

Meeting Notes

Project 2010-13.2 Phase 2 of Relay Loadability: Generation Standard Drafting Team

December 11-14, 2012

NERC
Atlanta, GA

Administrative

1. Introductions

The meeting was brought to order by Charlie Rogers, chair, at 8:10 a.m. ET, Tuesday, December 11, 2012. The chair recognized the host of the in-person meeting, NERC and NERC staff Mr. Barfield, for their hospitality and use of the facilities. Remote attendance was being hosted via a ReadyTalk web-based conference call. Mr. Barfield provided housekeeping and logistic items to the attendees. The chair recommended the team work on the following items using the order as the level of priority.

- Discuss connection with PRC-023 (Previous action item)
- Discuss coordination between PRC-024
- Complete response to comments
- Prepare standard for posting
- Complete webinar slides
- Complete Guidelines and Technical Basis
- Prepare the Issues and Directives for posting
- Prepare the VSL Justification
- Prepare the RSAW

Introductions were made and those in attendance were:

Name	Company	Member/ Observer	In-person (IP) or Conference Call/Web (W)			
			12/11	12/12	12/13	12/14
Charles Rogers (Chair)	Consumers Electric	Member	IP	IP	IP	IP
Jeff Billo	ERCOT	Member	-	IP	IP	IP
S. Bryan Burch	Southern Company	Member	IP	IP	IP	IP
Steven Hataway	Florida Power and Light Company	Member	W	W	W	W
Jonathan Hayes	Southwest Power Pool	Member	IP	IP	-	IP
Mike Jensen	Pacific Gas and Electric Company	Member	W	W	-	W
Xiaodong Sun	Ontario Power Generation Inc.	Member	IP	IP	IP	IP
Sudhir Thakur	Exelon Generation	Member	IP	IP	IP	IP
Joe T. Uchiyama	U.S. Bureau of Reclamation	Member	IP	IP	IP	IP
Benson Vuong	Salt River Project	Member	W	W	W	W
David Youngblood	Luminant	Member	IP	IP	IP	IP
Syed Ahmad	Federal Energy Regulatory Commission	Observer	IP	IP	IP	W
Ken Hubona	Federal Energy Regulatory Commission	Observer	W	W	W	-
Scott Barfield- McGinnis (Standard Developer)	North American Electric Reliability Corporation	Observer	IP	IP	IP	IP
Erika Chanzas (Standard Developer)	North American Electric Reliability Corporation-	Observer	IP	IP	-	-
Barbara Nutter (Standard Developer)	North American Electric Reliability Corporation	Observer	IP	-	-	-

Name	Company	Member/ Observer	In-person (IP) or Conference Call/Web (W)			
			12/11	12/12	12/13	12/14
Phil Tatro (Technical Advisor)	North American Electric Reliability Corporation	Observer	IP	-	IP	IP
David Kral	Xcel Energy, Inc.	Observer	*	-	-	-
Philip Winston	Georgia Power Company	Observer	*	-	-	-
Stephen Crutchfield (Standard Developer)	North American Electric Reliability Corporation	Observer	*	-	-	-

* These observers joined the meeting to address an action item from the previous drafting team meeting in Phoenix, Arizona.

2. Determination of Quorum

The rule for NERC Standard Drafting Team (SDT or team) states that a quorum requires two-thirds of the voting members of the SDT. Quorum was achieved as ten of the eleven members were present the first day, ten members the second day, and nine members the third day, and ten members the fourth day.

3. NERC Antitrust Compliance Guidelines and Public Announcement

NERC Antitrust Compliance Guidelines and public announcement were reviewed by Mr. Barfield. There were no questions. The participants were reminded at the beginning of each day of the NERC Antitrust Guidelines and disclaimer.

4. Roster Updates

The Mr. Barfield noted there have been no changes to the roster.

Agenda

1. Review of meeting notes from previous meetings (Reviewed with amendments)

The team reviewed the meeting notes from the November 13-16, 2012 meeting in Phoenix. There was no discussion and there were no changes. Mr. Barfield noted that the revisions identified at the Phoenix meeting to the meeting notes from August 21-23, 2012 have been made and are in the queue for posting to the project page.

