

**SOUTHWEST POWER POOL
SYSTEM PROTECTION AND CONTROL WORKING GROUP MEETING**

February 9, 2021 1:00PM - 5:00PM
February 10, 2021 8:00AM - 12:00PM

Net Conference

SUMMARY OF MOTIONS AND ACTION ITEMS

MOTIONS:

1. Zachary Sharp, SPCAG Staff Secretary, facilitated a nomination period and subsequent voting period via confidential email in January 2021 for the 2021-2022 SPCAG Vice Chair position. Chris Angland was the lone nominee and was affirmed by the SPCAG unanimously.

ACTION ITEMS:

- #158: SPP Staff took an action item to reach out to SPCAG members to determine interest in developing a PSSE/ASPEN/CAPE Conversion Whitepaper.

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MINUTES

AGENDA ITEM 1 – ADMINISTRATIVE ITEMS

SPCAG Vice Chair Chris Angland called the meeting to order at 1:02 p.m. The attendance list for both days is being included in the attachments. There were no proxies.

Lynn Schroeder had a minor update to the Agenda changing "NERC SPCS" to "NERC SPCWG". A motion to approve the February 9-10, 2021 agenda was made by Lynn Schroeder, Shawn Jacobs seconded. The motion passed unopposed.

A Motion to approve the October 14-15, 2020 meeting minutes as presented was made by Ken Zellefrow, David Oswald seconded. The motion passed unopposed.

Zachary Sharp read the SPP Antitrust Statement.

Zachary Sharp reviewed the past action items.

AGENDA ITEM 2 – RAS REDUNDANCY REQUIREMENTS

Tom Kay of Invenergy went over the corresponding presentation included in the meeting materials. Tom gave a brief review of the need for and design of the Thunderhead RAS, and where the RAS was currently at with regards to the approval process. Tom then addressed the DC supply redundancy questions raised at the November 2020 meeting. The group agrees conceptually that the DC supply redundancy approach outlined by Tom was acceptable, but wanted to review the technical details to make sure they were in line with what Tom presented. Tom shared the technical documents with the group while the meeting was ongoing.

SYSTEM PROTECTION AND CONTROLS WORKING GROUP MINUTES

2/9-10/2021

AGENDA ITEM 3 – NERC SPCWG UPDATE AND LESSONS LEARNED

Lynn Schroeder gave an update from the November 2nd, 2020 and January 27th, 2021 SPCWG meetings. With Forrest Brock retiring, Lynn is taking over his voting position on the NERC SPCWG. Lynn reviewed NERC Lessons Learned from 2020 including “Cold Weather Operation of SF6 Circuit Breakers”, “Single Phase Fault Precipitates Loss of Generation and Load” and “Loss of State Estimator due to Contradicting Information from Dual ICCP Clusters”.

AGENDA ITEM 4 – SPP NERC UPDATE

Shannon covered topics including NERC SPIDERWG Sub-group updates, Reliability Security Technical Committee (RSTC) December 2020 Meeting and FERC Order 2222. Additional information is available in the meeting background materials. Shannon had some supplementary materials to be distributed to the group via email.

AGENDA ITEM 5 – MRO PRS MEETING UPDATE

Bob Soper of WAPA gave an update from the November 17th, 2020 MRO PRS meeting. The corresponding presentation is available in the meeting background materials.

Bob also took a few minutes to address an islanding event that occurred on the WAPA system on February 2nd, 2021. A jumper broke free from a switch causing a bus to trip at Oahe, taking a generator and several transmission elements out of service. While finishing restoration work at the Oahe substation, the energization of a 230 kV line from out of the substation resulted in the operation of that line due to deicing. The result was out of step operations and a 23 MW island. After restoration, a similar event happened later that day resulting in a second 23 MW island. Bob may bring this event to the group at a future meeting once additional data has been collected.

AGENDA ITEM 6 – CAPE UGM UPDATE

OPPD uses CAPE software for short circuit analysis and recently participated in a CAPE User Group Meeting. Chris Angland of OPPD discussed items of interest from the UGM. Zachary Johnston and Krystal Trojan from OPPD were on the WebEx to address any technical questions. A corresponding presentation is available in the meeting background materials.

*The group broke for the day at 1600 and agreed to resume the meeting at 0900 the next day.

AGENDA ITEM 7 – PSSE/ASPEN/CAPE CONVERSION DISCUSSION (WIND FARMS)

Lynn Schroeder led a discussion on the challenges of converting the SPP MDWG PSSE short circuit models into user short circuit programs such as ASPEN and CAPE. Sunflower's current method of merging SPP models with their short circuit model presents several issues. Lynn suggested an effort to create a whitepaper outlining the methods, challenges and data validation of importing model data from the SPP MDWG PSSE short circuit models into user selected short circuit programs such as ASPEN and CAPE.

SPP Staff took an action item (#158) to reach out to SPCAG members to determine interest in developing a PSSE/ASPEN/CAPE Conversion Whitepaper.

