

Southwest Power Pool
SYSTEM PROTECTION AND CONTROL WORKING GROUP
MEETING

AUGUST 12 AND 13, 2015
EMBASSY SUITES
DALLAS, TEXAS

AUGUST 12 (1P.M. – 5P.M.)
AUGUST 13 (8 A.M. – 12P.M.)

• M I N U T E S •

Item 1a: Call to Order and Introductions

Chair, Bud Averill (GRDA), called the meeting to order at 1pm and welcomed everyone. There were 15 in-person participants and 9 teleconference participants. (Attendance List Attached).

Item 1b: Proxies

There were no proxies for this meeting.

Item 1c: Approve minutes of previous meetings (Action Item)

The minutes for the May 2015 meeting were reviewed and unanimously approved by the group.

Item 1d: Approve agenda

Bud Averill (GRDA) presented the agenda for review and asked for any additions or corrections. One new item, “PRC-001 Protection System Changes” was added to the agenda. The agenda was then unanimously approved.

Agenda Item 2: Review of Past Action Items

Doug Bowman (SPP) reviewed and updated the status of action items through # 62.

Agenda Item3: NERC Update

SPC Meeting Update

Forrest gave an update saying that the SPCS has not met since he provided the last update to the SPCWG at its last meeting in Little Rock. The next SPCS meeting is tentatively scheduled to be held in October.

PRC-027-1/PRC-001 revision is out for comment. The Phase II drafting team is proposing to retire PRC-001 in its entirety. The Phase II drafting Team has gone through the requirements and had a meeting with FERC concerning PRC-001 requirements 2, 5, and 6 where they were able to convince FERC that those requirements are covered in other standards. The Phase II team is putting Requirement 1 of PRC-001 in new standard TOP-009, which is now out for comment and ballot. Until progress is made with PRC-027 and TOP-009, we’re stuck with PRC-001 as is. He noted that the true intent of PRC-001, Requirements 3 and 4 is in PRC-027.

PRC-027 Discussion

Forrest then provided a presentation and lead discussion on the drafting team's changes to PRC-027-1 that have occurred since the last posting.

Agenda Item 4: SPP Strategic Plan (Reliability Excellence) Requirements

Bud Averill talked about the strategic plan schedule that will need to be populated later in the meeting as part of agenda Item 6.

Agenda Item 5: UFLS Plan Changes

Harvey requested the group review and provide input for changes to the UFLS Plan. The changes include the new version of the standard as well as changes requested by the SPCWG. Rev.4, draft 1 is the version that was shown and edited during the meeting.

Stable Power Swings was included as place marker in the plan so we could address it in the future. A number of changes were reviewed including the following:

- Discussion about peak load definition being in the annual data request was discussed. It was noted that peak load is defined as peak load modeled in the MDWG planning models.
- Discussion also centered around the section 8 discussion of "changes to boundary" It was decided that the statement about "changes to boundary" should be removed and that assessments should be done according to PRC-006.

A new section 20 was added that discusses Corrective Action Plans should a technical assessment reveal a UFLS deficiency.

The document was saved as rev4, draft 2.

The calendar was shown and the schedule was determined:

Post on Aug 18 for 15 day comment period on the rev4, draft 2 version and have a 2 hour webinar on Sept 11, 2015 to address comments.

It was noted that we could address stable power swings issue (PRC-026-1, R1.3) at a later time.

Agenda Item 6: Misoperations

Thomas Teafatiller presented misoperations statistics for Q1, 2015. Success rate fell to 87% during Q1 2015. Incorrect settings/logic misoperations continue to be the highest now. An additional graphic was shown demonstrating relay failures by type of relay.

Louis Guidry discussed PRC-004 misoperations reporting. His investigation will provide guidance for finding the reference material...the material is available but not up-to-date. More work needs to be done, for example, expectations on what needs to be inserted into the various fields. He will be working to create a one-page reference guide that will help the members report misoperation data. Louis will continue to work on this and have something for our next meeting Bud discussed the schedule that was included in last meeting's minutes for the misoperations white paper which were:

- *The members will send Doug their sub-cause spreadsheets by July 1, 2015 (2 year of data) and he will work to consolidate them.*
- *Thomas will work with SPCWG non-members to get their data into the spreadsheets.*

- *Data collection to be completed by August 13, 2015.*
- *The group will complete the analysis and comparison to PSMTF by November 12, 2015 and the whitepaper will be complete by Feb 28, 2016.*

The MOPC meeting will be 4/12/16 so we will finish the work on or about our February meeting. The whitepaper will be complete on Feb 28, 2016 and ready to submit to the April MOPC meeting. The paper will need to be routed through the RCWG for review.