2. Open business from last meeting (Discussions – See summary of each below)

- a. Mr. Rogers – Develop VSLs and justifications – Mr. Rogers noted that he considered different approaches to Violation Severity Levels, but did not reach a conclusion to share with the team.

The team will need to consider these at this meeting in order to post draft 2 of PRC-025-1. (Complete)

- b. Mr. Tatro – Need more examples for the Guidelines and Technical Basis. The goal is to use a simulation 3.1 example and apply the data to option 1.1 and 1.2 for a single generator. Mr. Vuong and Mr. Hataway will work on 1.1 and 1.2. (Complete)
- c. Mr. Hataway – Provide the calculations of the 150% values using the nameplate and seasonal Real Power out as reported to the Planning Coordinator and Transmission Planner. (Complete)
- d. Mr. Jensen will research a manufacturer paper written by Elmo Price from ABB and distribute to the team, if located. – Mr. Jensen obtained permission for the team to use his paper. (Complete)
- e. Mr. Youngblood – Coordinate the application issues (i.e., use of voltage relays) between the draft 3 of PRC-019, draft 4 of PRC-024-1 and draft 1 of PRC-025-1 with the generator verification standard drafting team on Project 2007-09. The generator verification team will be meeting the week prior to the generator loadability team in December. (Complete)
 - i. Discussion: Mr. Youngblood communicated the issues with the generator verification SDT about the potential overlap of load-responsive protective relays within the draft PRC-024-2 standard. The generation verification chair, David Kral of Xcel, and the NERC Standard Developer, Stephen Crutchfield (member and NERC staff of Project 2007-09 as well as Phil Winston of Georgia Power (member of Project 2007-06, PRC-001 and PRC-027) called into the team meeting on Monday, December 11, 2012 at 10:00 a.m. Mr. Youngblood provided a quick synopsis of the changes the generator verification team made to the draft PRC-024-1. The generation verification team shortened the Time Duration Curve (PRC-024-1) from ten seconds in the draft 4 posting to four seconds in the proposed draft 5 yet to be posted. Mr. Rogers questioned why the load-responsive protective relays were actually included in the PRC-024-1 standard. Mr. Youngblood, also a member of the generator verification team and Mr. Rogers recommend that PRC-024-2 not address load-responsive protective relays. Mr. Youngblood raised a question about origin of the 0.85 per unit voltage used for evaluation. Mr. Tatro confirmed this was a voltage used in the August 14, 2003 Blackout Report. Mr. Winston with his limited knowledge of the team’s work also supported removing the load-responsive protective relays from PRC-024-2. Mr. Tatro noted that there is no reason for PRC-024-2 to include impedance relays because these relays operate on both voltage and current and may or may not operate for the given Time Duration Curve defined in PRC-024-2.
 - ii. Mr. Kral asked if voltage controlled overcurrent relays are also impacted by PRC-025-1. All participants on the call agreed to remove the load-responsive protective relay functions that are applied to PRC-025-1. This will include the time distance relay (21 function) and the time overcurrent voltage controlled relay (51V-C function) applicable to PRC-025-1. The generation verification participants Mr. Kral and Mr. Crutchfield will communicate the

consensus to remove the load-responsive protective relays from PRC-024-2 and include Mr. Rogers so that he can remain informed and pass information to the generator relay loadability team.

