

## **IEEE Product Safety Engineering Society**

Minutes of the IEEE PSES TSTC teleconference held Wednesday, February 26 at 11:00 AM EST, for one hour.

### **1. Attendance/Introductions**

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

Members absent: Tim Ardley (Adtran), Philip Havens (Littelfuse), Mick Maytum (MJMaytum), Doug Parker (Adtran), , Tom Smith (TJS Technical Services Inc), Steve Zugay (Cree), Peter Lim (Alpha Technology), Gary Schrempp (Dell), Peter Tarver (Enphase Energy), Anne Venetta-Richard (Alcatel-Lucent)

### **2. Meeting arrangements**

Don Giess 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**

The minutes from the last meeting were approved as submitted

### **4. New business**

Any new business?

### **5. Lightning Surge Damage to Ethernet and POTS Ports Connected to Inside Wiring - Joe Randolph**

Per recommendation from TSTC, Joe Randolph has begun to draft a proposed paper to submit at the ISPCE 2014 Conference in San Jose, CA (attached).

Joe: Waiting to hear if his paper has been accepted [deadline has been extended]. Question for Jim: What ports do you have on your ONT? Verizon ONTs have two ports coming out of the ONT: A single Ethernet output and a coax output. Verizon's preferred installation is to connect a coax to Verizon supplied router, and not use the Ethernet port.

Jim: 90% of our ONTs don't have coax output. An Ethernet port goes to a router supplied by service provider. Ethernet port: Some installations use broadband Ethernet [UMA] boxes. The UMA box has to be the first before router. Few customers use coax.

Joe: Verizon wants a coax port because many houses are already wired with coax [for cable service].

## IEEE Product Safety Engineering Society

Jim: A few of installations that had coax connectors show damage due to arcing and sparking.

Don: My house has cable TV and copper coming in. Fiber comes in via conduit, and is terminated on an ONT. One ONT port is connected to cable [goes to TV and router]. Voice is stripped off and goes to twisted pair.

Joe: Verizon routers have single Ethernet port which is seldom used. Apparently carriers have different ways of doing things.

Jim: Video over coax is dying fast, and is being replaced with video over IP. There is a constant evolution of installation types.

Joe: Surges on coax ports are probably coming from same source as other ports. I had a case where power supply had violated creepages and clearances. A breakdown occurred here, which then cascaded to failures in the attached equipment.

Don: I will submit a paper to the ISPCE 2014 Conference, but I haven't settled on the content yet.

Dan: The work that the group is doing on Ethernet protection is good stuff. The IEEE Consumer Electronics magazine will be provided to PES members. The CE Magazine would like one technical article every month, and an article on Ethernet protection would be good. There are 4 issues per year.

Don: What would be the best way to do that?

Dan: A version of Joe's ISPCE 2014 Conference paper could be used, but may need to be adjusted fit magazine format. There is a PSES editor who interfaces with the editor of CE magazine.

Joe: There may be a copyright problem with reproducing the ISPCE 2014 Conference paper in CE Magazine. I could write a paper addressing Ethernet protection that would avoid the copyright issue.

Don: IEEE would already own the copyright to meeting paper, so reproducing the Conference presentation in CE Magazine should not be a problem.

Dan: CE wants more articles on safety. Would like us to commit to one article per issue. Basically we could lift content from the PSES TAC and make it into an article.

## 6. Proposed Changes to UL50/UL50E – Don Gies

In the latest proposed revision to UL 50, 12 Edition, UL is proposing disallowing the use of magnesium cast enclosures under UL 50. However, outdoor telecommunication enclosures are evaluated using UL 50 and UL 50E in conjunction with one another, and manufacturers are choosing magnesium/aluminum alloy enclosures for outdoor equipment such as remote radio heads for aerial mounting because they are lighter than aluminum enclosures.

## IEEE Product Safety Engineering Society

Tom Burke, UL – Responded to Don's email, suggesting that there are enough requirements in the base standards IEC 60950-1 and IEC 60950-22 to compensate for the potential disallowance of magnesium in UL 50/CSA C22.2 No. 94.1.

Don: UL/CSA/Mexico proposing the elimination of the use of magnesium. Some manufacturers use aluminum-magnesium alloy for light weight. Don sent proposal to Tom Burke asking about the new proposal for UL certification. Tom thinks it won't be a problem – UL 60950 doesn't forbid the use of magnesium. UL 60950 takes precedence over other standards, so magnesium should be OK. Could use the NEMA rating

Don forwarded the proposed revisions to IEC 60950-22 to us. Of significance are the following:

1. The mains transients for DC to be 1.5kV unless known (4.2.3).

Don: This revision may require surge protection on DC lines.

