

Unofficial Comment Form for Relay Loadability Order (No. 733) (Project 2010-13)

Please **DO NOT** use this form. Please use the electronic form located at the link below to submit comments on the proposed standard, PRC-023-2 and on the associated SAR. The electronic comment form must be completed **by September 19, 2010**.

<https://www.nerc.net/nercsurvey/Survey.aspx?s=c64a2b0a1f9d4e98aef8640932516830>

If you have questions please contact Stephanie Monzon at Stephanie.monzon@nerc.net or by telephone at [610-608-8084

Project 2010-13: Relay Loadability Order (RLO SDT) – PRC-023-2

Background Information

NERC Standard PRC-023-1 – Transmission Relay Loadability was approved by FERC as mandatory and enforceable in March 2010, with direction that NERC make a number of changes.

The Standard Drafting Team has made changes to PRC-023 to address the following directives from Order 733

- p. 60 . . . modify PRC-023-1 to apply an “add in” approach to sub-100 kV facilities that are owned or operated by currently-Registered Entities or entities that become Registered Entities in the future, and are associated with a facility that is included on a critical facilities list defined by the Regional Entity.
- p. 186 . . . require that transmission owners, generator owners, and distribution providers give their transmission operators a list of transmission facilities that implement sub-requirement R1.2.
- p. 203 . . . modify sub-requirement R1.10 so that it requires entities to verify that the limiting piece of equipment is capable of sustaining the anticipated overload for the longest clearing time associated with the fault. • p. 224 . . . make available for review to users, owners and operators of the Bulk-Power System, by request, a list of those facilities that have protective relays
- p. 237 . . . modify the Reliability Standard to add the Regional Entity to the list of entities that receive the critical facilities list. [sub-requirement R3.3]
- p. 244 . . . include section 2 of Attachment A in the modified Reliability Standard as an additional Requirement with the appropriate violation risk factor and violation severity level.
- p. 264 . . . revise section 1 of Attachment A to include supervising relay elements on the list of relays and protection systems that are specifically subject to the Reliability Standard.
- p. 283 . . . modify the Reliability Standard to include an implementation plan for sub-100 kV facilities.
- p. 284 . . . remove the exceptions footnote from the “Effective Dates” section.

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However, the directive below is not yet addressed, even though it is referenced within the draft standard text. It will be included in a subsequent posting of this draft standard.

- p. 69 . . . modify Requirement R3 of the Reliability Standard to specify the test that planning coordinators must use to determine whether a sub-200 kV facility is critical to the reliability of the Bulk-Power System.

To expedite the project to address the directives from FERC Order No. 733, the Standard Drafting Team is posting the draft modifications to PRC-023-1 for an informal comment period.

Please note that the posting of PRC-023-2 is an **INFORMAL** posting.

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1. The Applicability Section (4.1.2 and 4.1.4) and Requirement R5 (previously Requirement R3) have been modified to address the directive in Paragraph 60 of Order no. 733. Do you agree that this is an acceptable and effective method of meeting this directive? If not, please explain.

Yes

No

Comments: However, this response is conditional depending on whether the criteria that will be established within Attachment B (see R5.1) are reasonable and apply to properly qualified facilities below 200 kV.

2. Requirement R1 has been modified to address the directive in Paragraph 244 of Order no. 733. Do you agree that this is an acceptable and effective method of meeting this directive? If not, please explain.

Yes

No

Comments:

3. Requirement R1, section 10 has been modified to address the directive in Paragraph 203 of Order no. 733. Do you agree that this is an acceptable and effective method of meeting this directive? If not, please explain.

Yes

No

Comments: The word change meets the strict interpretation of the directive, but it is not necessarily improving the reliability of the system. Faults are cleared in cycles and transformer damage curves do not start until at least one second.

4. Requirement R3 has been added to address the directive in Paragraph 186 of Order no. 733. Do you agree that this is an acceptable and effective method of meeting this directive? If not, please explain.

