

IEEE Product Safety Engineering Society

Minutes of the IEEE PSES TSTC teleconference held Wednesday, May 27, 2015 at 11:00 AM EST, for one hour 45 minutes.

1. Attendance/Introductions

Members present: Don Gies (Alcatel-Lucent), Philip Havens (Littelfuse), Al Martin (retired), Mick Maytum (MJMaytum), Paul Ng (GE Energy), Joe Randolph (Randolph Telecom), Jim Wiese (Adtran).

Members absent: Tim Ardley (Adtran), Peter Lim (Alpha Technology), Doug Parker (Adtran), Gary Schrempp (Dell), Dan Roman (Colgate Palmolive), Tom Smith (TJS Technical Services Inc), Peter Tarver (Enphase Energy), Steve Zugay (Cree).), Svetlana Ulemek (Burndy), Anne Venetta-Richard (Alcatel-Lucent).

2. Meeting arrangements

Don Gies supplied the call-in number:
Bridge No. (Toll Free): 1-800-771-8734
International Access: +1-647-723-3953
Access Code: 5825978

3. Previous meeting minutes (attached)

Approved the minutes of the last meeting

4. New business?

a. ISPCE 2015

Don went, presented a paper on new approach to ventilation (a summary of 5 years of work). He was on the battery track. Don's talk was well received.

Rich Nute gave a talk on spacings and creepages and clearances. He made many references to Joe's paper. No human body models for high frequency current. This has been an on-going discussion. Does the body have a resonant frequency? Most models have only capacitance and resistance, but no inductance, so no resonance

Joe: Can we get a copy of Don's paper?

Don: Yes

b. North Jersey Section – EMC/Product Safety Chapter Created – Dan Roman

First meeting in June

5. Draft IEC Standards – TC108 Meeting in Northbrook, IL.

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- a. IEC 60950-22 CDV – Batteries, DC surge voltage of 1.5 kV. Edition 2 has passed. It has ventilation requirements in it, particularly the use of tubes, and addresses mechanical dampers in the worst position. IEC standard says if have VRLA or NiCd batteries, then assume you have boost charge, unless you can show otherwise. Boost charge phase requires 8 times the ventilation as non-boost charge. Not much mentioned about the DC surge voltage.
- b. New RFT standard –IEC 62368-3.
For any powering external circuit. For USB or POE, should comply with ES1 or ES2.
Issue: A note was added underneath the definition saying communications on RFT don't need to be present. Don had raised this issue.

Philip: ATIS sent a letter to TC108 asking if they could have a complimentary copy of the relevant standards, so that ATIS and TC108 tasks could be coordinated.

Jim: Can't distribute IEC standards in ATIS, because ATIS doesn't have a liaison agreement.

Don: ATIS should send a delegate to TC108.

Don: Several people reviewed IEC and ATIS documents for compatibility, and decided that it isn't necessary to build 2 versions of a product.

Jim: Everything in the loop has to meet RFT, otherwise you can't list your product. There are about 18 issues that need to be resolved. Randy Ivans wrote UL2391 as a means of listing products.

Don: Biggest complaint is that ATIS never came up with specific proposals in IEC format.

Phil: ATIS attached lists to 2 liaison letters that did have specific proposals, but TC108 wouldn't accept the letters.

Jim: ATIS can't submit formal proposals, because it doesn't have liaison to TC108.

Don: The standard is for equipment, not installation

Jim: If have an environment where you control everything, no problems. But if want to put the equipment in a network, have problems, e.g. punch-down blocks are approved to UL1863, which is not RFT compatible. The issue is old wiring and the need for capacitance measurements. Equipment meets voltage and current limits, but not all the extra stuff that has been added, such as network capacitance measurements.

Paul: What's happening with capacitance measurements? There people that feel strongly about charged capacitance.

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Jim: Standard says that the entire network needs to have a capacitance measurement, and that's not going to be done. There's not even a procedure for that. Can do the capacitance measurement for equipment, but not the network.

Paul: To get rid of the requirement, you run into people who for safety want the capacitance measurement.

Jim: End-to-end capacitance measurements aren't going to be done. But the equipment manual says that the measurement has to be done. Service providers will not deploy equipment that has the requirement in the manual.