The Strategic Plan Spreadsheet "SPC Tracker_SPCWG_081315.xlsx" was updated with the above timeline information and DB will send to Kim VanBrimer.

The group spent time consolidating the misoperations data into one spreadsheet, "SPCWG Incorrect Setting-Logic-Design Errors - Subs Included3_R4.xlsx" and, with the exception of the SPA data, it was completed. DB will get the SPA data. DB will now consolidate the data for analysis purposes.

Agenda Item 7: Criteria Review

Doug Bowman presented a completed Revision Request Form that removes criteria 7.1. It was noted that the Standard isn't effective at this time so the criteria cannot yet be removed. It was request that RR Forms be completed with an effective date in the future.

Agenda Item 8: Review WAPA and Basin Special Protection Schemes

Steve Sanders (Western) again presented information on the Miles City HVDC SPS. The scheme reduces the DC flow on the tie for certain conditions. Western is seeking full SPCWG approval for the scheme.

Ken Zellefrow provided a motion to approve Western's Miles City HVDC SPS. Louis Guidry seconded the motion and it was unanimously approved by the SPCWG. The ORWG and TWG will need to approve and then the MOPC.

Matthew Stoltz presented on the Rapid City SPS. The new hardware design isn't finished so they will provide when finished. The following will be required: Protection and Control schematics, relay one line, three line schematics and dc schematics with indication as to types of equipment to be used. Tanner Siebel described the RDC SPS scheme.

Tanner noted that they could have this information by mid-September. A conference call will then be required to get it approved quickly. It has to go to the ORWG and TWG

Agenda Item 9: Ensign Wind Farm SPS Removal

Mathew Thykkuttathil presented a drawing showing the upgrades that are now in place that will allow removal of the SPS. Louis Guidry made a motion to approve the SPS removal and Shawn Jacobs seconded the motion. The group unanimously approved the motion.

Agenda Item 10: New Items for Discussion

PRC-001 Protection System Changes

SPP Compliance Department has provided direction in the matter of protection system changes. This directive to the group says that the protection changes required for submission should be defined by the individual entity since the entity is responsible for compliance with those

individual requirement. SPP will be ok with a summary of the changes that need to be coordinated and this summary should be sent to SPP via the protection changes email address that has been previously provided.

Agenda Item 11: Discussion of Future Meetings

The following meetings remain for 2015.

- i. Nov 4 & 5, Kansas City

Agenda Item 11: Review of Action Items and Closing Remarks

Doug Bowman reviewed the captured action items (attached).
The meeting was adjourned.

