

Implementation Plan for PRC-023-2—: Transmission Relay Loadability

1. Standards Involved

- PRC-023-2 —Transmission Relay Loadability

2. Prerequisite Approvals

There are no other reliability standards or Standard Authorization Requests (SARs), in progress or approved, that must be implemented before the Transmission Relay Loadability standard can be implemented.

3. Proposed Effective Dates

3.1. Requirement R1

~~3.1.1. For transmission lines operating at 200 kV and above and transformers with low voltage terminals connected at 200 kV and above~~

~~3.1.1.1. The first day effective dates of the first calendar quarter after applicable regulatory approvals, or requirements in those jurisdictions where no regulatory approval is required, the first calendar quarter after Board of Trustees adoption, except as noted below.~~

~~3.1.1.1.1. For the addition to Requirement R1, criterion 10, to set transformer fault protection relays and transmission line relays on transmission lines terminated only with a transformer such that the protection settings do not expose the transformer to fault level and duration that exceeds its mechanical withstand capability, the first day of the first calendar quarter 12 months after applicable regulatory approvals, or in those jurisdictions where no regulatory approval is required, the first day of the first calendar quarter 12 months after Board of Trustees adoption.~~

~~3.1.1.1.2. For supervisory elements as described in PRC-023-2 —Attachment A, Section 1.6, the first day of the first calendar quarter 24 months after applicable regulatory approvals, or in those jurisdictions where regulatory approval is not required, the first day of the first calendar quarter 24 months after Board of Trustees adoption.~~

~~For switch-on-to-fault schemes as described in PRC-023-2 —Attachment A, Section 1.3, the later of the first day of the first calendar quarter after applicable regulatory approvals of PRC-023-2 or the first day of the first calendar quarter 39 months standard corresponding to the applicable Functional Entities and circuits are summarized in the following applicable regulatory approvals of PRC-023-1; or in those jurisdictions where no regulatory approval is required, the later of the first day of the first calendar quarter after Board of Trustees adoption of PRC-023-2 or July 1, 2011 table:~~

~~3.1.2. For circuits identified by the Planning Coordinator pursuant to Requirement R6~~

~~3.1.2.1. The later of the first day of the first calendar quarter 39 months following notification by the Planning Coordinator of a circuit's inclusion on a list of circuits subject to PRC-023-2 per application of Attachment B, or the first day of the first calendar year in which any criterion in Attachment B applies.~~

3.2. Requirements R2 and R3

3.2.1. For transmission lines operating at 200 kV and above and transformers with low voltage terminals connected at 200 kV and above:

3.2.1.1. The first day of the first calendar quarter after applicable regulatory approvals, or in those jurisdictions where no regulatory approval is required, the first day of the first calendar quarter after Board of Trustees adoption.

3.2.2. For circuits identified by the Planning Coordinator pursuant to Requirement R6

3.2.2.1. The later of the first day of the first calendar quarter 39 months following notification by the Planning Coordinator of a circuit's inclusion on a list of circuits subject to PRC-023-2 per application of Attachment B, or the first day of the first calendar year in which any criterion in Attachment B applies.

3.3. Requirements R4 and R5

The first day of the first calendar quarter six months after applicable regulatory approvals, or in those jurisdictions where no regulatory approval is required, the first day of the first calendar quarter six months after Board of Trustees adoption

3.4. Requirement R6

The first day of the first calendar quarter 18 months after applicable regulatory approvals, or in those jurisdictions where no regulatory approval is required, the first day of the first calendar quarter 18 months after Board of Trustees adoption

