Minutes of the IEEE PSES TSTC teleconference held Wednesday, January 11, 2017 at 11:00 AM EST, for one hour.

1. Attendance/Introductions

Members present: Don Gies (Nokia Bell Labs), Philip Havens (Littelfuse), Al Martin (retired), , Paul Ng (GE Energy), Joe Randolph (Randolph Telecom), Dan Roman (Colgate-Palmolive), Jim Wiese (Adtran).

Members absent: Ernie Gallo (Ericsson – Telcordia), Peter Lim (Alpha Technology), Mick Maytum (MJMaytum), Gary Schrempp (Dell), Tom Smith (TJS Technical Services Inc), Svetlana Ulemek (Burndy), Anne Venetta-Richard (Nokia).

Interested parties (not present)
Tim Ardley (Adtran), Doug Parker (Adtran), Peter Tarver (Enphase Energy), Steve Zugay (Cree)

2. Meeting arrangements

Join me now in my Personal Room.

Join WebEx meeting
https://nokiameetings.webex.com/join/don.gies
Meeting number: 953 999 550

Join by phone
8200300 Internal
+14702263458 US Atlanta
Access code: 953 999 550
Global call-in numbers

Join by video conferencing system
*953 999 550 Internal
@ 953 999 550@nokiameetings.webex.com External

3. Previous meeting minutes

The minutes of the December 7, 2016 meeting were reviewed and approved with a minor change.

4. New business

a) Changes to IEC62368

Paul Ng: Showed his presentation. Essentially what IEC62368 wants to do is replace the 1.2/850 surge test with a dielectric withstand test. In IEC 60664 the dielectric withstand test is 4000 V. For the case of a 480 V delta input power supply, IEC62368 says to do the dielectric withstand test at 6000 V. The dielectric withstand test is hard to do at 6000 V due to corona discharge. My proposal is to use 6000 V surge test instead.

The new dielectric withstand test in IEC62368 is intended to simulate a 1.2/50 impulse test. But there is a big difference in doing a surge test and a dielectric withstand test. IEC62638 makes distinction between surface breakdown and insulation withstand. My argument is that if a test is copied from IEC60664, it shouldn't make the requirements tougher than they are in IEC60664. Apparently the logic for the IEC62368 requirement is that in the case of a distribution transformer fault it can take up to 5 seconds for the fault to clear. So this case looks like a long-term event which can be simulated by a dielectric withstand test. IEC62368 oversimplified things, which causes problems. The IEC62368 test is not realistic.

Don: If we have 480 V delta, Annex G puts you in a higher surge category. The issue is that the electric strength test is tied back to a surge voltage. There doesn't seem to be a clean way to connect IEC62664 to IEC62398.

Joe: What is problem?

Paul: The problem is that a new clause in IEC62368 is tougher than the corresponding one in IEC60664. What IEC62368 did was to make everything a dielectric test instead of a surge test. The rationale was that not everyone has a 6000 V surge generator.

Don: You have to meet the highest voltage in the three tables. For a 240 V input the worst case of the 3 tables was a bit higher than 60950-1 The issue is that 480V delta equipment gets thrown into higher test voltage.

Joe: So what the new standard does is impose a stricter requirement than the older one.

Paul: IEC62368 tried to take a more scientific test. Why do a hipot? Do it because a transient imposes high voltages. IEC62368 has 3 hipot tables one for transients, one for swells, and one for internally generated voltages. My problem is a specific case where a mains transient is simulated by 6000 V dielectric test – I want to go back to a surge test.

Phil: Can we just change the note that sends us to the 6000 V test?

Paul: It's not easy to change an international standard.

Don: Al do you know why the delta case is worse than a grounded Y?

Al: No. The logic for that is probably in the CDs for the standard.

Paul: There is a hipot test for clearances and a hipot est for insulation thickness.

Joe: Most common hipot equipment only goes to 5000 V.

Don: I recommend you get familiar with the new dielectric test requirement. What voltages are different from IEC62950?

b) Posting of minutes to a website

Don: We need a destination for posting minutes.

Dan: What destination do you want?

Don: Google drive would work.

Dan e-mail me the google address you want to use, and I'll set up an account.

c) C Surface temperature requirements

Jim: There is a conference call discussing the change in surface temperature measurements on February 25. Telcordia and ATIS use a baseline of 25 ^{o}C for normalizing temperature. The test procedure has been changed to normalize to the max operating temp of the equipment.

Don: People don't want to give up on normaliazing temperatures, including service providers.

Jim: Service providers use the ATIS recommendations. The safety standard is OK – it normalizes the surface temperature to 25 ^{o}C.

Joe: An empty box would fail a test referenced to the environmental temperature.

Don: The new standard should only be concerned with the internal temperature rise, but it's hard to get people to accept this.

Jim: There are short-term and long-term limits. Most of equipment life is in an environment at about 28 ^{o}C, so it doesn't make sense to assume max operating temp.

Joe: As product designers, we want to regulate the temp rise. But a purist would say no, you need to look at the temperature where people could be burned. Rich Nute gave presentation on touch temperature. But it wasn't accepted for standards.

Don: We'll see if we can get a copy of Rich's presentation to circulate.

5. IEC 62368 updates

Don: Any updates?

Jim: Nothing yet.

Don: In my environment buried former telecom copper cables could be used for power.

6. Changes to 2017 National Electrical Code Regarding powering over low-power interfaces

Changes have been made to Articles 840, 725 and possible other areas regarding requirements and marking of Class 2 and Class 3 circuits intended to power devices. Common examples are power over Ethernet and USB.

7. Additional agenda items

None

8. Old Business

None

Next meeting

The proposal is to hold meetings on the second Wednesday of the month. So the next meeting will be Wednesday February 8, 2017.

Respectfully submitted
Al Martin, Secretary