

Minutes September 2006

C: SYSTEM PROTECTION SUBCOMMITTEE

Chair: T. Seegers

Vice Chair: R. Hunt

The System Protection Subcommittee met on January 11th, 2007 in Phoenix, AZ. 53 people attended the meeting, including 14 members.

7 WGs met at this meeting. The C Subcommittee minutes from the September 2006 meeting were approved by the members of the Subcommittee.

The Vice-Chair provided updates from the PSRC Advisory Committee. The status of all Standards, and all PARs, is now available on the Standards page of the PSRC Website.

WG C1 Cyber Security Issues for Relaying as completed its assignment, and the Subcommittee voted to dissolve the Working Group.

The Subcommittee voted to establish a new Task Force, CTF14, on the "Impact of the Application and Deployment of PMUs on Protective Relaying". The Task Force will be chaired by Jim O'Brien, with Alla Derojna as the Vice Chair. The Task Force will report on practical applications of PMUs as pertains to protective relays, as well as the impact of configuring, installing, maintaining, and operating PMUs will have on protective relay personnel at utilities.

Lively discussion also occurred on a possible WG topic concerning on issues surrounding the development of line protection settings impacted by the addition of IPPs. No Task Force or Working Group will be started at this time. Mukesh Nagpal and Alla Derojna will submit a possible scope to the Chair and Vice Chair. The Chair and Vice Chair will coordinate with D and K Subcommittees to see if this is a possible topic for a Working Group.

WG Reports:

C1: Cyber Security Issues for Relaying

Chair: Solveig Ward

Vice Chair: Jim O'Brien

Output: Paper

Established: 2004

Expected Completion Date: 2007

The C1 working group met with 11 members and 18 guests in attendance.

The comments from the ballot of the paper were reviewed with the following resolutions:

- 6.1.2.5, page 12 In the second & third sentence, several words are capitalized.

-Change accepted

-8.6, page 16 The paragraph under 8.6 is not related to power quality.

-“Power quality” removed.

-9.2, page 18 Wrong table reference given for Miscellaneous and unusual methods.

-Reference corrected

-10.4.1, page 26 Paragraph merely lists a publication.

-This comment apparently from a previous draft and not applicable to the latest one.

- Page 28,30 Reference is made to appendices C & D

-The appendices referenced are in a referenced source and don't need to be duplicated in this paper

- Paper Structure in General The Report has a lot of good information, but was difficult to follow and I found the material confusing. Not really sure what the security issues are, and how I would prevent possible embarrassment, equipment failure, and financial loss.

-Reword the sentence about "possible embarrassment..."

- Section 4.1 Relay Setting Considerations Disagree with title

-Renamed section to "Relay Access and Settings Considerations"

- Section 4.1 Relay Setting Considerations Page 7, paragraph 4. Non-utility employees should not be permitted remote access – these individuals may be allowed local access for limited periods during installation and commissioning work. Relay passwords should be modified to meet utility standards by utility relay engineers after contract individuals have completed their work – simple, non-secure passwords are used by contractors during work.

-No change necessary

- Section 7 Relay Pilot Channels What is the risk and how would someone hack into a Relay Pilot Channel? Since these are typically dedicated single point-to-point networks I would think this is a low security risk.

-Has been discussed before, no changes necessary

- Section 15 Future Directions The first paragraph mentions security policy. A good security policy is not a future consideration but a current reality

-Renamed section to "Conclusion"

The final paper with all the changes will be sent to the working group for review and will be submitted to the PSRC by the May meeting.

The complete paper is 28 pages long but a PES version that is limited to 8 pages had been requested. That shortened version had been created and sent out for comments prior to this meeting. Those comments were reviewed and appropriate changes made. The PES version has to be in its final form and submitted by January 15. Solveig made the changes and resent to the working group for comments so the deadline can be met.

Joe Weiss noted that FERC has rejected the NERC proposed Cyber Security Standard. A 100 page document by FERC about their rejection is available at the FERC.gov website. Joe recommends everyone read the document.

As the work of this working group is complete, no future meeting will be required.

C3: Processes, Issues, Trends and Quality Control of Relay Settings

Chair: Steve Kunsman

Vice Chair: Gary Kobet

Output: Report

Established: 2003

Expected Completion Date: 2007

Working Group C3 met Tuesday, January 9, 2007 in Scottsdale, AZ in a single session with 12 members and 21 guests participating.

