

## IEEE Product Safety Engineering Society

Minutes of the IEEE PSES TSTC teleconference held Wednesday, January 27, 2016 at 11:00 AM EST, for one hour.

### 1. Attendance/Introductions

Members present: Don Gies (Alcatel-Lucent), Al Martin (retired), Maytum (MJMaytum), Paul Ng (GE Energy), Joe Randolph (Randolph Telecom), Dan Roman (Colgate Palmolive), Jim Wiese (Adtran).

Members absent: Peter Lim (Alpha Technology), Gary Schrempp (Dell), Tom Smith (TJS Technical Services Inc), Svetlana Ulemek (Burndy), Steve Zugay (Cree). Anne Venetta-Richard (Alcatel-Lucent), Philip Havens (Littelfuse),

Interested parties (not present)

Tim Ardley (Adtran), Doug Parker (Adtran), Peter Tarver (Enphase Energy)

### 2. Meeting arrangements

**Note that the bridge number has changed.**

#### **New Bridge No.:**

(Toll Free-USA): +1 866 606 3804

(Toll Free -UK): 0800 026 0282

(Direct Dial USA) +1 404 891 5272

(Direct Dial – London) +44 20 7660 2135

**Participant Passcode:** 589 138 2663

For this meeting, we will attempt to share desktops using Lync/Skype for Business. If you haven't used this software, I recommend that you play with it to get it right. Usually, the web-based app seems to work the best.

**SKYPE/Lync Simulcast: Click on the link below to view presentation in your browser or Skype App. Good luck!!!!**

#### **Join Skype Meeting**

<https://meet.lync.com/alugroup-alcatel-lucent/don.gies/4PCVH1HA>

[First Skype Meeting?](#)

### 3. Previous meeting minutes (attached)

The minutes of the December meeting were reviewed.

### 4. New business?

a. GR-487-CORE, Issue 5 TTF started

Jim: Isolating battery rejected.

Don: I don't recall that.

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Don: Safety issues – Standards used for wireless cabinets. If you have batteries and electronics the IEC now lets you mix cabinets. Heat exchangers not now used as much in cabinets. Now use fresh air filters that are waterproof (Goretex). This is now a conditional requirement in GR-487. If customer says it's OK, then you build it this way. If you have a mixture of batteries and electronics in the same compartment it's OK if you use fresh air filters.

Don: The IEC published 60950-22 which contains a lot of the battery safety things we did this here 6 years ago. The changes seem to be tweaks.

Don: RRH touch temperature limits are an issue, particularly if equipment is installed in 55 deg ambient and the internal limit is 70 deg.

Jim: Can you put a "hot" label on it?

Don in IEC 62368 there is a section for touch temperatures. It says the tests are done at 25 deg – don't normalize for the ambient. No NRLs use IEC 62368. We use solar shields to protect the hot-spots. In Europe you don't need to worry about the ambient temperature issue - just use EN62368-1 and self-declare.

Jim: The hottest temperatures we have seen are around 45 deg, so 55 deg seems excessive. We use 40 deg outside ambient, and assume solar loading, but 55 deg inside.

Don: Suppose you have a hot unit – if you're instructing service personnel that unit could be over 90 deg, could tell them to shut off the equipment for a period of time and let it cool.

Joe: Rich Nute gave a presentation on touch temp. The burn hazard is a function of the time you're in contact, and the material. It didn't get into IEC 62398.

Jim: Last week was the ATIS meeting. Surface temp requirement was discussed and sent out to ballot. Essentially cut and pasted table from 60950-1.

Don: Need to protect against accidental contact.

Paul. IEC 62368 thinks the requirements for touch temperature are clear, but they're not.

Don: If solar shields are put on the equipment, the equipment may not fit in the space allowed. But if you're using them as heat shield, you need them. It's an issue in Europe, where solar shields aren't used.

Don: It would be good to push for a CTL for the IEC to use an interpretation based on GR-60950

Don: If a battery cabinet separate is hooked up to DC power supply, the positive string is where you put your main battery fuse.

Jim: Ernie not familiar with anyone doing that.

Paul: What is the problem?

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Jim: GR-47 is being revised. There are 3 issue reports. One company is trying to drive an isolated battery requirement into the standard. Then the only place you could bond is to the positive terminal. So a fuse couldn't be put there.

Don: The reason for not putting fuse in negative lead is that if there is a fault in the middle of the string you won't see it. If the fuse is put in the positive lead, and fault will blow the fuse. Can't catch it any other way.

Jim: 3 issues in GR-487. Wanted to fix the polarity – no discussion of positive or negative. Didn't want battery to be bonded anywhere except at the battery in one place. Wanted to do a 2-wire rather than a 3-wire system.

Don: Someone asked if there was a problem with not connecting the battery correctly.

Jim: Dan McMenamin is giving a presentation on these issues at PEG. It got rejected in GR-47. The issues report thought that this was a safety issue.

Paul: It becomes an emotional hot-button.

Paul: Is bonding done differently in Europe?

Jim: Mesh bonding is used.

Joe: At the NEBS conference 2 interesting things, one being protectors for Ethernet. I Can't find a primary protector for Ethernet. I found one that claims to be UL-listed. I took it apart, and it's hopeless. They reference a UL file number. The file lists many products, but not this one. I'm trying to demonstrate that it is or is not possible to make an Ethernet primary protector (but not with a modular jack). The fuseless types wouldn't handle it. If you have fuses the need goes away. My current investigation is to see if a fused version of a primary protector would work.

Don: The requirement is not clear. Depends on where the protector is placed.

Joe: The most promising approach would be to have a telecom fuse in the protector. It's not clear whether it would meet GR 497 requirements.

Jim: 497 has a bug in that assumes no voltage greater than 600 V. But when the fuse opens you get a large voltage across it.

Joe: 497 says that only the allowable failure mode is to fail short; but a fuse is allowed if there is back-up air gap.

Jim: The codes say the fusing has to be in a shielded outside plant cable or in an entrance terminal.

Joe the other thing I learned at the NEBS conference is that the NEC code 840 is being modified to include anything that is premises powered.

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Don: Powered Ethernet gets thrown back to section 800. If a lightning hazard exists, a primary protector is required.

Joe: If the cable is not "exposed", don't need a primary protector.

Joe: EMC protection is now expected to meet international standards (not GR-1089). There doesn't appear to be a movement in Telcordia to update GR-1089.

Don: The Ericsson Swedish IEC representative is now trying to get the GR-1089 requirements into the IEC. In past Ericsson wouldn't use GR-1089, but now that they own Telcordia, they are.

Jim: Liaison between ATIS and IEC has fallen apart, because have different intellectual property requirements. Is IEC doing anything about our submittals?

Mick: No.

Joe: Is there battery backup for cell towers?

Don: Yes – 8 hours.

Jim: How do we get a copy of the latest version of IEC62368-3?

Don: I'll send out a copy. The last draft is in harmony with the electric code.

Jim: Span-powered equipment may now not have to be listed.

### **5. Protection of DC feeds to radio equipment at the top of towers**

- 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?

### **5. Additional agenda items**

None

### **6. Old Business**

None

### **Next meeting**

Proposed Wednesday, 24 February 2016.

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Respectfully submitted  
Al Martin, Secretary