action Plan has been executed or for 12 months, whichever is later.

The Compliance Monitor shall retain any audit data for three years.

**1.4. Additional Compliance Information**

The Transmission Owner, and any Distribution Provider that owns a transmission Protection System and the Generator Owner shall demonstrate compliance through self-certification or audit (periodic, as part of targeted monitoring or initiated by complaint or event), as determined by the Compliance Monitor.

**2. Levels of Non-Compliance for Transmission Owners and Distribution Providers that own a Transmission Protection System:**

**2.1. Level 1:** Documentation of Misoperations is complete according to PRC-004 R1, but documentation of Corrective Action Plans is incomplete.

**2.2. Level 2:** Documentation of Misoperations is incomplete according to PRC-004 R1 and documentation of Corrective Action Plans is incomplete.

**2.3. Level 3:** Documentation of Misoperations is incomplete according to PRC-004 R1 and there are no associated Corrective Action Plans.

**2.4. Level 4:** Misoperations have not been analyzed and documentation has not been provided to the Regional Reliability Organization according to Requirement 3.

**3. Levels of Non-Compliance for Generator Owners**

**3.1. Level 1:** Documentation of Misoperations is complete according to PRC-004 R2, but documentation of Corrective Action Plans is incomplete.

**3.2. Level 2:** Documentation of Misoperations is incomplete according to PRC-004 R2 and documentation of Corrective Action Plans is incomplete.

**3.3. Level 3:** Documentation of Misoperations is incomplete according to PRC-004 R2 and there are no associated Corrective Action Plans.

**3.4. Level 4:** Misoperations have not been analyzed and documentation has not been provided to the Regional Reliability Organization according to R3.

**E. Regional Differences**

None identified.

**Standard PRC-004-1a — Analysis and Mitigation of Transmission and Generation Protection System Misoperations**

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**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
1	December 1, 2005	<ol style="list-style-type: none"> <li>1. Changed incorrect use of certain hyphens (-) to “en dash” (–) and “em dash (—).”</li> <li>2. Added “periods” to items where appropriate. Changed “Timeframe” to “Time Frame” in item D, 1.2.</li> </ol>	01/20/06
1.a	TBD	<ol style="list-style-type: none"> <li>3. Added Appendix 1 - Interpretation regarding applicability of standard to protection of radially connected transformers</li> </ol>	Project 2009-17 interpretation

## Appendix 1

<b>Requirement Number and Text of Requirement</b>
<p><b>R1.</b> The Transmission Owner and any Distribution Provider that owns a transmission Protection System shall each analyze its transmission Protection System Misoperations and shall develop and implement a Corrective Action Plan to avoid future Misoperations of a similar nature according to the Regional Reliability Organization’s procedures developed for Reliability Standard PRC-003 Requirement 1.</p> <p><b>R3.</b> The Transmission Owner, any Distribution Provider that owns a transmission Protection System, and the Generator Owner shall each provide to its Regional Reliability Organization, documentation of its Misoperations analyses and Corrective Action Plans according to the Regional Reliability Organization’s procedures developed for PRC-003 R1.</p>
<b>Question:</b>
<p>Is protection for a radially-connected transformer protection system energized from the BES considered a transmission Protection System subject to this standard?</p>
<b>Response:</b>
<p>The request for interpretation of PRC-004-1 Requirements R1 and R3 focuses on the applicability of the term “transmission Protection System.” The NERC Glossary of Terms Used in Reliability Standards contains a definition of “Protection System” but does not contain a definition of transmission Protection System. In these two standards, use of the phrase transmission Protection System indicates that the requirements using this phrase are applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.</p> <p>A Protection System for a radially connected transformer energized from the BES would be considered a transmission Protection System and subject to these standards only if the protection trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element.</p>

## A. Introduction

1. **Title:** **Analysis and Mitigation of Transmission and Generation Protection System Misoperations**
2. **Number:** PRC-004-1a
3. **Purpose:** Ensure all transmission and generation Protection System Misoperations affecting the reliability of the Bulk Electric System (BES) are analyzed and mitigated.
4. **Applicability**
  - 4.1. Transmission Owner.
  - 4.2. Distribution Provider that owns a transmission Protection System.
  - 4.3. Generator Owner.
5. **Effective Date:** ~~August 1, 2006~~ To be determined

## B. Requirements

The Transmission Owner and any Distribution Provider that owns a transmission Protection System shall each analyze its transmission Protection System Misoperations and shall develop and implement a Corrective Action Plan to avoid future Misoperations of a similar nature according to the Regional Reliability Organization's procedures developed for Reliability Standard PRC-003 Requirement 1.

