

D3 Working Group – Bus Design Working Group Notes  
Kansas City  
May 18, 2009 1:30 – 5:30

Chair: Hanna E. Abdallah  
Vice Chair: Jean-Bernard Dastous  
Secretary: Chuck Haahr

1. Hanna Abdallah opened the meeting with Introductions. There were 19 members and 14 guests present at this meeting. See attendance list at the end of the minutes.
2. Obligatory Statement – Hanna Abdallah presented the latest revision of the obligatory documents from IEEE regarding patents in standards and inappropriate topics for Working Group Meetings.
3. Member attendance – There are a total of 32 members of the Working Group. A quorum was present.
4. Sakis Meliopoulos presented a bus design calculations based on his new program. The program uses finite bus lengths to compute forces on bus, insulators, and structures instead of using the infinitely long bus run as published in the standard.
5. Jean-Bernard Dastous presented the Hydro Quebec internal method for calculating forces on bus, insulators, and structures. Their internal program uses finite bus analysis for short circuit calculations.
6. Meeting Notes – The meeting notes from Nashville were reviewed and there were no corrections offered.
7. Agenda – The meeting agenda for the Kansas City meeting was reviewed and approved.
8. Jean-Bernard discussed the status of the latest guide. Errors were found in the annex during conversion of Imperial units to SI. IEEE would not allow technical corrections to the annex. Soo Kim (IEEE) states IEEE will not publish the standard as approved, but will wait until the amendment with the corrections included are balloted.
  - a. Jean-Bernard will finish final corrections end of this week. Once final draft is submitted, editorial staff will provide an amendment template. When complete, amendment will be sent out for balloting. Hope to complete this process by September.
9. Hanna discussed the future article in the IEEE Power Magazine.
10. Sakis asked about writing a transaction paper which will provide additional information and/or examples. Discussion occurred about authoring a Transaction paper or a Conference paper in regards to the new guide.
  - a. Bob Nowell made a motion to write a transaction paper. Don Rogers second. Motion passed with two ‘no’ votes.
  - b. Bob Nowell made a motion to have Hanna, Sakis, and Jean-Bernard to author the paper. Don Rogers second. Motion passed.
  - c. Discussion occurred in regards to transaction paper (which has a 3 month review period). Outline should be same as guide outline.

- d. Schedule to be determined later but outline should be completed in next two months by Jean-Bernard.
  - e. Working group will be given reasonable time to review final paper.
11. Discussion on the next draft of IEEE 605 started next.
- a. Discussion occurred in regards to modifying short circuit forces. After discussion, at this point, not sure how to proceed converting from infinite bus to finite bus.
  - b. Discussion occurred in regards to providing guidance to provide for non-simultaneous forces at the same time (ie ½ fault current with full wind).
    - i. Suggested possible using ASCE Guide 07 to provide load factor combinations
    - ii. Suggest creating 'k'-factor
    - iii. Suggest providing information as to where to go get information so the user can determine load factor combinations.
    - iv. No final decision made.
    - v. Don Wengerter made motion to provide some type of guidance (method to be determined later) for the end user on short circuit forces. This motion was not seconded. Further discussion occurred, and how to proceed was not decided yet.
  - c. Insulator Strength Section Improvement - Jean-Bernard to report at next meeting difference between 1998 version and soon to be released 2009 version.
  - d. Short Circuit Current Calculation Equation – The equation is currently good for Al & Cu. Hanna would like to change the equation so it works for all conductors in the next version.
  - e. Gary Engmann via email suggested that minimum or typical yield strength for aluminum bus be added. There was some discussion that this may have not been included because structural engineers have changed their terminology. Further research required.
12. Hanna presented a first draft of the 2010 WGD3 tutorial. Discussion occurred in regards to who would attend a 605 tutorial and who we should focus the tutorial for.
- a. Hanna, Sakis, and Jean-Bernard will develop an outline for the tutorial in the next two months and start preparing the tutorial for the Annual meeting in 2010.
13. Other items – It was suggested that the tables may need to be enhanced to include 5” Sch 120 bus for 5000 amp application. The requester was reminded that the equations are valid and he as a user could individually track down the needed information.
14. Next Meeting: Nashville, October/November 2009.

Respectfully Submitted:  
Chuck Haahr  
WGD3 Secretary

Attendance:

Hanna Abdallah	Chair
Scott Andries	Member
Radoslav Barac	Member
Robert Brown	Member
Dennis Cummings	Guest
Jean-Bernard Dastous	Vice-Chair
Dennis Decosta	Member
Lane Garrett	Guest
Chuck Haahr	Secretary
Philip Hodes	Guest
Pavel Ionita	Guest
Richard Keil	Member
Soo Kim	Guest
Alesia Klein	Guest*Not in 123.
Allen Love	Guest
Jason Meidinger	Guest
Sakis Meliopoulos	Member
William Munn	Guest
Mike Noori	Member
Robert Nowell	Member
Donald Rogers	Member
Hamid Sharifnia	Member
Steven Shelton	Member
Boris Shvartsberg	Member
Ryan Stargel	Member
Brian Stephens	Member
Brian Story	Member
William Thompson	Guest
Giang Tran	Guest
Brian Wallace	Guest
John Weems	Guest
Don Wengerter	Member
Adam Zook	Guest