- iii. Mr. Kral inquired if changing the voltage from 0.90 per unit to 0.85 is acceptable to the PRC-025-1 team. The team agreed the 0.85 per unit voltage is acceptable.
- f. Mr. Barfield and Mr. Tatro – Provide feedback to team concerning NERC staff opinion on the potential differences in PRC-023-1 and the draft PRC-025-1. Need to review PRC-023-2 to see what has to change to remove the Generator Owner from the Applicability and report back to the team before the December 2012 meeting. (Complete)
 - i. Discussion: Mr. Tatro noted that the PRC-023 issues were discussed by NERC staff which included Mr. Barfield, Bob Cummings, and Howard Gugel. There are three issues concerning PRC-023-1.
 1. The FERC Order 733 and 733-A which stated the applicability of the Generator Owner in PRC-023-1. Basically, an entity that is a Generator Owner only is not subject to PRC-023-1. This ruling was not carried through to PRC-023-2.
 2. Requirement R1, Criterion 6 – Mr. Tatro noted that this criterion has an impact to PRC-023-1. This goes back to Notice of Proposed Rulemaking (NOPR) and Orders 733 and 733-A which led the team to have a further look at clarifying the applicability of PRC-023-1. For example, clarify PRC-023-2 to specify voltages at the “terminal” rather than just “lines.”
 3. There was discussion about adding the Transmission Owner to PRC-025-1, but it was decided that if PRC-023-2 could be revised and that PRC-025-1 had an applicability clarification the inclusion of the Transmission Owner is not necessary.
- g. Chair – Draft a Standard Authorization Request (SAR) and redline standard to the Standards Committee (SC) for its December 13, 2012 conference call. Agenda items are due by November 30, 2012. (Postponed for more discussion)
- h. Mr. Barfield – Arrange and announce an industry webinar at the December 2012 meeting to address the standard, technical issues, and obtain feedback from industry prior to initial ballot. (Complete)
- i. Mr. Barfield – Clean up consideration of comments with responses identified by the team in preparation of the December 2012 meeting in Atlanta. (Complete)
- j. Chair – Address Question 4 issues concerning the Implementation Plan. (Complete)
- k. Mr. Jensen and Mr. Vuong – Address other issues in Question 5, other comments. (Complete)
- l. Mr. Hataway and Mr. Jensen – Work on developing additional technical basis for asynchronous ratings (Option 4) during the formal comment period and initial ballot. (Complete)

- m. Team – Work on developing the additional technical basis for the margins used in each of the options found in Table 1 of the attachment. The basis may be covered in the introduction or individually in each option. (Complete)
- n. Chair and Mr. Jensen – Those members that have relationships with asynchronous generation entities are to reach out to asynchronous Generator Owners about the PRC-025-1 standard to ensure this group is sufficiently engaged in the standard’s development. (Complete)
- o. Team – Those members that have relationships with commenters are to reach out to about the PRC-025-1 standard to gain more support and better understanding of the issues concerning comments and the standard. (Complete)
- p. Mr. Jensen – Reach out to entities with asynchronous inverters to determine if their rating and/or capabilities are within the boundaries of the standard. (Complete)
- q. Mr. Barfield – Applied changes to the August Niagara meeting notes. (Complete)

3. Respond to industry stakeholder comments

The team continued with a review of the formal comments received from industry stakeholders beginning at question four where the team ended at the previous meeting in Phoenix. The response to comments was tabled the afternoon of the second day to begin preparing the webinar slides. Mr. Barfield presented a shell presentation with potential topics for discussion. The team used the remainder of the day to prepare the slides. The team completed the response to comments on the third day prior to the webinar presentation. The team conducted a dry-run in the afternoon before the 2-hour webinar at 2:00 p.m. Eastern and a brief recap at the conclusion. The last day, the team worked on finalizing changes in the standard and other related project documentation required for posting.

4. Revise draft standard

The team continued revising the draft 1 standard modified at their previous meeting in Phoenix the week of November 13, 2012. The revisions will create draft 2 for the next 45-day formal comment period posting and initial ballot. The Purpose of the standard was revised to better reflect the intent (i.e., “goal”) of the standard.

The most significant change was the Applicability of draft 2 PRC-025-1. The team inserted in section 3.1.1 the phrase “at the terminals of” to create a demarcation point of the standard. Making this change also requires a similar change to PRC-023-2 in its Applicability. To align both standards and mitigate any potential overlap in requirement, the team is proposing a supplemental SAR to revise PRC-023-2. This proposal will be presented to the SC at their January 2013 meeting for review and action. If approved, the supplemental SAR and redline of the clarifying changes will be posted contemporaneously with the draft 2 posting of PRC-025-1.