The Generator Owner shall analyze its generator Protection System Misoperations, and shall develop and implement a Corrective Action Plan to avoid future Misoperations of a similar nature according to the Regional Reliability Organization's procedures developed for PRC-003 R1.

The Transmission Owner, any Distribution Provider that owns a transmission Protection System, and the Generator Owner shall each provide to its Regional Reliability Organization, documentation of its Misoperations analyses and Corrective Action Plans according to the Regional Reliability Organization's procedures developed for PRC-003 R1.

## C. Measures

- M1. The Transmission Owner, and any Distribution Provider that owns a transmission Protection System shall each have evidence it analyzed its Protection System Misoperations and developed and implemented Corrective Action Plans to avoid future Misoperations of a similar nature according to the Regional Reliability Organization procedures developed for PRC-003 R1.
- M2. The Generator Owner shall have evidence it analyzed its Protection System Misoperations and developed and implemented Corrective Action Plans to avoid future Misoperations of a similar nature according to the Regional Reliability Organization's procedures developed for PRC-003 R1.
- M3. Each Transmission Owner, and any Distribution Provider that owns a transmission Protection System, and each Generator Owner shall have evidence it provided documentation of its Protection System Misoperations, analyses and Corrective Action Plans according to the Regional Reliability Organization procedures developed for PRC-003 R1.

## D. Compliance

1. **Compliance Monitoring Process**
  - 1.1. **Compliance Monitoring Responsibility**

Regional Reliability Organization.

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

One calendar year.

**1.3. Data Retention**

The Transmission Owner, and Distribution Provider that own a transmission Protection System and the Generator Owner that owns a generation Protection System shall each retain data on its Protection System Misoperations and each accompanying Corrective Action Plan until the Corrective Action Plan has been executed or for 12 months, whichever is later.

The Compliance Monitor shall retain any audit data for three years.

**1.4. Additional Compliance Information**

The Transmission Owner, and any Distribution Provider that owns a transmission Protection System and the Generator Owner shall demonstrate compliance through self-certification or audit (periodic, as part of targeted monitoring or initiated by complaint or event), as determined by the Compliance Monitor.

**2. Levels of Non-Compliance for Transmission Owners and Distribution Providers that own a Transmission Protection System:**

**2.1. Level 1:** Documentation of Misoperations is complete according to PRC-004 R1, but documentation of Corrective Action Plans is incomplete.

**2.2. Level 2:** Documentation of Misoperations is incomplete according to PRC-004 R1 and documentation of Corrective Action Plans is incomplete.

**2.3. Level 3:** Documentation of Misoperations is incomplete according to PRC-004 R1 and there are no associated Corrective Action Plans.

**2.4. Level 4:** Misoperations have not been analyzed and documentation has not been provided to the Regional Reliability Organization according to Requirement 3.

**3. Levels of Non-Compliance for Generator Owners**

**3.1. Level 1:** Documentation of Misoperations is complete according to PRC-004 R2, but documentation of Corrective Action Plans is incomplete.

**3.2. Level 2:** Documentation of Misoperations is incomplete according to PRC-004 R2 and documentation of Corrective Action Plans is incomplete.

**3.3. Level 3:** Documentation of Misoperations is incomplete according to PRC-004 R2 and there are no associated Corrective Action Plans.

**3.4. Level 4:** Misoperations have not been analyzed and documentation has not been provided to the Regional Reliability Organization according to R3.