Respectfully Submitted,

Douglas Bowman
SPCWG Staff Secretary

Attendance

Southwest Power Pool

SYSTEM PROTECTION AND CONTROL WORKING GROUP COMMITTEE

<i>SPCWG MTG</i>				
Company	Last Name	First Name	Email	Attending
Southwest Power Pool	Teafatiller	Thomas	tteafatiller.re@spp.org	In Person ✓
Cleco Power LLC	Guidry	Louis	louis.guidry@cleco.com	In Person ✓
Grand River Dam Authority	Averill	Bud	baverill@grda.com	In Person ✓
Grand River Dam Authority	Beasley	Jeffrey	jbeasley@grda.com	In Person ✓
Southwest Power Pool	Hayes	Jonathan	jhayes@spp.org	In Person ✓
Southwest Power Pool	Bowman	Doug	dbowman@spp.org	In Person ✓
Kansas City Power & Light Company	Halling	Allen	allen.halling@kcpl.com	Net Conference ✓
Oklahoma Gas and Electric Company	Hare	John	harejm@oge.com	Net Conference
American Electric Power	Burford	Bret	bgburford@aep.com	Net Conference ✓
Oklahoma Gas & Electric	Jacobs	Shawn	jacobssw@oge.com	In Person ✓
City Utilities of Springfield	Zellefrow	Ken	ken.zellefrow@cityutilities.net	In Person Net ✓
Western Area Power Administration - Upper Great Plains Region	Sanders	Steve	sanders@wapa.gov	Net Conference In Person ✓
Western Area Power Administration	Nansel	Gayle	nansel@wapa.gov	Net Conference ✓
American Electric Power	Gurley	Rick	rigurley@aep.com	In Person ✓
Sunflower Electric Power Corporation	Condict	Gary	gcondict@sunflower.net	Net Conference In Person ✓
Sunflower Electric Power Corporation	Thykkuttathil	Mathew	mthykkuttathil@sunflower.net	In Person ✓
Nebraska Public Power District	Wadas	Stephen	stwadas@nppd.com	Net Conference ✓
Xcel Energy	Melson	Heidt	heidt.melson@xcelenergy.com	In Person ✓
Basin Electric Power Cooperative	Stoltz	Matthew	mstoltz@bepc.com	Net Conference ✓
Western Farmers Electric Cooperative	Brock	Forrest	f_brock@wfec.com	In Person ✓
Golden Spread Electric Cooperative, Inc.	Matos	Chris	cmatos@gsec.coop	Net Conference
American Electric Power	Shockley	Nathaniel	ndshockley@aep.com	Net Conference
CLECO Corporation	Hirchak	Robert	Robert.Hirchak@cleco.com	Net Conference ✓
Southwest Power Pool	Scribner	Harvey	hscribner@spp.org	In Person ✓
Kansas City Power & Light Company	Bach	Joshua	joshua.bach@kcpl.com	Net Conference
Western Area Power Administration - Upper Great Plains Region	Soper	Bob	soper@wapa.gov	Net Conference ✓
	Ghoms	Noumvi	noumvi.ghoms@psc.mo.gov	Net Conference
ITC Holdings	Miller	Tom	tommiller@itctransco.com	Net Conference
Arkansas Electric Cooperative Corporation	Carr	Brent	bcarr@aecc.com	Net Conference ✓

Southwest Power Pool
SYSTEM PROTECTION AND CONTROL WORKING GROUP COMMITTEE

A c t i o n I t e m s

	Action Item	Date Originated	Status	Comments
1.	Frank Bristol will work with Rick Gurley and AEP staff on his proposed option #1 scheme for Dempsey Ridge Wind Farm based on the SPCWG's conclusion that it would not be a Special Protection System.	5/8/2013	Complete	Has been handed to AEP Planning group
2.	Jay Caspary will attend the May 20, 2013 RCWG meeting to gain approval and/or guidance on the SPP UFLS Plan	5/8/2013	Complete	Approval obtained
3.	Send out a request for a conference call after feedback from RCWG meeting on May 20, 2013	5/8/2013	Complete	
4.	Send the Misoperations Report to committee members prior to SPCWG meeting for their review.	5/9/2013	Complete	Thomas T. Presented to SPCWG on 8/7/13
5.	Include the Misoperations Report as a standing Agenda Item	5/9/2013	Complete	
6.	Begin to look into the root causes of why SPP has a higher number of communication failures	5/9/2013	Complete	Will include this as subtopics under misops (See action items 12 and 18)
7.	Jason Speer to send the Southwestern Public Service Frequency Excursion event data to Harvey Scribner to work on any modifications if needed or additions of the Request for UFLS Event Data	5/9/2013	Complete	Harvey assembling UFLS data request form for future use. The will be included in the UFLS process document
8.	Follow-up with MDWG Chair and Staff Secretary in regards to the MDWG short circuit cases to determine a solution for the modeling issues between PSS/E cases and differences when converted to Aspen	5/9/2013	Complete	Discussed at 8/7/13 SPCWG meeting
9.	Develop a format or template for entities to use if they were to experience an UFLS event	5/9/2013	Complete	See action item 7

