NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Meeting Notes
Underfrequency Load Shedding SDT — Project 2007-01

March 14, 2008 | 1–4 p.m. EDT

Administrative

a) Roll Call

David Taylor welcomed the members and guests of the standard drafting team (SDT) for Project 2007-01 Underfrequency Load Shedding (UFLS). Those members in attendance were:

- Dana Cabbell — Southern California Edison Co. (Chair)
- Jonathan Glidewell — Southern Company Transmission Co.
- Robert W. Millard — ReliabilityFirst Corporation
- Mak Nagle — Southwest Power Pool
- Robert J. O'Keefe — American Electric Power
- Philip Tatro — National Grid
- David Taylor — North American Electric Reliability Corporation
- Stephanie Monzon — North American Electric Reliability Corporation

Those members appointed to the SDT and not in attendance were:

- Paul Attaway — Georgia Transmission Corporation
- Brian Bartos — Banders Electric Cooperative
- Larry E. Brusseau — Midwest Reliability Organization
- Geral Keenan — Bonneville Power Administration
- Donal Kidney — Northeast Power Coordinating Council, Inc.
- Steven Myers — Electric Reliability Council of Texas, Inc.
- Robert Williams — Florida Municipal Power Agency
- Richard Young — American Transmission Company, LLC

Guests of the SDT attending were:

- Anthony Jablonski — ReliabilityFirst Corporation

Each team member was asked to verify the information on the UFLS roster and notify David Taylor via e-mail of any corrections that should be made.

b) NERC Antitrust Compliance Guidelines

David Taylor reviewed the NERC Antitrust Compliance Guidelines. Everyone in attendance understood and agreed to the guidelines.

1) Action Items

David Taylor reviewed the action items generated during the January 8–9, 2008 meeting:

Action Items:	Status:	Assigned To:
Dana Cabbell to contact the WECC Control Work Group to inquire as to what data they have collected relative to generator trip settings during frequency excursions and report back to the UFLS SDT.	**Remains Open — Dana has contacted the group and is awaiting a reply.**	Dana Cabbell
Dana Cabbell is to issue an e-mail to Bob Millard (Chair of the SDT for Project 2007-09) summarizing the coordination required between the UFLS standard and the work being performed in Project 2007-09 – Generator Verification relative to generator underfrequency tripping. Dana will issue the e-mail within a week of this meeting so the Generator Verification team can discuss it on their upcoming conference call.	**Completed — Dana issued the e-mail on January 9, 2008**	Dana Cabbell
David Taylor to ask Maureen Long if she can expand on the Version 0 comment on PRC-009 that "Exemptions for those with shunt reactors who don't shed load".	**Completed** Maureen provided the following reponse: Hi Dave — here are the relevant comments: Vinod Kotecha — Con Edison Company of New York CEPD Norman Mah — Con Edison Company of New York CEPD Edwin Thompson — Con Edison Rebecca Adrienne Craft — Con Edison Company of New York CEPD UVLS — Under voltage load shedding should not be a requirement for all parties. Those who have shunt reactors can meet the objective by not shedding load but by shedding shunt reactors. Flexibility in achieving the desired goal is appropriate. **The response confirms the UFLS SDT's**	David Taylor

Action Items:	Status:	Assigned To:
	thought that this comment was not relevant to UFLS.	
David Taylor to obtain approval (or denial) on the proposed numbering system for continent-wide standards supported by regional standards.	**Completed — NERC Standards Staff accepted a slightly modified version of the numbering system proposed by the UFLS SDT. The methodology is now posted on the NERC web site.**	David Taylor
David Taylor to prepare package for posting the UFLS documentation for industry comment for the team's review prior to the package being submitted to Maureen Long (NERC's Standards Process Manager) for processing.	**Completed — the package was provided to NERC Staff on or about February 27 in anticipation of the March 7 discussion.**	David Taylor
Steve Myers volunteered to work with Bob Millard to draft Violation Severity Levels for the draft UFLS standard prior to the standard being posted for industry comment.	**Completed — Steve and Bob provided the proposed VSLs on or about March 4.**	Steve Myers and Bob Millard

2) Project Schedule

David Taylor reviewed the schedule for Project 2007-01 UFLS with the SDT. The project continues to fall further behind schedule, but for good reasons. The NERC staff review held March 7 will cause the team to work at least 4 more weeks on the documents before they can be ready for posting.