Also, section 3.2 Facilities in the Applicability section of draft 2 PRC-025-1 was amended to include an additional item 3.2.4, “Lines that radially connect a generating plant to the Transmission

system.” This addition eliminates a potential compliance gap between PRC-023-2 and the draft PRC-025-1. Including these lines address those Facilities which a Generator Owner may own, but is not registered as a Transmission Owner.

Measure M1 of draft 2 PRC-025-1 was updated to remove the numerals one and two which avoids the appearance that the standard is adding to the Requirement R1. The drafting team’s intentions were to list examples of evidence and not specifically identify two unique pieces of evidence. The measure was modified to list examples of evidence (e.g., summaries, calculations, spreadsheets, simulation reports, or setting sheets).

Attachment 1: Relay Settings received considerable attention as it is the main component of the single Requirement, R1. The text was modified slightly from the previous meeting. There was significant team discussion about whether to use decimal or alpha based options (e.g., 1.1 or 1a). The drafting team concluded the alpha notation was more desirable. Several additional options were amended to Table 1 because it was determined these options were overlooked during the Table 1 restructuring. An option to allow entities to calculate the settings for the unit auxiliary transformers (UAT) based on measured load was added. Last, the team added the applicable Table 1 options for the new Applicability condition for lines that radially connect a generating plant to the Transmission system.

The remaining changes to the standard were limited to the Guidelines and Technical Basis. Most of these changes were clarifying editorial and correction changes. The team also provided technical basis for the newly added options regarding lines that radially connect a generating plant to the Transmission system.

5. Development of questions for the comment period

The team reviewed the comment questions from the previous posting. Corrections were made to reflect the changes to the standard and to ask more direct questions regarding the issues. Additional questions were added to address the standard’s rationale, Attachment 1, Table 1, and the Implementation Plan.

6. Review of the schedule

Mr. Barfield updated the team regarding the 15-week slide in the schedule. Every effort to get the project back on schedule is paramount to not having to request a second extension from the Commission. He also updated the team on the schedule and the risks to meeting the September 30, 2013 filing deadline. The schedule was already compressed due to when the standard was approved for formal development and the extension of time that was filed. Mr. Barfield noted the schedule will be re-evaluated following the initial ballot which should be in March 2013.

7. Action items

a. Mr. Barfield and Mr. Tatro:

- i. Confer with NERC staff about cases where the Transmission Owners may still own Facilities, such as, the generator step-up transformer which would make the Transmission Owner applicable to PRC-025-1.
 - ii. Consider the need for a definition of “radial?”
 - iii. Complete the SAR for PRC-023-2 and redline to the standard.
- b. Mr. Barfield:
 - i. Complete the SAR for PRC-023-2 and redline to the standard.
 - ii. Issue a Doodle for quality review conference call for Wednesday, Thursday, or Friday following Christmas Day.
 - iii. Set the next SDT meeting for week of March 11, 2013 to respond to comments from the second formal and 45-day comment period and initial ballot.
- c. Entire SDT:
 - i. Perform a review of the Guidelines and Technical Basis by Wednesday, December 19, 2012.

8. Next steps

- a. Second formal and 45-day comment period and initial ballot in the last 10 days of the comment period
- b. Respond to comments in early March 2013

9. Future meeting(s)

Meeting locations under consideration:

- PG &E – Fresno, CA
- Luminant – Dallas, TX
- Southern Company – Birmingham, AL
- FPL – Juno Beach, FL

Tentative dates and times:

- Tuesday, March 12, 2013 | 8:00 a.m.-5:00 p.m. ET
- Wednesday, March 13, 2013 | 8:00 a.m.-5:00 p.m. ET
- Thursday, March 14, 2013 | 8:00 a.m.-noon ET

10. Adjourn

The meeting adjourned at 11:15 a.m. ET on December 14, 2012.