

**D9 Working Group**  
**IEEE P1818 - Guide for the Design of Low Voltage Auxiliary Systems for Electric Power Substations**  
**Pittsburgh, Pennsylvania - 2013 May 1<sup>st</sup>, 2013**  
**Wednesday, 1:00 p.m. – 5:00 p.m.**

**Chair:** Hanna E. Abdallah  
**Vice Chair:** Joseph Gravelle  
**Secretary:** Radoslav Barac  
**Technical Editor:** Chuck Haahr

**MEETING NOTES**

1. Chair has shown the IEEE Patent Slides
2. Introduction of guest and members:  
There were 13 of 20 members and 28 guests presents at this meeting. See attendance list at the end of the minutes.
3. Nashville meeting review and approvals:  
Chair has mention that PAR expires 2014.No corrections noted.  
Debra is done with her assignment. Chuck to review the assignment after all chapters are incorporated.
4. Review agenda and revise if required  
To contact other IEEE WGs regarding using those standards as reference in P1818
5. AC auxiliary system present status and discussion (**HEA**)
  - a. **Mike Eads/ James Purcell - Conductor Section 4.11**  
James Purcell has presented the paper.  
James Purcell: This part is based on NEC. James will need input if he is on right path.  
Majority of the members have voted that NEC is good way to go.  
Don Wengerter: NEC is good reference. Do not use *safety* in 4.11.1. Word "*safety*" to be removed. In some areas SS power installation may be inspected by local inspector. We shall add "Authority Having Jurisdiction" (AHJ)  
Keith W: Most cable manufacturer reference NEC. NEC is sizing based on 120% of fuse sizing.  
Brian Farmer: What about fire protection of the cables?  
Tom Proios: Has mentioned that there are no 90<sup>o</sup> connectors so cables have to be rated for 70<sup>o</sup> .  
Aaron Wilson: IEEE RED BOOK should be included as reference.



Brett Phillips: Does cable needs to be sized based on short circuit value. Rad Barac supported this approach.

**b. Hamid Sharifnia - Transfer Switches**

Hamid Sharifnia has not finished the task.

Hamid Sharifnia explained that his utility does not switch to dead source.

Aaron Wilson: In northern area there are Essential and No-Essential loads so there is a need for additional ATS.

**c. Gary Bean-Sources**

Gary Bean has presented Section 4.1.5.

WG has to decide where to move this section.

WG has decided to move this section under SS Transformer and Gary Bean will lead the section write up.

Question: Do we need to suggest or recommend what type of SS voltage to be used for different types of substations?

**d. Hanna Abdallah - Station Service Transformer**

Hanna Abdallah has presented Section.

How to calculation XFMR load. WG to revise this part.

Milomir Gavrilovic has explained Hydro One practice of sizing of SST. 500 kV has to have 3x1000 kVA. Third XFMR was required by NERC. 200 kVA for SVC cooling.

WG has decided to move Sources section under this section and Gary Bean will lead the section write up.

**e. Steve Brown – Panel Section**

Steve Brown has presented Panel Section.

FLP for outside fuses are due

Moilimir Gavrilovic: There are MCCBs with viewing window used for confirming contact position.

Majority of WG member expressed opinion that simple disconnect switches were used for this function.

**f. Pathik Patel - Protection Section**

Pathik Patel has not finished the task.

WG has decided that new members to be assign for the section.

Hanna Abdallah has volunteered to work with Pathik Patel on the section write up.

**g. Sashikant Patel - Bus Layout and Distribution Circuits Configuration**

Sashikant Patel has stop working on write up and had the questions regarding type of short circuit calculations.



WG has decided that new members to be assign for the section.

Hanna Abdallah and Boris Shvartsberg have volunteered to work with Sashikant Patel on the section write up.

#### **h. New Member - Load Section**

WG has decided that new members to be assign for the section.

Aaron Wilson and Miloimir Gavrilovic have volunteered to work on the section write up. Aaron Wilson will lead the task.

#### **i. Debra Longtin – AC Section Overall Review**

WG has decided that Debra Longtin, Steve Brown and Aaron Wilson will review overall AC Section.

6. DC auxiliary system present status and discussion- Don/Joe and Mike Nadeau and Tom Proios.

Don Wengerter has presented section.

Don Wengerter: Battery Optimum temperature is 77<sup>o</sup>. Summer is 110<sup>o</sup>, or 68<sup>o</sup> during winter.

WG to redraw the battery load example picture. Battery charger altitude corrections shall be added. No overcurrent in battery system protection due to fact that is better losing battery than blown fuse and have battery open. Practice of having too heavy battery in the middle rack is not good. Battery room door rating was based of UBC requirements. See if battery sizing includes aging, temperature rise, design margin.

Milomir Gavrilovic has noted that Hydro One uses spill tray under every tier no just on the floor.

Communication normally uses grounded battery system.

Hanna Abdallah has volunteered to send DC battery transfer of the load example.

ANNEX to be added to DC section.

7. Review Assignments.

All first round assignments shall be done by 6-30-2013. Overall review to be performed after that.

8. Schedule for the guide
9. Next Meeting - Nashville, October 2013
10. Adjournment

