

IEEE PSES TSTC  
Meeting Minutes: 18 August, 2010

Attendees: Al Martin (Tyco/Raychem), Mick Maytum (MJ Maytum), Joe Randolph (Randolph Telecom), Dan Roman (Dialogic), Peter Tarver (Ericsson), Jim Wiese (Adtran), Steve Zugay (Alcatel-Lucent)

Introductions

Introductions were waived for prior teleconference attendees.

Administrative topics

1) The minutes from the last meeting were approved as submitted

Discussion topics

1) Jim Wiese discussed the GR1089 proposal to replace carbon blocks with the high-level GDT from GR974 as the default protector. This wouldn't affect the lightning values in standards, but would drop the AC tests from 600 Vrms to 425 Vrms.

2) Don Gies discussed his issue of the outdoor battery cabinet explosion prevention. He sent a presentation [IEEE Telecom TAC Issue: Explosions of Equipment Containing Lead-Acid Batteries] to the E-mail exploder. The presentation was used as the basis for his discussion. The problem seems to be a European phenomenon. The problem started appearing in 2006. Don will send a copy of his last year's PSES Symposium paper to the E-mail exploder, for review of the group. Don noted that units which pass testing in the lab sometimes fail under normal operation in the field. There was discussion about changing standards to address this issue. Discussion will continue at the next meeting.

3) Jim Wiese briefly discussed the proposal in his 8/18/10 E-mail:

**PROPOSAL**

Provide a North American deviation in 60950-21 so that -21 aligns with GR-1089-CORE Issue 4 and UL-2444. This deviation would only apply to equipment that is located on the service providers' side of the demarcation point, or for equipment that makes up the point of demarcation. This equipment is covered by the scope of the proposed UL 2444 standard, and will not be subject to these extra requirements following the publication of UL 2444. Therefore no reduction in safety occurs. Since this has no impact on the ITE world or for consumer equipment, this is the least controversial route to correcting the problems with -21. This proposal only requires adding a couple sentences to the scope and adding a normative annex. This leaves the remainder of the document "as is" for equipment not used by service providers or under the proposed scope of UL-2444.

This deviation is consistent with current practices, aligns with other ANSI standards such as T1.337-2003 that was developed by NEP, aligns with GR-1089-CORE, and captures the intent of the letter NIPP-NEP sent to UL in 2003. It also helps alleviate the discontinuity between UL-2444 and UL 60950-21.

In addition, this proposal would prevent RFT-C voltages that are not allowed in North America per GR-1089-CORE from be applied to service providers' networks or facilities. It would not prevent the use of RFT-C circuits in private or campus networks, or on the customers' side of the demarcation point (provided a connection of the RFT-C circuit is not made to the public telecommunication network).

**Specific suggested changes to accomplish this in UL 60950-21 are as follows:**

1.) Section 1: Add this text at the end of the existing text for scope

*Telecommunications Equipment that is intended to be owned, operated and maintained by the telecommunications service provider (such as a LEC) and is intended to be located on the service providers side of the demarcation point or that makes up the point of demarcation shall not be required to meet specific criteria in this standard as described in Annex C. There may be additional criteria that apply. See normative Annex C for more details if this situation is applicable.*

2.) Add a normative Annex C that addresses appropriate criteria for service provider equipment.

*“In North America, the requirements for equipment with RFT circuits that are part of the service providers’ network were developed by the Bell System and are typically dictated by Telcordia GR-1089-CORE issue 4, ANSI T1.337-2003 and UL-2444. The deviations in this Annex are necessary in order to align UL 60950-21 with the infrastructure and practices of the telecommunications utilities in North America as well as ANSI standards. The following Table provides the criteria for service provider equipment as described in the scope of this standard:*

*Note: UL-2444 may still be under development. If UL-2444 is not available, Telcordia GR-1089-CORE issue 4 and UL Subject 2391 should be utilized.”*