Yes

No

Comments:

5. Requirement R4 has been added to address the directive in Paragraph 224 of Order no. 733. Do you agree that this is an acceptable and effective method of meeting this directive? If not, please explain.

Yes

No

Comments: While achievable, this will not come without effort and does not necessarily improve the reliability of the BES commensurate with the compliance burden.

6. Requirement R5 and part 5.1 (previously Requirement R3 and part 3.1) have been modified to establish the framework to address the directive in Paragraph 69 of Order no. 733, although the criteria itself (which will be Attachment B) is still being developed. Do you agree that this is an acceptable and effective method of meeting this directive considering that Requirement R5 is establishing the construct to insert the criteria at a future time in the form of Attachment B? If not, please explain.

Yes

No

Comments: As noted in Q1 above, a response would be conditional and depend on whether the criteria that will be established within Attachment B (see R5.1) are reasonable and apply to properly qualified facilities below 200 kV.

In addition, the R5 requirement should include wording that limits the scope of the transmission facilities (line and transformer circuits) to be evaluated to only those transmission facilities that can be tripped by the relay settings subject to requirement R1.

Requirement R5 should also qualify that only the transmission facilities that are "known" to be associated with the relay settings subject to requirement R1 need to be evaluated. If the SDT wants to better assure that the Planning Coordinator knows about all of the pertinent transmission facilities, then they should add a requirement that obligates Transmission Owners, Generator Owners, and Distribution Providers to provide the Planning Coordinator with a list of the transmission facilities that are associated with the relay setting subject to requirement R1.

7. Attachment A has been modified to address the directive in Paragraph 264 of Order no. 733. Do you agree that this is an acceptable and effective method of meeting this directive? If not, please explain.

Yes

No

Comments: In Order 733, the Commission cites in footnote 186 (p. 161) the definitions of dependability and security, two components of reliability for protective relays. The Commission did not recognize that the two tend to be mutually exclusive. Raising dependability (making sure breakers trip during a fault) can sacrifice some degree of security (tripping more than is needed).

Historically, protection engineers have been biased toward dependability to ensure the safety of people and equipment. The exclusions allow that to happen. These are contingency scenarios where protective schemes are compromised. For a second contingency, the dependability is at risk if fast tripping is not employed.

By removing the exclusion, reliability could be negatively jeopardized. For example, an operational decision to open breakers will be needed for loss of potential. The corollary would be leaving the element in service with fast tripping enabled for a fault until the loss of potential condition can be diagnosed and corrected.

8. Do you agree that the SDT has addressed the remaining directives: Paragraph 284 to remove the footnote and Paragraph 283 to modify the implementation plan for sub-100 kV facilities (by revising the Effective Date section of the standard)?

Yes

No

Comments:

Questions 9-13 relate to the SAR

9. Do you agree that the scope of the proposed standards action addresses the directive or directives?

Yes

No

Comments: It addresses the directives per the letter of the order; however, it is not necessarily improving reliability.

10. Can you identify an equally efficient and effective method of achieving the reliability intent of the directive or directives?

Yes

No

Comments: On the topic of 'adding in' - listing and evaluating the transmission facilities below 200 kV, we propose the inclusion of qualifications that prevent the consideration and evaluation of irrelevant facilities (e.g. facilities that are not tripped by the applicable relay settings).

11. Do you agree with the scope of the proposed standards action?

Yes

No

Comments: We agree that the topics of generator relay loadability and power swing protective relaying should be referred to in other separate standards. While we acknowledge that it is in everyone's best interest to respond to the FERC directives, there are numerous technical flaws that need to be resolved in their request. Forming a team and spending considerable resources will not gain industry acceptance to these directives.

12. Are you aware of any regional variances that we should consider with this SAR?

Yes

No

Comments:

13. Are you aware of any associated business practices that we should consider with this SAR?

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Yes

No

Comments: