

Meeting notes for Working Group D3 Chicago, Illinois

Chair: Hanna Abdallah

Meeting started at May 16, 2011 at 2:20

1. Introduction by Hanna
 - a. New Guide issued in 2010 (approved in 2008)
 - b. This meeting is the start of the review of 2008.
 - c. There were 17 members and 23 guests presents at this meeting. See attendance list at the end of the minutes.
 - d. There were a total of 34 members in the working group.
2. IEEE Patent Slides were shown.
3. Review meeting notes-Montreal. No corrections noted.
4. Review and update meeting agenda
5. Presentation IEEE 605-2008 Changes-Difference between 605-1998 - Hanna
 - a. Working Group members – Substation Electrical Engineers, Civil and Structural, Mechanical engineers, University Professors. Added mechanical and structural members.
 - b. Added strain bus design, informative changes (4,5, & 6), calculation changes (Annex C, D, E, F, G, H, I)
 - c. Conductor selection and corona evaluation
 - d. Bus Design Considerations
6. Short Circuit Forces – Dr. Meliopoulos
 - a. Equations in guide are for infinite long bus (not finite)
 - b. Fully offset current waveform (X/R ratio is infinite)
 - c. Decrement factor in IEEE605-98 should be different than decrement factor in Std. 80. Has different definition, and different number. Dr. Meliopoulos suggests calling this something else, or using a different symbol.
 - d. Conductor length over distance between conductors reduction factor graphs shown.
 - i. Typically reduction factor will be between 80-90%.
7. Maximum fault current on the bus is used in the calculations. In the actual situation, the current splits in to directions and circuits and the bus may see only portion of the current.
8. Discussions
 - a. Next Par would have the five year count start in 2008
 - b. Bob suggests offering a tutorial.
 - c. 2, 3 and 4 spans for fiber stress were removed as once the spans weren't equal, the math changes
 - d. Gary Engmann suggests we need to provide X/R ratio like 17. System protection designs for 3 phase faults.
 - e. Richard Keil suggests concept of how to discuss fault current – and how to use it.
 - f. Discussion about Imperial unit - and removing.
 - g. Polymer insulators – strength values – NO IEC or IEEE standard for these insulators

- h. De-rating insulator strength – Further discussion
 - i. Error in Annex C – which is informative. May need to correct with Errata and may not be able to reaffirm the standard.
9. The working group has decided to form three teams as follows:

Team #	Team Members	Work Required
1	Rich Keil and Gary Engmann. Team Leader: Gary Engmann	Clarify the fault current that must be used in the calculation of bus design. Recommend a process of evaluating the magnitude of short circuit current to be used in bus design calculations
2	Richard Keil, David Stamm, Chuck Haahr, Hanna Abdallah Team Leader: Dr. Sakis Meliopoulos	Evaluate the simplified method used for the calculation of short circuit forces. By using the WINIGS computer program, this team will create the required cases and perform the evaluations.
3	Tom Amundsen, Ross Twidwell, Ulf Anderson, Jean- Bernard. Team Leader: Ramani Ayakannu	This team will perform the following: <ul style="list-style-type: none"> ✓ Review the mechanical load calculation process used in the guide ✓ Evaluate the insulator strength de-rating factor ✓ Review the span length calculations and provide equations to calculate the span length for 2 or more span length.

10. We need to discuss options about re-affirmation, or to create a new PAR.

Submitted for review,

Chuck Haahr/Hanna Abdallah

Attendance

Hanna	Abdallah	Power Engineers
Thomas	Amundsen	Sargent & Lundy, LLC
Ulf	Andersson	ABB Inc., Power Systems
Ramani	Ayakannu	ABB, Inc
John	Baisden	General Electric Company
Jeffrey	Baron	Alstom
Hassein	Bashirian	Southern Company Services
Joseph	Bell	Pacificorp
Steven	Brown	Allen & Hoshall, Inc.
ROBLES	CHRISTIAN	ENTERGY
Dennis	DeCosta	Commonwealth Associates, Inc.
Michael	Drozdek	S&C Electric Company
Howard	Eaton	GE Digital Energy
Gary	Engmann	Burns & McDonnell
Eric	Fujisaki	PG&E
Subhadra	Ganti	Patrick Energy Services
Charles	Haahr	Westar Energy
Bob	hobbs	Global Product Manager
Aziz	Ifteqar	GE Energy
Dewan	Jamir	Burns & McDonnell Engineering Company
Ami	Joseph	GE Energy
Richard	Keil	Commonwealth Associates Inc.
Lucas	Klein	Ameren
Henri	Lemeilleur	Thomas & Betts
Shawn	McGann	DMC Power
Sakis	Meliopoulos	Georgia Institute of Technology
William	Munn	Alabama Power Company - Southern Company Deisgn and Construction
Robert	Nowell	Commonwealth Associates, Inc.
James T.	Orrell	Utility Tech Engr-Consultants (UTEK)
James	Reid	Southern California Edison
Donald	Rogers	Bechtel
Paason	Rojanatavorn	ABB Inc.
Hamid	Sharifnia	PacifiCorp
Doug	Smith	SEFCOR, Inc.
David	Stamm	Sega, Inc.
Daniel	Stanton	DMC Power
Ryan	Stargel	Tennessee Valley Authority
Brian	Stephens	Ameren
Christophe	Tudo-Bornarel	Transpower New Zealand
Ross	Twidwell	Beta Engineering LLC