Voting of working group and subcommittee is complete with only 1 disapproved vote that has been resolved through comment acceptance. The report is now at Final Draft 7.1 and the working group discussed the last remaining comment on section 8.2 has been accepted and will be revised. Editorial comments will be accepted up to 30-January when the final version 7.2 will be distributed to the main committee for vote.

The working group results will be presented at Texas A&M Relay Conference as a panel session and Georgia Tech as a conference paper. The remaining activities will be to prepare a summary presentation for these conferences.

Eric Udren has accepted to represent the C3 report at Texas A&M panel session

Kevin Donahoe has accepted to present the C3 report at Georgia Tech and Solvieg Ward is backup presenter

The working group met with CIGRE B5-31 working group "Life time management of relay settings" which is closely related to the activities of C3. Peter Crossley presented the B5-31 scope and an open discussion was held. CIGRE is seeking active or Corresponding Working Group members for this activity.

Actions:

1. Kunsman to revise section 8.2/8.3 by 30-Jan
2. Donahoe to confirm Georgia Tech presentation by 30-Jan

The WG requests that the final version 7.2 will be posted to the PSRC website on Feb 1

C4: Global Industry Experiences With Power System Protection Schemes (PSPS)

Chair: Vahid Madani

Vice Chair: Miroslav Begovic

Output: Survey

Established: 2004

Expected Completion Date: September 2007

WG C-11 met on January 9 in single session with total 17 in attendance (11 M, 6 G).

Brief overview of the coordination with CIGRE, the presentation announcements, and additional communications planned through NERC, the IEEE PSCE, and other conferences were discussed.

The WG members reviewed:

- The final version of the HTML
- Reviewed Contact List - "Assistance in completing the survey"
- Reviewed Procedures and who to send filled-out surveys

Survey Broadcast and Dates:

- Release December 2006
- Three follow-ups are planned

- Due date March 19, 2007

The WG members discussed best ways to get respondents to fill out the survey, and best ways to f/u. Several WG members have volunteered to send to their contact colleagues in various parts of the world.

Use of Access Database is suggested given the magnitude of the responses anticipated. Mark Adamiak has volunteered to help with the development of the database by using GE technical team and the spreadsheet developed previously by Stan. Mark described the Access Database preparation will involve:

- 1) Development of Object Model of the survey responses
- 2) Test the model to make sure it maps directly into database (one-to-one mapping)
- 3) Analysis of data using Access Database

Mark is looking at a preliminary version by end of march.

Next Meeting – 30 People, 1 Session, Projector, Power strip

C5: Deployment and use of Disturbance Recorders

Chair: Bill Strang
Vice Chair: Jeff Pond
Output: Report
Established: 2001
Expected Completion Date: January, 2007

The Working Group did not meet in January. The WG report has been presented to the Main Committee, and the Working Group should be dissolved at the May Meeting. The WG report will be presented at the Georgia Tech Fault & Disturbance Analysis Conference in May, 2007.

C6: Relay Engineering in Power Engineering Curricula

Chair: Mani Venkata
Vice Chair: Jaime DeLaRee
Output: Transactions Paper
Established: 2003
Expected Completion Date: 2006

The Working Group did not meet in Phoenix. The Working Group report and Transactions paper has been approved by the members of the C Subcommittee, and was presented at the Main Committee meeting on January 11th. The Working Group anticipates meeting at the May 2007 meeting in Nashville to resolve some final editorial issues.

C9: Under Frequency Load Shedding and Restoration

Chair: Alex Apostolov
Vice Chair: Ken Behrendt
Output: IEEE Guide
Established: 1999
Expected Completion Date: 2007

The working group met on Tuesday, January 9th, with 8 members and 2 guests present. Alex announced that the revised guide was recirculated and there were no negative ballots. The revised guide has therefore been sent to IEEE RevCom for final approval.

The next working group task will be to prepare an IEEE Transaction Paper and a Summary Paper. Alex will prepare an outline for the transaction paper and send it to the working group members to solicit volunteers to write sections of the transaction paper.

The working group also discussed writing an article for Protection, Automation, and Control World magazine to publicize the new guide.

The working group expects to meet in single session at the next PSRC meeting, and needs a room for 30 with a projector screen and outlet strip.

C11: Guide for Protection System Testing

Chair: Vahid Madani

Vice Chair: Hyder DoCarmo

Output: Paper

Established: 2005

Expected Completion Date: September 2008

WG C-11 met on January 9 in single session with total 44 in attendance (22 M, 20 G, 2 new members).