Dan: This requirement is used for creepage and clearance distances.

Paul: Clearance will be 1 mm.

Don: Dielectric breakdown voltage may go up.

Paul: If the transients are unknown, then use one level higher of insulation requirement.

Don: Overvoltage categories don't apply to DC systems.

Paul: Do we want to make a proposal to the US TAG on this?

Don: I don't think a proposal is necessary at this time. Regarding the NEMA rating, take a wait-and-see stance.

2. Convenience outlets have to be RCDs (6.3) (that will change to GFCI in US and Canada).
3. ISO standards plus "equivalent standards" have been added to the resistance to corrosion section (8.3).
4. Protection from plants and vermin is in accordance with IEC 61969-3 (9.2).

Don: This may be an issue if ventilation is needed for batteries. Probably means that you can't use just a screen. Gore-Tex is effective at keeping out water, but letting in air.

5. There is a minimum IP5X rating for dust protection (9.3.2, 9.3.3) (I don't think that really changes anything, but it will be interesting to see the UL/CSA equivalent).

## 7. Additional agenda items

None

## 8. Old Business

Proposal for venting battery cabinets:

## **IEEE Product Safety Engineering Society**

Don: Concern with hydrogen build-up in batteries was expressed in a previous proposal to UL and Canadian TAGs. The proposal hasn't been sent to IEC yet. Ask Tom Burke to push forward the proposal for hydrogen venting. Equipment meeting UL60950 still explodes. The ventilation requirement was made part of GR487.

Don: Looking for clearance to go to the TAG meeting. Paul will go. We need to advocate for the hydrogen proposal.

### **Next meeting**

Proposed Wednesday, 19 March 2014, at 11:00AM EST

Respectfully submitted,

Al Martin

Secretary

Participant	Employer	Telephone	E-mail	IEEE Member?	PSES Member?	LinkedIn Subgroup	Other Committee
Tim Ardley	Adtran		tim.ardley@adtran.com				
Don Gies	Alcatel-Lucent	+1-908-582-5978	don.gies@alcatel-lucent.com	X	X	X	8
Phillip Havens	Littelfuse	+1-214-450-9658	phavens@littelfuse.com			X	2
Peter Lim	Alpha Technologies	+1-604-638-8687	peter.lim@alpha.ca				
Al Martin	Somewhat retired	+1-510-339-2859	amartin@yahoo.com	X		X	3,4
Mick Maytum	Retired	+44-1234-838589	m.j.maytum@ieee.org				3,4,5
Paul Ng	Lineage Power	+1-972-244-9492	paul.s.ng@ge.com				
Doug Parker	Adtran						
Joe Randolph	Randolph Telecom	+1-781-721-2848	jpr@randolph-telecom.com	X	X	X	4
Dan Roman	Colgate Palmolive		dan.roman@ieee.org	X	X	X	
Gary Schrempp	Dell	+1-512-724-3757	gary_schrempp@dell.com	X	X	X	
Tom Smith	TJS Technical Services	+1-403-612-6664	tsmith@tjstechnical.com			X	6
Peter Tarver	Enphase Energy	+1-707-763-4784	ptarver@enphaseenergy.com	X	X	X	
Anne Venetta-Richard	Alcatel-Lucent						
Jim Wiese	Adtran	+1-256-963-8431	jim.wiese@adtran.com			X	2,4
Steve Zugay	Cree	+1-919-850-6219	szugay@bellsouth.net			X	

Guest: Jack Burns, Dell, IEEE PSES, VP Technical Activities

Chair: Peter Tarver

Vice Chair: Don Gies

## **IEEE Product Safety Engineering Society**

Secretary: Al Martin

- 1) UL Standards Technical Panel for Subjects 60950-1, -21, -22, -23
- 2) TIA TR 41.7, TR41.7.1
- 3) IEEE Surge Protective Devices Committee
- 4) ATIS Protection Engineers Group
- 5) ITU-T, SG5, WP1
- 6) Canadian National Subcommittee for IEC TC108
- 7) TIA TR 41.7.10 (Smart Grid)
- 8) US TAG to IEC TC 108

### Other LinkedIn members:

hifi cha, China (Independent Consumer Electronics Professional)

Jeff Whitmire (Manager, Regulatory Compliance at Adtran)

## **Telecommunications Technical Activities Committee Roster**