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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE Nº 108: SAFETY OF ELECTRONIC EQUIPMENT WITHIN THE FIELD OF AUDIO/VIDEO, INFORMATION TECHNOLOGY AND COMMUNICATION TECHNOLOGY

MT2 Standards Advisory Panel - Q.51

TC74 established a Chairman's Advisory Panel (CAP) in 1987. The purpose of the Panel was to provide the opinion of experienced members of TC74 to questions of the intent of specific requirements in IEC 60950. In October 2001, TC74 merged with TC92 to form TC108. Within TC108, MT1 and MT2 were formed to handle work associated with the maintenance of the IEC 60065 and IEC 60950 series of standards respectively. It was agreed in the November 2002 plenary of TC108 that the Standards Advisory Panel of MT2 (formerly the CAP) would continue to respond to questions about the IEC 60950 series of standards.

The following notes are to be read in conjunction with Opinions of the Standards Advisory Panel.

1. The Panel consists of active members of TC108/MT2, but its Opinions are those of the Panel and are not voted decisions of the IEC.

2. If it is felt that the Question arose due to lack of clarity in a Publication, the matter is brought to the attention of the appropriate group in TC108/MT2.

3. Panel Opinions are restricted to interpretation of the words of the Publication in question, as the members of the Panel recollect the original intentions of TC108/MT2.

4. The use made of Panel Opinions by the originators of Questions for Interpretation, and by others, is their own responsibility. No guarantee can be given that a subsequent amendment of the Publication will support the Opinion.

Questions related to the IEC 60950 series are welcome. Such inquiries are to be forwarded through the questioner's National Committee to the TC108 Secretary. Responses are sent directly to the questioner, are shared with TC working group members through the TC108 IEC web site and sent to the Secretary of the IECEE/CTL for consideration.

TC108/MT2 Standards Advisory Panel **QUESTION 51**
October 2006

IEC 60950 Ed. 2 (subclause 5.3.2)
IEC 60950, Ed. 3 (subclause 5.2.2)
IEC 60950-1, Ed. 2 (subclause 5.2.2)

Background:
In Japan, there is some confusion with the application of the Electric Strength Test in production (as routine test) to the finished equipment, in the scope of IEC 60950-1. Japanese IT industry believes that it is common practice widely performed in worldwide for several decades, to apply the electric strength test with the reduced duration between 1 s and 6 s, with the test voltage in accordance with Table 5B in IEC 60950-1.

Recently, however, another interpretation has been discussed in Japan that although the practice used to be authorized based on the statement in the note in clause 5.3.2 of IEC 60950:1991 (2nd edition), it is not allowed anymore after the release of IEC 60950:1999 (3rd edition) or later editions, because the note in clause 5.2.2 is stated differently than 2nd edition and there is no description specifying how the routine test should be done elsewhere in the standard.

The following is the comparison among three editions:

> Note 1 in Clause 5.3.2. (IEC 60950:1991 2nd Ed.): For production test purpose, it is permitted to reduce the duration of electric strength test to 1 s.
>
> Note 1 in Clause 5.2.2 (IEC 60950:1999 3rd Ed.): For ROUTINE TESTS specified elsewhere in this standard, it is permitted to reduce the duration of the electric strength test to 1 s.
>
> In IEC 60950-1:2005 (2nd Edition) this text has been made normative and reads as follows: Where, elsewhere in this standard, ROUTINE TESTS are required to be conducted in accordance with 5.2.2, it is permitted to reduce the duration of the electric strength test to 1 s and to reduce the test voltage permitted in Table 5C, if used, by 10 %.

It is widely understood that the electric strength test time needs to be controlled to short duration, because if test voltage is applied for longer time, partial discharges may occur in solid insulation, and cause undetected insulation damage. This can result in unnecessary insulation failures during subsequent product use, and shorten the product's life span, as this does not only apply to internal parts and components, but also to the complete equipment.

Questions to the Panel:

1) Is it the intention of TC108 that the requirements of IEC 60950-1 clause 5.2.2 is to accept the application of the electric strength test in the production (routine test), to the equipment, (including components or material) reduced to 1 s or not?

2) Also, in case it is acceptable, if the test voltage should be in accordance to Table 5B in IEC 60950-1 or not?

Opinion of the Panel:

1) Yes

2) Yes

Action

An attempt will be made during the release of proposed Amendment 1 to the standard to clarify the requirement to avoid the need for an interpretation. This work would be taken on by the editing committee and added to the amendment.