The WG members reviewed a list of pending contributions. The following writing assignments were discussed:

- Certification tests
- New section on Archiving Test Results (Creating Trail)
- Sections on line differential protection testing and breaker failure scheme testing were discussed.
- Direct transfer trip testing
- Impact of high impedance faults and how a system that utilizes such application can be tested. For this section, the WG members and guests decided that the theoretical backgrounds may be place in Annex as reference and focus on the testing of the scheme.

Three people have agreed to start to review the entire Draft before the next meeting.

Next Meeting – 30 People, 1 Session, Projector, Power strip

C12: Performance of Relaying During Wide-Area Stressed System Conditions

Chair: Damir Novosel

Vice Chair: George Bartok

Output: Working Group Report and IEEE Summary Paper

Established: 2004

Expected Completion Date: 2007

The working group met with 15 members and 16 guests present, chaired by Damir Novosel.

We reviewed and updated the membership list.

A number of contributions were received since the last meeting. They were incorporated in the revision 6a of the report. It is approximately 85% complete and comprises 95 pages.

Our major task is to complete a few missing sections in Section 5 on Solutions to protection related issues with wide-area stressed conditions. Applicable material already contained in Section 3 on Protection-Related Behavior will be used as the basis for Solutions.

It was also decided to add sections stressing Impact of Voltage Stability on Distance Protection. Gabriel Benmouyal and Shinachi Imai will contribute.

We also need to switch the order of Sections 4 and 5, placing the Field Experience and Examples section at the end of the report.

Additional writing assignments were made for all required report sections and are attached at the end of this report. The writing assignments are due for submission to the working group chair and vice chair by March 20th. Draft 7 will then be created and e-mailed to the members before April 1st. The complete document will be reviewed for consistency and content by Peter Crossley and Demetrious Tziouvaras. They will make updates and create comments for discussions and distribute Draft 7b to the WG members by April 30th.

Working group members should read the document before the meeting to be prepared to discuss the entire report at the May meeting in Nashville.

The latest draft of the report is available on the working group web site.

Requirements for next meeting: single session, meeting room for 40 people with a computer projector.

C13: Undervoltage Load Shed

Chair: Art Buanno

Vice Chair: Imai Sinichi

Output: Report

Established: 2005

Expected Completion Date: 2008

The UVLS Working Group met for the fourth time with 27 in attendance. This included 12 members and 15 guests.

Patent slides approved by IEEE-SA Standards board were reviewed.

The working group assignment and scope were reviewed with no changes.

Organization of the report was discussed

- Advantages and disadvantages will be included for each reactive power source in Section 2.2
- References should be inserted just after each section.

Comments on the latest draft

- Shunts switched in less than one second would be defined as fast switched shunts rather than discontinuous dynamic sources.
- The paper on CAPS will be referenced.
- Since setting guidance depends on the system characteristics, planning & operating criteria and schemes, section 9.2 will be removed.
- Performance criteria like related system studies, setting consideration/criteria and issues not covered in other sections will be done in section 7.7.3 by Young and Birt.

Discussion on open sections resulted in the following changes to writing assignments.

- 2.3 Coordination between UVLS and UFLS will be done by Madani.
- Short summary of UVLS policy by NERC will be done by Tom Wiedman.
- 5.3.2 on UVLS implementation on local distributed (feeder) basis will be done by Burger

- 6.1.1 on voltage slide scheme will be done by Harley.

The proposed timeline of activities for the working group assignment is presently as the following:

Timeline

April 15, 2007 - Complete writing assignment

May 14-18, 2007 – Next working group meeting in Nashville, TN

August 15, 2007 – First round of editing

September 17-20 – Working group meeting in Charlotte, NC

November 15, 2007 – 2nd round of editing

December 15, 2007 – Submit for ballot

A presentation was made by John Burger on “AEP’s UVLS Scheme” to the working group.

Afterwards the meeting was adjourned.

We request a projector and a room for 30 people at the next meeting. At this time, we request a time allotment for a single session.

Power System Analysis, Computing & Economics Committee Liaison by Malcolm Swanson

No activities to report

NERC by Phil Winston

No substantial activities to report.

Liaison Report of the IEEE PES Power System Stability Controls SC to the PSRC by Gary Michel

The Power System Stability Controls SC is preparing a report on Blackouts. The current draft of this report was distributed to C Subcommittee members early in January. Anyone with questions about, or comments on, the draft should contact Charlie Henville.