**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
1	December 1, 2005	<ol style="list-style-type: none"> <li>1. Changed incorrect use of certain hyphens (-) to “en dash” (–) and “em dash (—).”</li> <li>2. Added “periods” to items where appropriate. Changed “Timeframe” to “Time Frame” in item D, 1.2.</li> </ol>	01/20/06
<u>1.a</u>	<u>TBD</u>	<u>3. Added Appendix 1 - Interpretation regarding applicability of standard to protection of radially connected transformers</u>	<u>Project 2009-17 interpretation</u>

## Appendix 1

### Requirement Number and Text of Requirement

R1. The Transmission Owner and any Distribution Provider that owns a transmission Protection System shall each analyze its transmission Protection System Misoperations and shall develop and implement a Corrective Action Plan to avoid future Misoperations of a similar nature according to the Regional Reliability Organization’s procedures developed for Reliability Standard PRC-003 Requirement 1.

R3. The Transmission Owner, any Distribution Provider that owns a transmission Protection System, System, and the Generator Owner shall each provide to its Regional Reliability Organization, documentation of its Misoperations analyses and Corrective Action Plans according to the Regional Reliability Organization’s procedures developed for PRC-003 R1.

### Question:

Is protection for a radially-connected transformer protection system energized from the BES considered a transmission Protection System subject to this standard?

### Response:

The request for interpretation of PRC-004-1 Requirements R1 and R3 focuses on the applicability of the term “transmission Protection System.” The NERC Glossary of Terms Used in Reliability Standards contains a definition of “Protection System” but does not contain a definition of transmission Protection System. In these two standards, use of the phrase transmission Protection System indicates that the requirements using this phrase are applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from the BES.

A Protection System for a radially connected transformer energized from the BES would be considered a transmission Protection System and subject to these standards only if the protection trips an interrupting device that interrupts current supplied directly from the BES and the transformer is a BES element.



**Exhibit E**

**Roster and Biographies of the Interpretation Drafting Team**

## Project 2009-17 Interpretation of PRC-004-1 and PRC-005-1

for

### Y-W Electric Association and Tri-State Generation and Transmission Association Interpretation Drafting Team

Name and Title Affiliation Contact Info	Bio
<p>Jonathan Sykes Manager of System Protection</p> <p>Pacific Gas and Electric Company 1919 Webster Street Room #409 Oakland, California 94612</p> <p>(510) 874-2691 (510) 874-2442 Fx jfst@pge.com</p>	<p>Jonathan A. Sykes is the chair of the NERC System Protection and Control Subcommittee (SPCS). He received a BSEE Degree from the University of Arizona and is also a registered professional engineer in the State of Arizona. Jonathan received the 2004 IEEE PES Chapter Award for Outstanding Engineer for developing an advanced wide area remedial action scheme. He has more than 28 years experience in the utility industry with extensive experience in EHV relaying, integration, protection system applications, and design and has authored and co-authored many papers and presentations pertinent to the industry. Jonathan held a Senior Principal Engineer position at Salt River Project (SRP) and is currently the Manager of the Pacific Gas and Electric Company (PG&amp;E) System Protection group and is also very active in IEEE PSRC, WECC, and NERC.</p>
<p>Charles W. Rogers Principal Engineer Drafting Team Chair</p> <p>Consumers Energy 1945 W. Parnall Road Jackson, Michigan 49201</p> <p>(517) 788-0027 cwrogers@cmsenergy.com</p>	<p>Charles Rogers is a Principal Engineer at Consumers Energy, where he has been employed since 1978. For the bulk of his career, Charles has been responsible for application of protective relaying to the transmission and distribution systems, and is currently responsible for managing compliance to NERC Standards for the "wires" portion of Consumers Energy. He chaired the NERC System Protection and Control Task Force from its inception in 2004 through May 2008, and continues to be a member of its successor group, the NERC System Protection and Control Task Force. He chaired the ECAR investigation into the August 2003 blackout, chaired the ECAR Protection Panel for several years, and now chairs the RFC Protection Subcommittee. At NERC, he was a member of the "Phase II Standard Drafting Team" in 2005-2006, chaired the standard drafting team that developed PRC-023-1, and currently chairs the standard drafting teams assigned to Projects 2007-17 (Protection System maintenance) and 2010-13 (addressing FERC Order 733). At RFC, he also chaired the standard drafting team that developed PRC-002-RFC-01 and currently chairs a standard drafting team that is developing a regional standard addressing Special Protection Systems. Charles is also a member of IEEE Standards Coordinating Committee 21, and was a key member of the working groups that developed IEEE 1547, IEEE 1547.2, and IEEE 1547.4. He received his BSEE degree from Michigan Technological University in 1978. He is a registered professional engineer in the State of Michigan, and is a Senior Member of IEEE.</p>
<p>Baj Agrawal Engineering Manager</p> <p>Arizona Public Service Co. 2124 W. Cheryl Drive Phoenix, AZ 85021</p>	<p>Dr. Baj L. Agrawal holds a Ph.D. from the University of Arizona, Tucson. Dr. Agrawal is an Engineering Manager at Arizona Public Service Co., where he has worked since 1974. He has extensive experience in the analysis, control and testing of subsynchronous resonance, power system dynamics modeling and simulation, and field testing of generators. He has co-authored many papers on subsynchronous resonance analysis and power system testing and has co-authored a book on subsynchronous resonance. Dr. Agrawal is an IEEE fellow and is</p>

