

## **IEEE Product Safety Engineering Society**

Minutes of the IEEE PSES TSTC teleconference held Wednesday, June 24, 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), Dan Roman (Colgate Palmolive), Svetlana Ulemek (Burndy), Jim Wiese (Adtran).

Members absent: Tim Ardley (Adtran), Peter Lim (Alpha Technology), Doug Parker (Adtran), Gary Schrempp (Dell), Tom Smith (TJS Technical Services Inc), Peter Tarver (Enphase Energy), Steve Zuguay (Cree). ), 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?**

North Jersey Section – EMC/Product Safety Chapter had first meeting Wed., Jan 10, 2015 – Dan Roman

East Stroudsburg University, East Stroudsburg, Pennsylvania looking for old test equipment.

### **5. Summation of Touch Currents (See Attachment from Joe Randolph)**

62368-1 revision: Rich Nute asked for comments about the summation of touch currents requirements.

Don looked at UL1459 provisions for summation of touch currents.

Joe: I tried to make sense out of touch currents for Rich Nute. As the requirements were put into to UL60950 and UL62368, they were messed up.

Don: PBX testing requirements were in UL1459. North American deviation in UL60950: If ringing voltage occurs on more than one line, then apply the ringing signal to 3% of lines.

Joe: I wasn't aware of the requirements in UL60950 5.8 for ringing currents. I've just used the touch current requirements, and those seemed to be adequate.

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Joe: The other requirements in UL60950 basically cover the requirements for PBX. What's in UL62368 for touch currents is a mess.

Jim: Can't we just eliminate the touch current requirements?

Joe: TC108 wouldn't allow that.

Joe: Basically the touch current requirement is theoretical.

Don: If you go to the leakage current requirements there are a bunch of exceptions.

Joe's comments on the document he sent out: Page 1 was a summary of requirements. Standards talked about currents into and out of the Network. Figure W.3: Each terminal has a wallwart supply. So every extension can have a leakage current. What if they all added up? They don't talk about the current going into the Network. What about the current coming in? The vast majority of PBXs have a permanent ground. When they tried to extend the requirements to UL62368, they created concept of "external circuit". So now we have a generic box with cables going into and out of the box. What would happen if the leakage currents all added up?

Jim: What about induction? It can cause amps of currents.

Joe: If you do what clause 6 requires, then you have covered the requirements in clause 5.8.

Jim: The 3.5 milliamp requirement in 5.8 pales when compared to currents from induction.

Don: Is there an exemption for systems with a permanent connection to ground?

Joe: Any box with less than 20 ports, skip the test. Grounding the box defeats the leakage current.

Joe: I'd like to keep this as an agenda item to think about for the next meetings. We have a goofy requirement that no telecom person would have put in the standard.

Dan: We were required to do testing with these arbitrary values of leakage current.

Dan: We had some cards with 16 ports, and the base equipment had 16 slots. We only tested the card. Did the maker of the box test for the summation of leakage currents?

Joe: UL62950-3 didn't do a good job of explaining what the tests apply to. Figure W.3 is not specific for telecom equipment.

Don: The extensions don't have to be telecom. Could be HDMI.

Joe: I will try to find out what the standard says the touch current test applies to.

Don: Look at the North American deviation to see if it makes sense.

Joe: The way the standard is written, it is impossible to test the equipment.

## **6. K.50 Updates – Voltage environment Classifications –Mick Maytum**

At a recent ITU-T SG5 WP1 , Mick Maytum presented a comparison of IEC 60950-1 and IEC 62368-1 terms as ITU-T Recommendation K.50 needs to bridge the past and future equipment standards. A copy is attached.

Mick: K.50 is based on IEC60950-1. We need to provide a bridge to IEC62368. I went through IEC60950 to find terms that are normally used, and then tried to find the equivalents in IEC62368. IEC62398 doesn't define what ES-1, ES-2, ES-3 mean. They cover many things aside from voltage. I went through the comments in the RFT document, to pick up the extra terms that have come up. I haven't seen the resolution of the comments. What I contributed is a first pass of what we'll need for a bridge. This contribution is planned be an appendix to K.50

Jim: Wouldn't this proposed annex apply to several documents?

Mick: ITU-T is hot for supplements, which are annexes that apply to several recommendations.

Mick: I will revise my contribution after reviewing the resolution of the comments, and provide it to the next meeting.

Mick: As you go through IEC62368 you find conflicts in requirements

Joe: If examine Table 14, you can see how ambiguous it is. For example ID-1 is paired conductor, and the standard says it has 1500 V transients on it, but doesn't say that the requirements are for outside lines.

Mick: In 62368 they talk about capacitance being greater than 300 nf or greater. What does that mean?

Don: There aren't any requirements for inductors. Any requirements for these?

Mick: Over 200 mJ is dangerous.

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Joe: Old analog circuits had 10 H coils which could deliver over 1000 V on disconnect.

Phil: K.50 is a work in progress.

Jim: What happened last week with the document I submitted?

Phil: I'm not ready to make comment yet

Mick: K.50 has an old structure, which I'm revising. Many of normal references could go into the bibliography. K.33 is the first document reference, which has been withdrawn! I'm working to get K.50 into modern structure – purely editorial work.

Jim: I'm working on a UL62368 revision. Based on that I've sent a proposed revision to K.50 to Phil.

Phil: ITU-T has to be careful about using US standards as prescriptive in K-recommendations.

Jim: We're using limits from GR1089 as part of the recommended changes to K.50.

Joe: I've gotten a bit behind in reviewing documents.

Don: What is the time table for approval of changes to K.50?

Phil: I would expect at least 6 months away due to the number of steps that have to be taken.

Don: If ITU says we're going to publish these requirements I would expect the IEC to accept them.

Mick: Jim talks about GFCI which is mentioned only in a note in the IEC. IEC uses the term RCD.

Jim: The service providers have no problem with class A2 requirements in standards. Service providers don't use class A3 circuits, so can ignore these.

## **7. SC22E United States technical committee on stabilized power supplies – Paul Ng**

ANSI and UL have agreed to reinstate the SC22E United States technical committee on stabilized power supplies. Kevin Ravo is the committee secretary.

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This is relevant to the telecom audience since telecom centralized dc mains power distribution requirements from UL1801 (QPOY)/ IEC61204-7 1st Edition have been ported over to the IEC61204-7 2nd Edition.

Paul: Bulk power – UL60950 going away is causing all kinds of problems. The industry doesn't want to use UL62368 - use UL62477 instead. UL DEMCO added an annex for bulk power. The TAG for this is for SC22e, not TC108. Voting on changes is in September.

Jim: Is this for 48 V or 340 V?

Paul: 48 V. 340 V is another committee.

### 8. Additional agenda items

#### 9. Old Business

a. *New RFT standard –IEC 62368-3*

Don: Anything to bring up?

Joe: No just wanted to bring up the touch current issue.

b. *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.*

- i. 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?
- ii. What lightning waveshape is considered when designing protection for equipment to be located at tower tops?
- iii. Is there any information about the failure of installed protection to protect equipment located at tower tops?

c. *ATIS activity*

Jim: ATIS is pushing 060037 for RFT circuits.

Next meeting – Proposed **Wednesday, 22 July 2015.**

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Respectfully submitted

Al martin, Secretary