

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

2023 IEEE PES GM
Hyatt Regency Orlando
Orlando, FL

July 17, 2023
3PM – 5PM EDT

Approved Meeting Minutes

Attendees

Voting Members

Bryan Beske – Safearth	John McDaniel – National Grid
Vong Chan – SCE	Chris Mullins – Power Monitors, Inc
Larry Conrad – Conrad Technical Services	Matt Norwalk– SCE
Doug Dorr - EPRI	Paul Ortmann – Idaho Power Co.
Kevin Grant – Con Edison	Andrew Reid – Con Edison
Joe Grappe – Sentient Energy	Rob Schaerer – Power Engineers
David Kalokitis - Osmose	Muayad Tarabain – Hydro One
Scott Kruse - Osmose	Jeremy Wright - Osmose
Sal Martino – Duke Energy	

Non-Voting Members

Tom Cooke - EPRI	David Martinez - PNM
Roger Dugan - EPRI	Robert Naphen – National Grid
Bharya Gudimetla – Quanta Tech	Tom Overman - ICF
Don Hall – Quanta Tech	Rusty Soderberg – Consumer Energy
Darren Hoppins - Sensorlink	Brett Stockton – Duke Energy
John Lauletta – Exacter Inc.	Steve Tatum – Alabama Power

The Stray and Contact Voltage Working Group met Monday, July 17, 2023. There were 29 people in attendance.

The meeting began with introductions and a review of the IEEE patent and copyright slides. There were no patents mentioned.

A quorum was present and confirmed through the sign in sheet.

The group reviewed the meeting minutes from the Jacksonville JTCM. The minutes were approved with a motion by David Kalokitis and seconded by Larry Conrad.

After a brief review of the agenda, Larry Conrad motioned to approve, and Joe Grappe seconded. The agenda was approved.

Theo Laughner presented: Using Receptacle-Based Sensors for Loose Neutral Detection. The presentation focused on an electrical safety monitoring device that plugs into a standard electrical outlet and connects to Wi-Fi to monitor electrical signals in the home. The sensor can detect electrical fire hazards in homeowner devices, appliances, home systems and home electrical infrastructure along with those from electrical utility infrastructure. The sensors are deployed across 310,000 plus homes and growing. The sensor data is monitored, and homeowners get notified when an issue is detected, they either have an electrician come out or they are told to call the utility to report a loose neutral. The device is very good at detecting loose neutrals with a very low false positive detection rate. The devices may be able to detect failing transformers since there appears to be a signature in the data. It was asked if the device has been used in homes with AMI meters, but that data isn't something that was collected. There was a brief discussion about the experiences that some of the utility members in the group have had with the sensors. The Chair mentioned that sensors and meters that can detect issues proactively should be incorporated into the guide in the next version. Sal suggested writing a technical paper that might lead to a guide of its own.

Group took a break between 4:02 and 4:11pm.

Tom Overman presented: Stray & Contact Voltage Confined Livestock Mitigation Case Study. There was voltage in the dairy barn between the water bowl and floor and milk production was down. Voltage was measured with a multimeter without a resistor. The electrical panel was pulled apart to separate the ground and neutral and identify the loads. Various issues were discovered during the rewiring that were corrected and a fourth wire for ground was added to allow the neutral and ground to be isolated at each building. After fixing the wiring the milk production went up and continued to trend upward. The 4-wire system from the case study is represented in IEEE P1695 Figure 37.

The group discussed the status of the approved Draft 4 of the Guide, which was voted on by the voting members of the working group. It was currently being voted on by the

Distribution Subcommittee with the close of the voting period set for July 18th, 2023. Once the Guide is approved to move forward to Balloting the pool will be created. Matt will send out an email with the requirements to join the ballot pool.

The Chair announced the T&D conference will be in Anaheim, CA hosted by Southern California Edison. He suggested holding a panel session for Stray and Contact Voltage and would like to have volunteers. The submission date is August 20, 2023 so any volunteers should reach out to him.

Round Table:

Larry Conrad had a comment about a situation he had been involved with regarding a saltwater pool with rebar in concrete and a stainless-steel panel butt up against it with .3 volts DC. He wanted to know where the DC voltage might be coming from. It was suggested that it could be cathodic protection on the pipes and the gas company could confirm.

John McDaniel mentioned that PES has 19 awards available currently for practicing engineers and if anyone knows of someone in distribution engineering that is worthy, they should submit a recommendation.

The Chair also mentioned the IEEE is looking for Senior Members and encouraged anyone eligible to upgrade their membership.

John McDaniel motioned to adjourn the meeting and it was seconded by Larry Conrad. Meeting adjourned at 4:59

The next in-person meeting is scheduled to be held at the IEEE Joint Technical Committee Meeting, January 2024 in New Orleans.