10.	Develop a format or template for entities to use for UFLS relay settings – Annually	5/9/2013	Complete	See action item 7
11.	Revise the SPS spreadsheet to include a category column. Send the NERC SPS document, which includes the proposed SPS definition, so that the SPS owners can categorize at the November SPCWG meeting.	8/7/2013	Complete	
12.	At the November SPCWG meeting, analyze past misoperations and categorize the communications failures using subcauses in the NERC Misoperations Task Force report. Begin with Q2 2013 and work back in time.	8/7/2013	Complete	Each representative will work on their own comm. misops before the February 2014 meeting. Include item aa 18 below.
13.	Invite BES Definition Drafting Team member, for the November SPCWG meeting, to present on the work they are doing. LS/DB	8/7/2013	Complete	Presented at November meeting
14.	Provide the NERC lessons learned url to the members as part of the minutes. DB	8/7/2013	Complete	
15.	Compliance department to formally send new UFLS plan and date requirements to the members. JS	8/7/2013	Complete	
16.	Determine if coordination with MISO can be worked out to obtain mutual consent concerning delaying the adjusted UFLS boundaries until 2015. HS	8/7/2013	Complete	Those entities formerly within SPP UFLS that are now under the MISO RTO will no longer be under SPP's UFLS Plan
17.	Determine how SPP deals with model corrections between model builds. DB	8/7/2013	Complete	
18.	Members to bring ideas to the November SPCWG meeting for a checklist that will assist in reducing misoperations due to communication problems,	8/7/2013	Complete	Combined with action item 12
19.	Need someone to do a presentation on GMD in a future meeting. DB	9/6/13	Complete	D.B.presented at the 2/5,6 mtg
20.	Set up conference call to work towards a charter for a short circuit task force and deliver at next meeting DB	9/6/13	Complete	Conference call produced an edited white paper for presentation at the 2/5,6 mtg
21.	Send out strategic plan to SPCWG and request comments by mid March.	2/5/2014	Complete	

22.	Members to collect actual fault data, simulate in his own model, and send both sets of info to D.B. to validate SPP short circuit models by Feb 19, 2014	2/5/2014	Complete	SPS and NPPD data provided
23.	DB to discuss with MDWG on possibility of re-activating Short Circuit task force	2/5/2014	complete	SPCWG designees will be put on the agenda for the November MDWG meeting
24.	DB to forward updated criteria spreadsheet to Jonathan Hayes (JH) and SPCWG members. JH to forward to compliance reps and RCWG for review by each entity to determine if included as part of a compliance plan by any individual entity	2/6/2014	complete	No responses received
25.	Areas requiring further investigation within the criteria spreadsheet will be reported on by next meeting by Louis Guidry.	2/6/2014	complete	
26.	The group will fill in misoperation subcause categories provided in the spreadsheet that TTeafatiller sent out on 2/5. Set up webcast for end of February to go through submittals	2/6/2014	complete	
27.	HS to get a copy of the scope of work for UFLS study to the members	5/28/2014	complete	
28.	HS to post UFLS plan revision for a 15 day review by the spcwg and the rcwg and will schedule a conference call for capture of comments	5/28/2014	complete	
29.	The members will review misoperation subcauses due to added category and return with comments by June 6	5/29/2014	complete	
30.	DB to clean up and add info based on item 29, add new graphs and send out to members for comment by June 13 requesting comments by June 20. Final version to be completed June 30 in time for MOPC background material submittal.	5/29/2014	complete	
31.	JH to send email to members with request for response to review recommendations for removing certain sections of the criteria. Members to respond to Jonathan Hayes by June 13.	5/29/2014	complete	
32.	DB to send out doodle poll to members for date of next meeting	5/29/2014	complete	
33.	Investigate short circuit data issues. Bud Averill and AEP representative to attend next MDWG meeting to discuss.	8/20/2014	complete	Bud, Doug, and Rick to meet with MDWG to