Requirement	Applicability	Effective Date	
		Jurisdictions where Regulatory Approval is Required	Jurisdictions where No Regulatory Approval is Required
R1	Each Transmission Owner, Generator Owner, and Distribution Provider with transmission lines operating at 200 kV and above and transformers with low voltage terminals connected at 200 kV and above, except as noted below.	First day of the first calendar quarter, after applicable regulatory approvals	First calendar quarter after Board of Trustees adoption
	<ul style="list-style-type: none"> For Requirement R1, criterion 10.1, to set transformer fault protection relays on transmission lines terminated only with a transformer such that the protection settings do not expose the transformer to fault level and duration that exceeds its mechanical withstand capability 	First day of the first calendar quarter 12 months after applicable regulatory approvals	First day of the first calendar quarter 12 months after Board of Trustees adoption
	<ul style="list-style-type: none"> For supervisory elements as described in PRC-023-2 - Attachment A, Section 1.6 	First day of the first calendar quarter 24 months after applicable regulatory approvals	First day of the first calendar quarter 24 months after Board of Trustees adoption
	<ul style="list-style-type: none"> For switch-on-to-fault schemes as described in PRC-023-2 - Attachment A, Section 1.3 	Later of the first day of the first calendar quarter after	Later of the first day of the first calendar quarter after Board of

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<u>Requirement</u>	<u>Applicability</u>	<u>Effective Date</u>	
		<u>Jurisdictions where Regulatory Approval is Required</u>	<u>Jurisdictions where No Regulatory Approval is Required</u>
		<u>applicable regulatory approvals of PRC-023-2 or the first day of the first calendar quarter 39 months following applicable regulatory approvals of PRC-023-1 (October 1, 2013)</u>	<u>Trustees adoption of PRC-023-2 or July 1, 2011¹</u>
	<u>Each Transmission Owner, Generator Owner, and Distribution Provider with circuits identified by the Planning Coordinator pursuant to Requirement R6</u>	<u>Later of the first day of the first calendar quarter 39 months following notification by the Planning Coordinator of a circuit's inclusion on a list of circuits subject to PRC-023-2 per application of Attachment B, or the first day of the first calendar year in which any criterion in Attachment B applies, unless the Planning Coordinator removes the circuit from the list before the applicable effective date</u>	<u>Later of the first day of the first calendar quarter 39 months following notification by the Planning Coordinator of a circuit's inclusion on a list of circuits subject to PRC-023-2 per application of Attachment B, or the first day of the first calendar year in which any criterion in Attachment B applies, unless the Planning Coordinator removes the circuit from the list before the applicable effective date</u>
	<u>Each Transmission Owner, Generator Owner, and Distribution Provider with transmission lines operating at 200 kV and above and transformers with low voltage terminals connected at 200 kV and above</u>	<u>First day of the first calendar quarter after applicable regulatory approvals</u>	<u>First day of the first calendar quarter after Board of Trustees adoption</u>
R2 and R3	<u>Each Transmission Owner, Generator Owner, and Distribution Provider with circuits identified by the Planning Coordinator pursuant to Requirement R6</u>	<u>Later of the first day of the first calendar quarter 39 months following notification by the Planning Coordinator of a</u>	<u>Later of the first day of the first calendar quarter 39 months following notification by the Planning Coordinator of a</u>

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¹ July 1, 2011 is the first day of the first calendar quarter 39 months following the Board of Trustees February 12, 2008 approval of PRC-023-1.

<u>Requirement</u>	<u>Applicability</u>	<u>Effective Date</u>	
		<u>Jurisdictions where Regulatory Approval is Required</u>	<u>Jurisdictions where No Regulatory Approval is Required</u>
		<u>circuit's inclusion on a list of circuits subject to PRC-023-2 per application of Attachment B, or the first day of the first calendar year in which any criterion in Attachment B applies, unless the Planning Coordinator removes the circuit from the list before the applicable effective date</u>	<u>circuit's inclusion on a list of circuits subject to PRC-023-2 per application of Attachment B, or the first day of the first calendar year in which any criterion in Attachment B applies, unless the Planning Coordinator removes the circuit from the list before the applicable effective date</u>
<u>R4</u>	<u>Each Transmission Owner, Generator Owner, and Distribution Provider that chooses to use Requirement R1 criterion 2 as the basis for verifying transmission line relay loadability.</u>	<u>First day of the first calendar quarter six months after applicable regulatory approvals</u>	<u>First day of the first calendar quarter six months after Board of Trustees adoption</u>
<u>R5</u>	<u>Each Transmission Owner, Generator Owner, and Distribution Provider that sets transmission line relays according to Requirement R1 criterion 12</u>	<u>First day of the first calendar quarter six months after applicable regulatory approvals</u>	<u>First day of the first calendar quarter six months after Board of Trustees adoption</u>
<u>R6</u>	<u>Each Planning Coordinator shall conduct an assessment by applying the criteria in Attachment B to determine the circuits in its Planning Coordinator area for which Transmission Owners, Generator Owners, and Distribution Providers must comply with Requirements R1 through R5</u>	<u>First day of the first calendar quarter 18 months after applicable regulatory approvals</u>	<u>First day of the first calendar quarter 18 months after Board of Trustees adoption</u>

