

**Stray and Contact Voltage Working Group**  
**Matthew Norwalk, Chair**  
**Sal Martino, Vice Chair**  
**Scott Kruse, Secretary**

**2021 JTCM WebEx Meeting**

**January 12, 2021**  
**2PM – 3:30PM ET**

**Approved Meeting Minutes**

**Attendees**

Bryan Beske – Safeearth  
Mythili Chaganti –  
Vong Chan - SCE  
William Chisholm –  
Larry Clark – Alabama Power  
Larry Conrad – Conrad Technical Services  
Doug Dorr – EPRI  
Dave Gilmer – Unaffiliated  
Bryan Glenn – SCE  
Kevin Grant – Con Edison  
Joe Grappe – Duke Energy  
Thomas Gwinn - Unaffiliated  
Stuart Hanebuth – Osmose  
Robert Harris – NRECA  
Van Holsomback – EPRI  
Terri Hopkins – Duke Energy  
Tyler Jones – PacificCorp  
David Kalokitis – Osmose  
Scott Kruse - Osmose

Sal Martino – Duke Energy  
John McDaniel – National Grid  
Chris Mullins – Power Monitors, Inc.  
Mark Murray – Okla. Gas & Electric  
Neal Murray – EPRI  
Matt Norwalk– SCE  
Karen Pedersen - Consultant  
Scott Peele – Energy Applications  
Andrew Reid – Con Edison  
Daniel Sabin -  
Rob Schaerer – Power Engineers  
Gary Smullins -  
Rusty Sodergerg - Consumer Energy  
Muayad Tarabain – Hydro One  
Mats Wahlberg -  
Jeff Wischkaemper – Texas A&M  
Nicholas Zagrodnik – We Energies  
David Zech – Duke Energy

The Stray and Contact Voltage Working Group held a WebEx Meeting in place of a face-to-face meeting due to the COVID-19 Pandemic. The meeting was held Tuesday afternoon January 12, 2021. There were 37 people in attendance.

The meeting began with the Chair introducing the Officers and requesting that participants use the chat to list their name and affiliation and e-mail. The Chair also informed the group that Chuck DeNardo stepped down from the Vice Chair position and that anyone interested in the position should let him know. A quorum was established.

The patent slides were posted for review by the group, and no one identified any patent information. Sal Martino reminded the group of the new copyright policy which requires the working group to obtain permission for the use of all prepublished material before including it in a draft document.

Next the group reviewed the Agenda.

The July 27th WebEx meeting minutes were approved by the group, John McDaniel motioned, and Sal Martino seconded the approval.

The Chair addressed the Vice Chair vacancy and requested anyone interested to raise their hand or type in the chat. Neal Murray had his hand raised, and Andrew Reid asked for clarification of the position. It became known that no one other than Sal Martino had expressed interest prior to the meeting. Sal asked if the group would move to nominate him, Dave Gilmer moved, and Scott Peele seconded. Before the vote was finalized by the group, Neal Murray was given the opportunity to express his interest in the position but deferred to Sal. The group voted unanimously in favor of Sal Martino being Vice Chair.

The Chair mentioned that Sal Martino had taken over as Chair of the Editing Subgroup and would provide an update on the subgroup's status. Sal informed the group that all the updated content was submitted by the clause leads and is being formatted into the guide. He plans to have it completed in a week or so to share with the Editing Subgroup which will discuss the formatted draft. After the subgroup approves the draft it will be e-mailed to the larger group of voting members and non-voting members for review and a 2-week comment period. The goal is to have this happen by the middle of February. All comments will be reviewed and depending on the amount of editing it could go back to the subgroup. Once all editing is done there will be a vote to move the document to ballot. The expectation is to get it to ballot by the General Meeting.

There was discussion on membership and 123signup. It was requested that if anyone wanted to be enrolled in 123signup they should make a note in the chat. Scott Kruse addressed the group regarding 123signup membership. Anyone who attends the meetings gets enrolled in 123signup if their e-mail is in the system or they have provided it. He stated that if anyone is eligible for a change in membership status they are notified by e-mail and given an opportunity to verify acceptance. Membership status is determined by the requirements in the Policies and Procedures for Working Groups of the IEEE PES Transmission and Distribution Subcommittee, IEEE-TD-PP-WG-2020-05-20. It was also mentioned that in order to obtain voting membership once the attendance requirement is met the individual needs to request it. Sal asked that anyone needing information on 123signup send him an e-mail.

The Chair led a discussion of 2020 NEC Article 555.35(B). The article states that where more than three receptacles supply shore power to boats, a leakage current measurement device shall be available and used to determine leakage current from each boat that will utilize shore power. This is an attempt to address the issues around marina and boat dock shocks and electrocutions. The Chair pointed out that a leakage current clamp meter has resolution of 1uA compared to a typical clamp meter which is between 10mA to 100mA. It was determined that Annex E of the guide should be updated to specify the use of a leakage current clamp-type ammeter to determine the presence of leakage current from vessel wiring and equipment. Additionally, Dave Kalokitis will add a leakage current clamp-type ammeter to Claus 6 Detection and Measurement Equipment. It was also noted in the discussion that the guide should address the proper way to measure leakage current with a leakage current clamp meter and to notify the NEC of the process. Doug Dorr will submit a case study on the use of an isolation transformer at a marina to test for faulted electrical wiring on a vessel.

#### New Business:

Doug provided an update on NEC 680 and the adoption of the Equipotential Grid at the State level. Massachusetts adopted the use of the equipotential grid for all inground pool installations. NC did not adopt the grid, the committee never put the recommendation to use an equipotential grid up for vote. They will continue with efforts to convince the panel to change the code for the 2023 revision.

#### Round Table:

Scott Peele submitted 3 case studies which address dead spans. He wanted to know if the use of dead spans were addressed in the guide. It was determined it was not, but should be added. Muayad Tarabain requested that Scott forward him the case studies so he could draft something to use in the mitigation section. Additionally, it was noted the case studies will need to be simplified to strip out the specifics and make them more generic.

Bryan Glenn shared his findings of meter manufacturers that make ammeters that measure  $\mu\text{A}$  as required by NEC Article 555.35(B).

Chair requested anyone interested in helping with the editing subgroup to e-mail him or Sal Martino.

Dave Kalokitis motioned to adjourn, and John McDaniel seconded, meeting adjourned at 3:19PM ET.

The next meeting will be held during the IEEE General Meeting, July 2021.