AGENDA ITEM 8 – SF6 BREAKER RUPTURED DISK FAILURE

Steve Wadas of NPPD covered a Pressure Relief Device (PRD) failure event that his company experienced at St. Libory. A PRD ruptured under a no-fault condition. The manufacturer speculated that the PRD was damaged during assembly or shipment, and considers it an isolated incident. NPPD later experienced a similar event at their Broken Bow sub. Tyler Baxter of Corn Belt mentioned that they had a similar SF6 failure last year, caused by a PRD being installed in the wrong direction.

Louis Guidry of CLECO brought up a non-reportable misoperations that his company experienced recently. A technician forgot to change tap settings before placing a relay back in service, causing a bus differential lockout to trip. CLECO has since added the checking of settings to a peer check performed prior to placing relays back in service.

AGENDA ITEM 9 – CLOSING ADMINISTRATIVE DUTIES

Zachary Sharp announced to the group that this would be his last SPCAG meeting as the Staff Secretary. Zachary introduced Trey Rosel as the new Staff Secretary.

Zachary Sharp reviewed the new and open Action Items.

The group discussed topics for future meetings:

- Protection in your shop: OG&E PMUs
- NERC Lessons Learned
- SPP Members Lessons Learned: Evergy Misoperation
- PRC-002 Step 8 Attachment 1 Bus Selection (John Anderson)
- MRO PRS Update (Bob Soper)
- TWG Action Item related to Acceptable Use of RAS
- Jeff Beasley to update group on discussions with ORWG, TWG and GIUF on the Three Terminal Line Whitepaper

- PRC-004 Data Gathering Integration Design (Jeff Beasley, May 2021)
- Bob Soper – February Oahe Islanding Event

Chris Angland adjourned the meeting at 1100.

Respectfully Submitted,

Zachary Sharp

SPCWG Staff Secretary

SUMMARY OF ATTACHMENTS

Agenda (pg. 7)

Attendance List (pg. 8-9)

SOUTHWEST POWER POOL, INC.
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February 9, 2021 1:00PM - 5:00PM CDT
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AGENDA

1. Administrative Items:
 - a. Call to Order..... Chris Angland
 - b. Proxies
 - c. Approve agenda
 - d. Approve minutes of October 14-15, 2020 meeting
 - e. Antitrust Statement.....Zachary Sharp
 - f. Review of Past Action Items
2. Thunderhead RAS Update..... Tom Kay
3. NERC SPCWG Update and Lessons Learned..... Lynn Schroeder
4. SPP NERC Update.....Shannon Mickens
5. MRO PRS Meeting Update..... Bob Soper
6. CAPE UGM Update.....OPPD
7. PSSE/ASPEN/CAPE Conversion Discussion (Wind Farms)..... Lynn Schroeder
8. SF6 Breaker Ruptured Disc FailureSteve Wadas
9. Closing Administrative Duties:
 - a. Summarize Action Items.....Zachary Sharp
 - b. Discuss upcoming meeting topics..... Chris Angland
 - 5/11-12/2021 (Net Conference)
 - 8/10-11/2021 (Net Conference)
 - 11/9-10/2021 (Denver, Xcel)
 - c. Adjourn meeting Chris Angland

Attendance:

Name	Role	Company	2/9/2021	2/10/2021
John Anderson	SPCAG Chair	Evergy		
Chris Angland	SPCAG Vice Chair	OPPD	✓	✓
Bob Soper	SPCAG Member	WAPA	✓	✓
David Oswald	SPCAG Member	Liberty Utilities	✓	✓
David Wheeler	SPCAG Member	Xcel Energy	✓	✓
Jeff Beasley	SPCAG Member	GRDA		
Ken Zellefrow	SPCAG Member	City Utilities	✓	✓
Lynn Schroeder	SPCAG Member	Sunflower	✓	✓
Ryan Godwin	SPCAG Member	AEP	✓	✓
Shawn Jacobs	SPCAG Member	OG&E	✓	✓
Steve Wadas	SPCAG Member	NPPD	✓	✓
Zachary Sharp	SPCAG Staff Secretary	SPP	✓	✓
Jeff McDiarmid	SPP Staff	SPP	✓	✓
Jonathan Hayes	SPP Staff	SPP	✓	
Shannon Mickens	SPP Staff	SPP	✓	
Trey Rosel	SPP Staff	SPP	✓	✓
Andrew Berg		MRE	✓	
Ben Hammer		WAPA	✓	
Gayle Nansel		WAPA-UGPR	✓	
Krystal Trojan		OPPD	✓	
Louis Guidry		CLECO	✓	✓

Matt Boersema		WFEC	✓	
Matthew Thykkuttathil		Sunflower	✓	✓
Michael Fleck		ITC		✓
Neil Smith		Corn Belt		✓
Robert Gray		Liberty Utilities	✓	
Tom Kay		Invenergy	✓	
Tyler Baxter		Corn Belt		✓
Zachary Johnston		OPPD	✓	✓

Not started	MOPC
In progress	BPWG
Closure pending	CWG
On hold	ESWG
Closed	ESRSC
	GOTF
	MWG
	NEDTF
	ORWG
	OTWG
	PCWG
	RARTF
	RCWG
	RTWG
	SSC
	SWG
	SAWG
	SPCAG
	TWG
	OC
	SPC