Don: I'm on the US TAG, so if we want to draft a proposal, it can be submitted. We do have the opportunity to make a change, but must make specific proposals. Must explain why equipment can't be listed.

Jim: We've identified 18 issues where there's a problem.

Don: You will have an opportunity to make things perfect.

Phil: How do you do that?

Mick: You have to submit proposals in IEC speak. That's the key. If you don't do it this way you won't be heard.

Jim: Should we go for an appendix, or specific changes to paragraphs in the standard?

Don: We're not changing installation practice.

Jim: All telecom cable is rated at 300 V. RFT is +/- 200 V, so 400 V total.

Don: Again need specific proposals in IEC format.

Jim: Two approaches: Leave the main document unchanged, but add a note with exceptions; or make changes to individual clauses. Which approach is better?

Don: Several folks have reviewed your documents, and asked if 2 versions of the equipment were needed. Said no.

Jim: Can make it, but can't deploy it.

Philip: Don, do you disagree with comments?

Don: No, but the issues are with installation, not the product. I went item by item to see if I would have to build two product types, and couldn't find anything that would require me to do that.

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Don: I made a proposal to allow lines with power but no signal. That was accepted. The standards that cover RFT-V are used primarily in North America. Asked to bring the D3 deviations into the standard, which was accepted in principal. If no one complains, those will stay in the standard.

Don: Add POE and RFT to the Scope?

Jim: How do they handle reverse power?

Phil: Don would you attend the next ATIS standard, to advise us on how to draft the proposals?

Don: Send me an invite. We're under travel restrictions.

Phil: Will check to see how to do an official invitation.

Jim: Right now 400 V power is deployed on 300 V cable.

Don: You have to supply equipment that service providers want. If they want +/- 200 V, then you have to supply that.

Joe: Don you reviewed the list of issues, but didn't see any problems?

Don: I was looking for incompatibility, which would require you to make two different products. I didn't find anything that would require you to build one version to NEBS, and one to IEC.

Joe: Philip and Jim probably understand the issues better than anyone. Did you (Don) run the issues by them?

Paul: What was UL's response?

Jim: One approach was to get the cable rating changed, but nothing was done. The problem is line-to-line rating. UL2391 can be used in lieu of -21, along with UL60950. UL2391 has no requirement for cable rating.

Paul: Randy is in wire and cable, so maybe he could fix the cable rating issue. I think this is the pragmatic approach. It's a lot of work to change a bunch of clauses in the IEC standard. Traditionally we have equipment standard and NEC. NEC is for installation. We're trying to change an equipment code to fix an installation problem.

Don: NEC doesn't apply to communication wiring. All we can do is say that two different products are not required.

Jim: The issue is that you can build equipment, but can't deploy it.

Don: Still time to fix what needs to be fixed.

Jim: Does TC108 know about work in the ITU-T?

Don: No

Jim: If ITU-T K.50 is being changed to address the issues, would TC108 consider these?

Paul: IEC is political. This is what makes changes hard.

Don: I'm being sought out as the expert in telecom. Members of the Chinese National Committee brought up the use of IT power systems. They tried to get my buy-in. There are no requirements for this in the IEC62368 std. The Swedish group proposed adopting the GR487-CORE std for battery cabinets. Proposal was rejected because there is no IEC test. The decision of the chairman was that adding a new test would risk rejection of the changes already in progress.

Paul: Changes in ITU-T K.50 would have more importance in influencing a change than a proposal.

Jim: Let TC108 know that ITU-T K.50 is being changed.

Don: Rich Nute is working on touch currents. There is some concern on how to deal with it in telecom equipment.

6. Protection of DC feeds to radio equipment at the top of towers – Al Martin

This is an issue that has a lot of interest with outdoor wireless installations.

- a. What protection is typically installed on equipment that will be located at the top of towers, and is any consideration given to the height of the tower?
- b. What lightning waveshape is considered when designing protection for equipment to be located at tower tops?
- c. Is there any information about the failure of installed protection to protect equipment located at tower tops?

7. Additional agenda items

8. Old Business

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Next meeting – Proposed **Wednesday, 24 June 2015**.

Respectfully submitted

Al Martin, Secretary