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<p>David Angell Manager, Delivery Planning  Idaho Power Company P.O. Box 70 Boise, Idaho 83707  (208) 388-2701 DaveAngell@idahopower.com</p>	<p>David Angell is the Manager of Delivery Planning for Idaho Power and an Adjunct Professor at Boise State University. He graduated from the University of Idaho with a Bachelor of Science degree in electrical engineering in 1984 and followed with a Master of Science degree in 1986. He has twenty five years of experience in communications, metering, planning, and system protection with Idaho Power and the Bonneville Power Administration.</p>
<p>William J. Miller Principal Engineer  Exelon Corporation 2 Lincoln Center Oakbrook Terrace, Illinois 60181 (630) 576-6916 (630) 576-6354 Fx williamj.miller@comed.com</p>	<p>William J. Miller graduated with a BSEE concentrated in Electric Power Engineering from the University of Illinois at Urbana-Champaign in 1984. He has 26 years of experience working for ComEd in protection testing, projects, or planning. He worked approximately 10 years as a testing engineer in transmission substations and nuclear power plants and was the lead test engineer at Dresden Nuclear Power station for two years. He was also the lead relay planning engineer in charge of approving all protection system designs for ComEd's relay design group for eight years. He is currently a Principal Engineer in the Real Time Analysis Group analyzing all system operations. He has been a member of the NERC System Protection and Control Subcommittee since about 2004 and is currently serving as Vice Chairman. He is a member of the IEEE and has been throughout his career. He has been registered as a Professional Engineer in the State of Illinois.</p>
<p>Larry Brusseau Principal Engineer/Compliance Program Manager  MAPP COR 1970 Oakcrest Ave. Suite 200 Roseville, MN 55113  (651)294-7077 Le.brusseau@mappcor.org</p>	<p>Mr. Brusseau has over 20 years of experience in the electric power industry. Mr. Brusseau joined MAPP COR staff in January, 2009 and currently holds the position of Principal Engineer. He is the Compliance Program Manager for MAPP COR and secretary to the Mid-Continent Compliance Forum. He is also responsible for the Transmission Reliability Assessment Working Group, Northern MAPP Operating Review Working Group and the Missouri Basin Subregional Planning Group, which produces the annual MAPP System Performance Assessment, MAPP Member Reliability Criteria and Study Procedures Manual, and provides input to the MAPP Regional Transmission Plan. He is a subject matter expert for MAPP COR in transmission planning activities, and regional reliability standards, compliance and enforcement. Prior to joining MAPP COR, Mr. Brusseau was Midwest Reliability Organization's Standards Manager. In this role, Mr. Brusseau was responsible for assuring that the standards process was being followed properly and those standards in development increased reliability for the region, and was also responsible for the MRO Compliance Data Management System (CDMS) and the Reliability Standard Voting Process (RSVP) systems. He has worked with MRO's Standards Committee, NERC Standards Review Subcommittee, Regional Standards Drafting Teams, and NERC Standards Drafting Teams. He has participated in over 50 Compliance Audits and Readiness Evaluations. From 1989 - 2005 he worked for MAPP producing the annual MAPP Operating and Planning Stability model, overseeing the production of the MAPP Operating and Planning Power Flow models, and was responsible for maintaining MAPP's Model Building Process. He also conducted transient, voltage and small signal stability studies of the MAPP system as well as other special studies involving system security. He was chair of NERC's Multiregional Modeling Working Group (MMWG) and System Dynamics Database Working Group (SDDWG). Mr. Brusseau received a BSEE degree from North Dakota State University in 1989 and is a member of the IEEE Power &amp; Energy Society.</p>

