

WG D5 - Working Group D5 "Direct Lightning Stroke Shielding of Substations"

Richmond, Virginia, Tuesday, May 9, 2017, 8:00 am to 12:00 am:

Meeting Notes

- Brian Cain opened meeting
- Introductions made with affiliations
- Par Patent Slides presented for reading
- Roster Sign-in sheet passed around. 20 members out of 35 were present. Quorum is established.

- Approved meeting notes from JTCM 2017 New Orleans, LA January 11, 2017. Moved by Tom Proios, 2nd by Bryan Beske. Approved with no discussion.

- Brian Cain discussed that we are looking to get the 500kV/230kV 3D models completed for evaluation of the various methods for the WG's future use. Bob Nowell questioned if the models were needed for this guides scope. The WG discussed providing only the 69kV models. WG discussed tabling higher voltage 3D models for later.

- Lane reviewed the 69 kV model and comparisons. Lane reviewed one site with a GFD of 4 and 23 for comparisons, asked by Brian Cain. Bryan Beske discussed a storm in their operating area with higher positive strikes count than normal, but the 30 year average still applied. Keith Wallace reminded the WG that our models allow some probability that some strikes may get through the shielding system. Lane to continue working on MTBF and risk evaluation with Aaron Wilson.

- Joe Gravelle discussed some Clause 2 definitions were missing and should be added to the guide. Joe G. and Ben Loehr to provide a list and definitions for the next meeting.

- Brian Cain reviewed the 69kV LIT model PP from Peter Baxter and Lee Herron. It appears table B22 and B23 need to be revised.

- Bill Tocher discussed assignments on LPM model. Bill suggested the LIT, FIFM, and LPM include the competing features attractive strike zones.

- Jorge Cardenas and Ehsan Azordegan discussed the FIFM 69kV models. CAD files to be resent for common comparison. Review to competing features to be added.

- Aaron Wilson reviewed his power point presentation for Annex D Risk evaluations. WG to review and discuss.

- Clause 3 modifications discussed with Dr. Sakis Meliopoulos. An outline to be developed. WG discussed keeping any data in Clause 3 valuable to the world use of the guide.

- Section 4 and 5 was discussed. WG asked for any comments on Clause 4. Clause 4 to be modified with Annex D on Risk after Aaron and Lane's work is complete. Clause 5 was discussed in depth. WG reviewed the two empirical methods based on experiences. The Wagner method cannot be extrapolated. Bill Carman to revise section 5 for limitations on page 17 and 18.
- The WG discussed Section 6 and 7 relative to the annex's and examples for the guide's modifications. The RSM was discussed as a useful method for all the EGM formulas. The guides layout by history dates from 1924 (Right Angle) to 1963 EGM was discussed. Brian Cain presented the Asian paper for the POLYGONAL Method with height in the formula. The WG discussed all the EGM methods that have an S and I in the formula. Sakis discussed the Polygonal method is an offshoot of an EGM. WG discussed combining all EGM methods in one section or annex. WG discussed using only the 69kV substation for the examples and removing the 500/230kV examples which may be used for a tutorial.
- Don Wengerter made a motion to create a task force group to review the layout and material of sections 6, 7, and all Annexes. 2nd by Bob Nowell. Motion discussed. Motion carried 20 of 20. Six volunteers selected for the subcommittee.
- WG discussed the next meeting at JTCM in January 2018 in Florida and the SC annual meeting in May 2018 in Arizona.
- Meeting Adjourned.