3) Coordination With Generator Verification Team

Danna Cabbell and Bob Millard updated the group on the status of coordinating with the standard drafting team for Project 2007-09 Generator Verification. Bob continues to spearhead the communications effort.

4) Standards Revisions and Documents for Posting

Dana Cabbell led the group in reviewing the proposed documents for posting and revising the documents.

On March 7, 2008, NERC standards staff held a preliminary review of the UFLSDT's request for posting of the UFLS standard documents (including the draft standard PRC-300-CWS-1 and the regional performance characteristics). Bob Millard and Phil Tatro joined David Taylor on the call.

Prior to the March 7 meeting, Maureen Long (NERC Standards Process Manager) and Andy Rodriquez (NERC Manager, Business Practice Coordination) provide the UFLS SDT with written comments on the proposed posting. Ultimately, NERC staff recommended that the UFLS SDT consider removing a number of the continent-wide requirements as they could potentially be covered by Appendix 8 of the ERO Rules of Procedure (see Appendix 8 of the ERO Rules of Procedure starting on page 292 of 316 in the attached Rules of Procedures).

To a large degree the group was amenable to Maureen's and Andy's suggestions (see **Attachment 1**). In doing so, the group agreed that a continent-wide standard is no longer needed. They also agreed that the draft performance characteristics could be tweaked to include a statement regarding "annual certification" of the UFLS programs. Work will need to be done on the documents for posting to reflect this decision to eliminate the continent-wide standard.

Action Item — Dana volunteered to modify the draft comment form to incorporate mapping tables for each of the three standards to be eliminated in association with this project.

Action Item — Bob and Phil were tasked with proposing changes to the performance characteristics to incorporate the "annual certification" of the UFLS programs.

5) Action Items

Dana Cabbell will review the action items generated during the meeting and confirm assignments.

Action Items:	Status:	Assigned To:
Dana Cabbell to contact the WECC Control Work Group to inquire as to what data they have collected relative to generator trip settings during frequency excursions and report back to the UFLS SDT.	**Remains Open — Dana has contacted the group and is awaiting a reply.**	Dana Cabbell
Dana Cabbell volunteered to modify the draft comment form to incorporate mapping tables for each of the three standards to be eliminated in association with this project.	**New**	Dana Cabbell
Bob and Phil were tasked with proposing changes to the performance characteristics to incorporate the "annual certification" of the UFLS programs.	**New**	Bob Millard and Phil Tatro

6) Next Steps

The group confirmed the following future meeting date:

- March 21 (Good Friday) Conference call
  11 a.m.–3 p.m. Eastern Time

7) Adjourn

The meeting adjourned at approximately 2:30 p.m. Eastern Time.

Attachment 1

Comments Received on Documents Proposed for Posting

From Andy Rodriquez:

Looking at the updated document sent out on Thursday, here are some thoughts for discussion today (Bob Millard's suggested talking points in red):

R2 states that the entity shall document misoperations, but that is later qualified with "which results in system frequency excursions below the initializing set points of the regional ULFS standard..." R3, R4, and R5 all say this as well. Does this mean a misoperation never gets reported unless the misoperation itself causes a frequency excursion? It seems like misoperations should be reported no matter what. The word "which" is linked to the prior word "event" — I believe linking this phase to misop. is taking the phase out of context.

Can you combine R2 and R4, as well as R3 and R5? It seems like R2 could say "relay ops and misops and the amount of load shed." This was suggested when the VSLs were developed but not yet acted on by the group.