<p>John Mulhausen Manager, Design and Standards</p> <p>Florida Power &amp; Light Co. 700 Universe Blvd. Juno Beach, Florida 33408</p> <p>(561) 694-5008 (561) 694-3177 Fx John.J.Mulhausen@ fpl.com</p>	<p>John Mulhausen has 34 years of experience as a Protection &amp; Control Engineer for Florida Power &amp; Light Company in several areas including transmission, generation &amp; distribution. He holds a BSEE from University of Louisiana at Lafayette. He is also a Licensed Professional Electrical Engineer in the state of Florida PE. He is a Member of IEEE and the FRCC SPCS.</p>
<p>Michael McDonald Principal Engineer System Protection Ameren Services 1901 Chouteau Ave, Code 450 P.O. Box 66149 St. Louis, Missouri 63103</p> <p>(314) 554-3551 (314) 554-3260 Fx mikemcdonald@ ameren.com</p>	<p>Michael McDonald is a Principal Engineer in the Ameren System Protection group with 29 years of experience with an emphasis in transmission relaying, system modeling, fault studies, event analysis, AC and DC trip circuit design, and relay settings. He has been an active IEEE Power System Relaying Committee member since 1987, serving on numerous working groups. He has chaired two working groups and has acted as Vice Chair for two subcommittees. He recently served as Chairman of the Line Protection Subcommittee, and is presently serving as a PSRC Officer in the role of Secretary.</p> <p>Mr. McDonald holds a BSEE from Iowa State University with emphasis in power and a MS-EMGT degree from the University of MO – Rolla. He is a registered professional engineer in Missouri and Illinois.</p>
<p>Joe T. Uchiyama Senior Electrical Engineer</p> <p>U.S. Bureau of Reclamation 86-68840 US Bureau of Reclamation Denver Federal Center Denver, Colorado 80225-0007</p> <p>(303) 445-2845 (720) 544-0130 Fx juchiyama@ do.usbr.gov</p>	<p>Joe T. Uchiyama holds a degree in Electrical Engineering Bachelor Science (EEBS) from the University of New Mexico (1980). Joe T. Uchiyama is an Electrical Engineer and has been involved in various projects in the U.S. Bureau of Reclamation including Power Plant, Pumping Plant and Substation design works since June 1980. Presently, he is involved in various projects, including the upgrading of 500 kV line protection, and 125 ~ 800 MVA generator protections. He has been a member of the WECC Protective Relay Working Group for Reclamation Representative since March 1985. He acted as a member of Criterion Drafting Team - Project WECC-0059-PRC-003-WECC-CRT-1. He also belonged to the Power System Relaying Committee (IEEE/PSRC) and has acted as a member of the Main Committee / Sub-Committee and various Working Groups for Reclamation Representative since September 1981. He was Chairman of the Generator Grounding Protection WG(ANSI/IEEE C37.101-2006) and was also Chairman of the PG Unit Protection Group (ANSI/IEEE Transaction Paper).</p> <p>He has also served as a member of the NERC Special Protection &amp; Control Subcommittee (SPCS former SPCTF). In this capacity he acted as a Working Group member of Power Plant and Transmission System Protection Coordination project. He worked as a member of the Generator Protective Relay Loadability Drafting Team in NERC Project 2010-13. He has also acted as a member on the U.S. Bureau of Reclamation/Federal as an Electrical Engineer since June 1980.</p>