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4. Applicability

4.1. Requirements within the proposed standard apply to the following:

4.1.1. Functional Entity

4.1.1.1. Transmission Owners with load-responsive phase protection systems as described in PRC-023-2 - Attachment A, applied to circuits defined in 4.2.1 (Circuits Subject to Requirements R1 – R5).

- 4.1.1.2. Generator Owners with load-responsive phase protection systems as described in PRC-023-2 - Attachment A, applied to circuits defined in 4.2.1 (Circuits Subject to Requirements R1 – R5).
- 4.1.1.3. Distribution Providers with load-responsive phase protection systems as described in PRC-023-2 - Attachment A, applied to circuits defined in 4.2.1(Circuits Subject to Requirements R1 – R5), provided those circuits have bi-directional flow capabilities.
- 4.1.1.4. Planning Coordinators

4.1.2. Circuits

4.1.2.1. Circuits Subject to Requirements R1 – R5

- 4.1.2.1.1. Transmission lines operated at 200 kV and above
- 4.1.2.1.2. Transmission lines operated at 100 kV to 200 kV selected by the Planning Coordinator
- 4.1.2.1.3. Transmission lines operated below 100 kV that are included on a critical facilities list defined by the Regional Entity² and selected by the Planning Coordinator in accordance with R6
- 4.1.2.1.4. Transformers with low voltage terminals connected at 200 kV and above
- 4.1.2.1.5. Transformers with low voltage terminals connected at 100 kV to 200 kV selected by the Planning Coordinator
- 4.1.2.1.6. Transformers with low voltage terminals connected below 100 kV that are included on a critical facilities list defined by the Regional Entity and selected by the Planning Coordinator

4.1.2.2. Circuits Subject to Requirement R6

- 4.1.2.2.1. Transmission lines operated at 100 kV to 200 kV and transformers with low voltage terminals connected at 100 kV to 200 kV
- 4.1.2.2.2. Transmission lines operated below 100 kV and transformers with low voltage terminals connected below 100 kV that are included on a critical facilities list defined by the Regional Entity

4.2. Other entities may be recipients of data as described in this standard, but have no requirements placed upon them

5. Implementation Dates

For circuits already identified and subject to the requirements in PRC-023-1, the existing implementation dates will remain in effect.

6. Retired Standards

Requirement R1 of PRC-023-1 is retired the first day of the first calendar quarter after applicable regulatory approvals, or in those jurisdictions where no regulatory approval is required, the first calendar quarter after Board of Trustees adoption.

Requirement R2 of PRC-023-1 is retired the first day of the first calendar quarter after applicable regulatory approvals, or in those jurisdictions where no regulatory approval is required, the first day of the first calendar quarter after Board of Trustees adoption.

² If the Regional Entity has developed such a list.

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Requirement R3 of PRC-023-1 is retired the first day of the first calendar quarter 18 months after applicable regulatory approvals, or in those jurisdictions where no regulatory approval is required, the first day of the first calendar quarter 18 months after Board of Trustees adoption.

When all requirements of PRC-023-2 become effective in all jurisdictions as specified above, PRC-023-1 — Transmission Relay Loadability will be retired.