Unofficial Comment Form for 1st Draft of PRC-027-1: Protection System Coordination for Performance During Faults

Project 2007-06

Please DO NOT use this form to submit comments on the 1st draft of the standard for Protection System Coordination for Performance During Faults. Comments must be submitted by July 5, 2012. If you have questions please contact Al McMeekin at al.mcmeekin@nerc.net or by telephone at 803-530-1963. Please submit comments here.


Background Information:

The Project 2007-06 – System Protection Coordination Standard Drafting Team (SPC SDT) posted an initial draft of the Standard PRC-001-2 on September 11, 2009 for comments. In that draft, the SPC SDT attempted to address the planning and non-operational issues identified in the assessment of PRC-001-1 performed by the NERC System Protection and Control Task Force (SPCTF) as well as the operating time frame issues identified in FERC Order 693. These operating time frame requirements involved detecting Protection System failures, informing operators and taking quick corrective actions; consequently, the SPC SDT transferred the Order 693 directives associated with Requirements R2, R5 and R6 to Project 2007-03 Real-time Operations for inclusion in the revisions of the appropriate operating standards associated within that project. Additionally, the SPC SDT determined that Requirement R1 in PRC-001-1 (a requirement for the Transmission Operator, Balancing Authority and Generator Operator to “be familiar with the purpose and limitations of protection system schemes applied in its area”) is unrelated to coordination of protection systems and belongs in another project. The two remaining requirements, Requirements R3 and R4 of PRC-001-1 address the coordination of new and existing protective systems. These aspects of coordination are incorporated in the proposed standard PRC-027-1 Protection System Coordination for Performance during Faults.

The SPC SDT responded to the comments from the initial posting of PRC-001-2 and incorporated pertinent suggestions into the second draft of the standard in the first quarter of 2010. This second draft went through a NERC quality review in December 2010, which resulted in substantial changes to the standard. After informal consultations with industry stakeholders, as well as NERC and FERC staffs, the drafting team members decided to focus their knowledge and expertise on developing a new results-based standard with the stated purpose completely within the scope of the original SAR: “To coordinate Protection Systems for Interconnected Facilities, such that those Protection Systems
remove from service only those Elements required to isolate Faults, while meeting the system performance specified within requirements established in other approved NERC Reliability Standards.”

The SPC SDT is presenting the first draft of PRC-027-1 for stakeholder review and comment.
You do not have to answer all questions. Enter All Comments in Simple Text Format.

Insert a “check” mark in the appropriate boxes by double-clicking the gray areas.

1. The SDT established the following Purpose for this standard: “To coordinate Protection Systems for Interconnected Facilities, such that those Protection Systems remove from service only those Elements required to isolate Faults, while meeting the system performance specified within requirements established in other approved NERC Reliability Standards.”

Do you agree with this Purpose? If not, please provide specific suggestions for changes to the purpose in the comment area.

☐ Yes
☐ No

Comments:

2. The SDT assigned the Applicability of PRC-027-1 to Transmission Owners, Generator Owners and Distribution Providers that own the Protection Systems applied at the Interconnected Facilities that require coordination for isolating generation and Transmission Faults. Are you aware of other functional entities that should be included in the Applicability? If so, please provide specific suggestions in the comment area and the reason for including those functional entities.

☐ Yes
☒ No

Comments: From a reliability perspective, the Applicability Section of PRC-027-1 should not include the Distribution Provider because the TO is responsible of coordination of the protection with the DP.

3. In Requirement R1, the SDT allowed a responsible entity 36 months to have a documented Protection System Study completed for each Interconnected Facility if the responsible entity does not already have a Protection System Study for that Interconnected Facility performed on or subsequent to June 18, 2007 (the effective date of PRC-001-1). Do you agree with this time frame? If not, please provide specific suggestions for change in the comment area.

☐ Yes
☐ No

Comments:

4. In Requirement R2, the SDT established a +/- 10 % change in an Interconnected Facility’s Fault current value as a criterion for notifying interconnected entities to give the interconnected entity a “heads up” that a review of the existing documented Protection System Study may be warranted.
Do you agree with the +/- 10 % Fault current threshold for initiating this review? If not, please provide an alternative means along with a technical justification for determining a threshold.

☐ Yes
☒ No

Comments: Agreed that a change in fault current is a method to trigger a coordination study, but a 15% threshold would be more efficient (+/- 15%).

Clarify where the fault is to be applied and where the deviation is to be observed. One possibility is to apply the fault at a bus at one end of the tie and then determine the deviation in the current in each element connected to that bus.

5. In Requirement R3, the SDT included a list of proposed changes that impact the coordination of Protection Systems and would initiate a need to inform other entities. Do you agree that this is an appropriate and inclusive list? If not, please provide specific suggestions for additions or deletions with your reasoning(s) in the comment area.

☐ Yes
☒ No

Comments: DP must be excluded from R3. See the response to Question 2.

6. In Requirement R4, the SDT required that agreement must be reached prior to implementation of proposed Protection System changes except under the conditions identified in Requirement 3, Part 3.3. Do you agree with this need? If not, please specify reasons in the comment area.

☒ Yes
☐ No

Comments: What happens when consensus is not reached between two parties? The TO should have the responsibility for coordination.

7. In Requirement R4, the SDT established a 90 day time frame for responding to a request for agreement with a Protection System Study. Do you agree with this time frame? If not, please provide specific suggestions with your reasoning(s) in the comment area.

☒ Yes
☐ No

Comments: For studies of an entire system or all of its interconnections, those persons doing the study should only be responsible for reviewing the study results for those interconnections in which they participate. The wording in the text demands that the results be agreed with. The text
should be reworded to require a response (not necessarily agreement) within 90 days and only pertain to the portion of the study applicable to interconnections participated in.

8. The team included VRFs, VSLs, and Time Horizons with this posting. Do you agree with the assignments? If not, please provide specific suggestions for change.

☐ Yes
☐ No

Comments:

9. If you have any other comments that you have NOT provided in response to the above questions, please provide them here. (Please do not repeat comments that you provided elsewhere.)

Comments: 1. Referring to the Example Process on page 22, it should not be the responsibility of Entity B to propose revisions. It should be the responsibility of the Entity in the better position to propose a revision to propose the revision. There needs to be flexibility as to who is obliged to come up with a revision.

2. Regarding Fig. 2 and Fig. 5 in the Application Guidelines, it is important that the expertise of each entity involved in an interconnection be used to ensure that there are no coordination issues. For example, Generator Owners and Transmission Owners.

3. Application Guidelines Fig. 3 requires the TO to verify that the DP's and the GO's protection systems coordinate with the TO's, even though the GO doesn’t connect directly to the TO. It should be the DP that checks coordination of the GO with the DP for faults on the transmission side of the DP's substation transformer, and the TO that checks coordination of the DP's transmission protection with the TO. If all of the transmission protection is back at the GO (in other words the DP has installed no transmission protection at its sub) then to do as this app guide suggests the TO will require an accurate short circuit model of the DP's system between the GO and the TO. It would require that the DP keep the TO continuously appraised of changes to the DP’s system that impact the short circuit representation. Considering the proliferation of distributed generation being interconnected to distribution systems the burden should be on the DP not on the TO supplying the DP to verify coordination.

The scope of the text "....generator protection systems...." should be narrowed so a TO or DP is not responsible for the coordination of devices it doesn’t own, maintain or set.