<p>Richard P. Quest Engineer</p> <p>Xcel Energy, Inc. 414 Nicollet Mall Minneapolis, Minnesota 55401</p> <p>(612) 330-7787 (612) 573-9261 Fx richard.p.quest@ xcelenergy.com</p>	<p>Richard P. Quest holds a BSEE from the University of Minnesota (1979). He has 31 years of experience working in the electric utility field, including 28 years specializing in protective relaying.</p> <p>He is a member of IEEE and the MRO Protective Relaying Subcommittee.</p>
<p>Eric Udren Executive Advisor</p> <p>Quanta Technology 1395 Terrace Drive Pittsburgh, Pennsylvania 15228-1636</p> <p>(919) 334-3070 eudren@ quanta-technology.com</p>	<p>Eric A. Udren is Executive Advisor with Quanta Technology, LLC, and has more than 42 years of experience in design and application of protective relaying, control, and communications systems. He received his BSEE from Michigan State University in 1969, MSEE degree from New Jersey Institute of Technology in 1981, and the Certificate of Post-Graduate Study from Cambridge University (UK) in 1978. He developed software for the world's first computer-based relaying system, and led technical development of the world's first LAN-based integrated substation protection and control system. He has held positions in protective relaying application, and in relay design management at Westinghouse, ABB, Eaton Electrical (Cutler-Hammer), and KEMA. Since the beginning of his consulting career in 2004, he developed the technical strategy for some of the most progressive utility LAN-based substation protection and control upgrading programs using IEC 61850 and other data communications, including technical design for utility enterprise integration of substation information. In his current work, he develops substation protection and control upgrading strategies and designs for major North American utilities, application and design with IEC 61850 data communications, relay application research and design, new data communications applications, special protection systems, wide area monitoring and control with synchrophasor measurements, and condition monitoring of power apparatus.</p> <p>Mr. Udren is a Fellow of IEEE, Member of the IEEE Power System Relaying Committee (PSRC), Vice Chair of the Relaying Communications Subcommittee, and Chair of two standards development working groups. On two occasions, in 2001 and 2006, he received the PSRC Distinguished Service Award. He serves as Technical Advisor to the US National Committee of IEC for TC 95, Measuring Relays. He also serves as a US Delegate to IEC TC 57 Working Group 10 responsible for development of IEC 61850. Eric serves on the NERC System Protection and Control Subcommittee (SPCS), and the NERC Protection System Maintenance and Test Standard Drafting Team (PRC-005-2). He has written and presented over 90 technical papers and chapters of books on relaying topics, and has taught courses on protection, control, communications, integration, and IEC 61850. He holds 8 patents on relaying and power-system communications.</p>

<p>Jim Ingleson Senior Power System Engineer</p> <p>RLC Engineering LLC 402 Bond Road Altamont, NY 12009</p> <p>518-861-6269 jim.ingleson@rlc-eng.com</p>	<p>Jim Ingleson is a Senior Power System Engineer with RLC Engineering LLC, specializing in system protection. Previously Jim has worked for General Electric Company, New York Power Pool, and New York ISO. He received the 2007 IEEE PES Distinguished Service Award for career service to the Power System Relay Committee, and is a past Chair of the NPCC Task Force on System Protection. Jim holds B.S. and M. Eng. Degrees in Electric Power Engineering from RPI. His years of service to the electric utility industry total over 42. Mr. Ingleson is a licensed Professional Engineer in MA and NY, and a Senior Member of the IEEE.</p>
<p>Philip B. Winston Chief Engineer</p> <p>Southern Company Transmission 62 Like Mirror Road Bin # 50061 Forest Park, Georgia 30297</p> <p>(404) 608-5989 pbwinsto@southernco.com</p>	<p>Philip Winston is presently the Chief Engineer, Protection and Control for Southern Company Transmission. Previously he was the Manager, Protection and Control Applications with Georgia Power Company for 20 years. With over 37 years experience in Protection, Operations, and Engineering, he is active in Southern Company standardization efforts as well as being involved in regional and national organizations responsible for utility standards and disturbance analysis. He is the past Chairman of the IEEE/ Power System Relaying Committee and past Chair of the PSRC Systems Protection and the Line Protection Subcommittees. He serves on the NERC SPCS, and several NERC Standard Drafting Teams. He holds a BSEE from Clemson University, a MSEE from Georgia Tech, and is a registered Professional Engineer in the State of Georgia.</p>
<p>Robert W. Cummings Director of System Analysis and Reliability Initiatives NERC Staff Liaison &amp; Subject Matter Expert</p> <p>North American Electric Reliability Corporation 116-390 Village Boulevard Princeton, New Jersey 08540-5721</p> <p>(609) 947-0103 (505) 508-1198 bob.cummings@nerc.net</p>	<p>Mr. Cummings joined NERC in 1996 and has extensive experience in the industry in system planning, operations engineering, and wide area planning. He holds a Bachelor of Science Degree in Power System Engineering from Worcester Polytechnic Institute and is an IEEE Senior Member.</p> <p>His geographically diverse experience includes Central Vermont Public Service Corporation in System Planning (generation and transmission), Public Service Company of New Mexico, and the East Central Reliability Coordination Agreement (ECAR). Mr. Cummings was the "father" of power interchange transaction "tagging" and the Interchange Distribution Calculator, which shows loading contributions on key system transmission interfaces, or "flowgates," for the Eastern Interconnection. He was intimately involved in the investigation team of the 2003 blackout as a team leader with responsibilities in the sequence of events development, modeling and studies (powerflow and dynamics analysis), and transmission/generation performance areas. He directed the NERC Event Analysis and Information Exchange program for five years. Mr. Cummings was instrumental in the founding of the NERC System Protection and Controls Task Force, now the System Protection and Control Subcommittee (SPCS), acting as the staff coordinator from 2004 through 2009.</p> <p>Mr. Cummings is the staff coordinator for the NERC Transmission Issues Subcommittee and is the technical advocate in the North American Synchro-Phasor Initiative. He is also the technical director of the NERC System Protection and Control Performance Improvement Initiative, the Modeling Improvements Initiative, and the Frequency Response Improvement Initiative.</p>

<p>Philip J Tatro Senior Performance and Analysis Engineer NERC Staff Advisor &amp; Subject Matter Expert</p> <p>North American Electric Reliability Corporation 116-390 Village Boulevard Princeton, New Jersey 08540-5721</p> <p>(609) 452-8060 phil.tatro@nerc.net</p>	<p>Phil Tatro is the NERC staff coordinator for the System Protection Control Subcommittee (SPCS) and has 25 years of industry experience. Prior to joining NERC he worked for 23 years at New England Electric System and National Grid. His experience there included assignments in Protection and Control Engineering, the Québec-New England 2000 MW HVdc interconnection, development of independent transmission projects, and Transmission Planning. During this time he was a member of several NERC, NPCC and New England Power Pool committees, task forces, and standard drafting teams. Phil chaired the NPCC SS-38 Working Group on Inter-Area Dynamic Analysis and the NERC Major System Disturbance Task Force responsible for dynamic simulation of the August 14, 2003 blackout. He received his Bachelor of Science degree, magna cum laude, from Rensselaer Polytechnic Institute in Troy, NY in 1985 and his Master of Engineering degree, also from Rensselaer Polytechnic Institute, in 1986. He is a registered professional engineer in the Commonwealth of Massachusetts and is a member of the IEEE Power &amp; Energy Society.</p>
<p>Darrel Richardson Standards Development Coordinator</p> <p>North American Electric Reliability Corporation 116-390 Village Boulevard Princeton, New Jersey 08540-5721</p> <p>(609) 452-8060 (609) 452-9550 Fx darrel.richardson@nerc. net</p>	<p>Darrel Richardson joined the NERC staff as a Standards Development Coordinator in 2007. In this role he facilitates and provides guidance to drafting teams in the development of technically excellent and timely Reliability Standards for the reliable operation and planning of the bulk power system.</p> <p>Darrel has extensive experience in the utility industry having spent over 37 years with Illinois Power Company. In his tenure at Illinois Power he held several different positions in the Engineering, Planning and Operations groups. Among the position he has held are Transmission Coordinator, Generation Coordinator, Manager Wholesale Marketing, Manager Wholesale Marketing and Trading, Director Generation Control and Manager Compliance.</p>