<i>Section 4.1</i>	<i>Not required</i>
<i>Section 4.2</i>	<i>Not required. Relevant accessibility criteria from UL-2444 or Telcordia GR-1089-CORE Issue 4 should be utilized.</i>
<i>Section 4.3</i>	<i>Not required. Relevant accessibility criteria from UL-2444 or Telcordia GR-1089-CORE Issue 4 should be utilized.</i>
<i>Section 4.4</i>	<i>Not required. Relevant accessibility criteria from UL-2444 or Telcordia GR-1089-CORE Issue 4 should be utilized.</i>
<i>Section 4.5.1</i>	<i>Not required</i>
<i>Section 4.5.2</i>	<i>Not required</i>
<i>Section 5</i>	<i>Note: An RFT-C circuit is not permitted to be connected to a service providers Telecommunications Network, unless it also meets RFT-V limits.</i>
<i>Section 6</i>	<i>Not required. Relevant accessibility criteria from UL-2444 or Telcordia GR-1089-CORE Issue 4 should be utilized.</i>
<i>Section 6.1</i>	<i>RFT-C shall not be permitted on the service providers side of the demarcation point in North America, unless it also meets RFT-V limits. RFT-C circuits are permitted in controlled private networks or on the customer side of the demarcation point (if otherwise allowed by this standard).</i>
<i>Section 6.2</i>	<i>Permitted. Compliance with UL-2444 or GR-1089-CORE Issue 4 is strongly preferred, and will likely required by the service provider.</i>
<i>Section 6.3</i>	<i>Not Required</i>
<i>Section 6.4</i>	<i>Not required</i>

Question: Should this be a North America deviation, or should it apply more widely. Discussion will be continued at the next meeting

4) Mick was asked to summarize his contribution on wiring simulators. Mick said that Joe Randolph’s E-mail summarized his contribution well [see following]:

Past studies suggest that the "worst case" customer premises wiring is the so-called tinsel wire that is sometimes used in modular phone cords. It appears that to prevent this type of cord from presenting a safety hazard, currents should be limited to the following:

- I2t of 40 for short duration surges

- 7 A for 5 seconds
- 2.2 A continuous

Wiring simulators presently in use sometimes fail to limit the current to the above levels. Following are four specific examples:

- a) A bare 32 AWG wire, allowed as a wiring simulator in UL 60950, will carry 7A continuously, which greatly exceeds the above 2.2 A limit.
- b) The 100 I2t limiting that UL 60950 allows for waiving Test 1 exceeds the above limit of 40 I2t.
- c) The 3A continuous current allowed by GR-1089 exceeds the above 2.2 A limit.
- d) In general, the heating and fusing characteristics of common fuses and/or wire segments are not sufficiently repeatable for use in a laboratory test.

Mick said that the next step is to define a wiring simulator curve.

Joe said that the current measurement needs to be true RMS.

5) Mick said in an 8/18/10 E-mail that

This weekend came with good and bad news - the result of voting for 108/363/NP: IEC 6XXXX TS Ed 1.0: Power contact between a.c. mains and external circuits.

Voting

P-members approving: 19 = 79.2 %	> 50%	APPROVED
P-members ready to participate in the development and approving addition of the proposal: 0	>=5 (if >= 17)	REJECTED

The proposal is not approved (Pause to do Dilbert victory dance)

6) Mick commented that when doing overcurrent tests, the phase angle at which the current is applied is much more important than the voltage. Discussion from the group supported this notion. Mick said that the phase initiation values in UL subject 2564 may be appropriate, if existing tests are to be modified.

7) The meeting time will be moved to the 4<sup>th</sup> Wednesday of the month, to allow more time for discussion [the present schedule conflicts with the GR-1089 teleconferences]

Next meeting

22 September 2010

Respectfully submitted,

Al Martin  
Secretary

**IEEE Product Safety Engineering Society  
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Guest: Jack Burns, Dell, IEEE PSES, VP Technical Activities

Chair: Peter Tarver  
Vice Chair: Don Gies  
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)

Other LinkedIn members:

hifi cha, China (Independent Consumer Electronics Professional)