	Coordinate findings with TWG and TPL Task Force.			determine path forward
34.	Members to continue to send in short circuit events for analysis	8/20/2014	complete	DB to discuss with SPP staff concerning MOD 33-1 and support needed in analyzing cases
35.	DB will email the whitepaper to everyone and post to SPCWG website	8/20/2014	complete	Completed 8/22
36.	Mike Hughes and Thomas Teafatiller will work on how to implement an SPCWG review of misoperations before it goes to NERC each period	8/20/2014	complete	Review will occur as requested or as required by the RE.
37.	DB will send misoperation spreadsheet columns that are sent to NERC to everyone	8/20/2014	complete	Provided 8/21
38.	Mike Hughes will get the NERC presentation on misoperations to DB for the next SPCWG meeting	8/21/2014	complete	Provided 8/21
39.	Mike Hughes and Thomas Teafatiller will look into normalizing the data on the monthly misoperation presentations	8/21/2014	complete	Thomas will provide starting Q1 Meeting 2015
40.	Kevin Perry will work with Shaun Jacobs and Lynn Shroeder to determine how wind farms would be classified and weighted on the new CIP-002-V5.	8/21/2014	complete	Issue forwarded to NERC
41.	RG,DB,and BA to put together meeting dates for 2015	8/21/2015	complete	
42.	DB to forward charter revision to MOPC for approval	11/11/2014	complete	Charter revision was approved
43.	HS to forward UFLS study to the SPCWG for review by 11/30/14. He will set up call to discuss comments.	11/11/2014	complete	
44.	TT to get the most recent 24 months of misoperations data for analysis with respect to incorrect settings/logic/design	11/12/2014	complete	
45.	LS to follow up with the transmission forum to see what they have in terms of misoperations data related to item 44.	11/12/2014	complete	Forrest to take take on SPCS since Lynn is no longer available. Tom Miller to check with John Zipp for available data

46.	DB to discuss UFLS Plan Entity definition change with HS	11/12/2014	complete	Completion is pending UFLS plan revision approval
47.	LS will look into CCVT minimum requirements for the MDSTF	11/13/2014	complete	
48.	HS and JH to revise UFLS plan to include language about entities not participating in the SPP load shedding program to include them based on the study.	2/11/2015	complete	Completion is pending UFLS plan revision approval
49.	TT to follow up on getting the definition of protection system operation for the misoperation report to the group. Also will forward new misops spreadsheet.	2/11/2015	complete	The definition is now in the attestation
50.	DB to check with Michael Deselle to see if the scorecard has been developed.	2/11/2015	complete	
51.	Each member to go through new misops spreadsheet (that will be sent out by TT) to determine subcauses. We will put it all together at the next face-to-face meeting in May.	2/11/2015	complete	DB to consolidate for analysis
52.	BA and DB to discuss merging the Minimum Design Standard and Estimating Guide with the MDSTF and the PCWG	2/11/2015	complete	MDSTF is for competitive where est guide is not
53.	Lonnie Lindekugel to let us know their thoughts about what they do and do not want to see concerning protection system changes	2/12/2015	complete	Summary and status change is required. Email from Lonnie will be forwarded
54.	DB to distribute request for nominations for two SPCWG members	2/12/2015	complete	
55.	JH to check with Jason Smith on status of criteria changes that were suggested by the SPCWG	2/12/2015	complete	
56.	BA and DB to discuss path forward on getting criteria changes into the new SPP process	2/12/2015	ongoing	
57.	DB to talk to HS about voltage issues in the UFLS study and include in next study	2/12/2015	complete	Harvey to include in next study
58.	LG to provide guidance on reporting misoperations and correct operations at our next meeting	5/6/2015	ongoing	
59.	JH to determine if Miss. Delta SPS should remain as an SPP SPS	5/7/2015	Complete	SPS may be under MISO now

60.	JH and HS to examine section 8 of the UFLS plan for possible needed revisions concerning material boundary changes	5/7/2015	complete	Section revised
61.	DB to work on a repository for all SPSs	5/7/2015	complete	
62.	DB to find waiver form and send to Golden Spread	5/7/2015	complete	
63.	HS and JH to address stable power swings in the next version of the plan change	8/12/2015	ongoing	
64.	Put a list together of material to be submitted to the SPCWG when a new SPS is proposed.	8/12/2015	ongoing	
65.	DB to consolidate misops data for analysis and send output to SPCWG	8/12/2015		
66. J	JH and DB to request clarification from Erin on whether the RRs can be submitted with a future enforceable date	8/12/2015		
67.	DB to work with Steve Sanders to get SPS approval from the TWG and ORWG.	8/12/2015		
68.	DB to work to get SPS approval from the TWG and ORWG for Ensign SPS removal.	8/12/2015		