R3 and R5 do not have the "applicable for the location of the equipment" phrase. Is this intentional or an oversight? Oversight

M1 needs to remove the "documentation" reference that was deleted from R1. Oversight

VSL-R1. needs to eliminate holes at exactly 13 months, exactly 14 months, and exactly 15 months (suggest replacing "less than" with "not more than"). Agree

VSL-R2. what is "the required information"? The events? The operations? The set points? All of the above, up to the discretion of the auditor? Not sure we need to be explicit, but we should discuss. R2 "requires" all.

VSL-R3. Holes at exactly 45 days, exactly 60 days, and exactly 75 days (suggest replacing "less than" with "not more than"). Except for Severe, second half looks like double jeopardy with VSL R2. (only way it would not be is if entity sent only some pages of the report, no?). Agree

VSL-R4. what is "the required information"? The events? The operations? The load? All of the above, up to the discretion of the auditor? Not sure we need to be explicit, but we should discuss. R2. "requires" all.

VSL-R5. Holes at exactly 45 days, exactly 60 days, and exactly 75 days (suggest replacing "less than" with "not more than"). Except for Severe, second half looks like double jeopardy with VSL R4 (only way it would not be is if entity sent only some pages of the report, no?). Agree

VSL-R6. Suggest that Lower, and Medium VSLs be modified to reference an "accurate" description and summary. Cannot use accurate because there is no defined or detailed description of what constitutes accurate.

VSL-R7. Typo in "Lower" (30 days, BUT less than). Holes at exactly 45 days, exactly 60 days, and exactly 75 days (suggest replacing "less than" with "not more than"). Except for Severe, I think the second half is double jeopardy with VSL R6, is it not? Agree

From: Maureen Long

Here are my initial comments on the draft standard.

Isn't the purpose of the standard to require that underfrequency relays and associated load shedding control systems operate on pre-defined low frequency to shed load to prevent cascading outages. The existing purpose statement has no reliability objective.

Should there be a defined setting underfrequency setting for each interconnection? It isn't clear why there should be regional standards to support this when frequency is an interconnection-based measure.

Should there be a formal peer review process to verify that an entity's relays and associated control systems are set to conform to the interconnection-wide settings? If not, then it isn't clear what process would be considered acceptable for conducting such a verification.

Should UF relays and associated load shedding control settings be reviewed and approved before any new UFLS is installed – should there be some method in the implementation plan to verify that all installed systems meet certain specifications?

How would you identify the population of responsible entities? Where would a TOP go to see if it is "responsible for owning, installing, and setting UFLS equipment?" Shouldn't the requirements apply to all who own the equipment? Would you want any entity to operate underfrequency load shedding in an area of the BES where they didn't comply with the requirements? It seems like the requirements should be applicable to all owners with UFLS – you don't want someone to install UFLS on the system without complying with these requirements.

The standard is aimed mostly at documentation and reporting and the reliability-related need for these documentation and reporting requirements isn't clear. Most of the

requirements do not indicate the reliability related outcome of the requirement. Should there be a requirement to set the relays and associated control systems so that they meet some objective — to shed load a certain amount of load in a specific time period when frequency hits some defined limit?

R2–R5 have no impact on reliability if they are not performed. These can be eliminated as separate requirements and addressed in the compliance monitoring processes under "exception reporting" where the responsible entity can be required to file an exception report when its UFLS did not operate to shed load as required.

The UFLS reporting requirements following each event look like they should fall under the Event Analysis program rather than in standards since, by themselves, they don't contribute to reliability.

There is no reliability objective associated with conducting an analysis if there are no associated modifications based on the results of that analysis. It isn't clear what happens with the results of R6 and R7. Since frequency is an interconnection-based limit, having individual RCs analyze these excursions doesn't seem to be focused in the right direction.

The requirements need to be written so that it is clear that they apply to 'each' — using either 'each' or 'the' helps before the list of responsible entities helps make this clear.

Hope these initial comments aren't too harsh. The team obviously spent quite a bit of time in revising this standard.