

Subjects 217 (268)
(In reply, refer to Subject 217)

1655 Scott Blvd.
Santa Clara, CA 95050
April 4, 2003

**TO: Standards Technical Panel (STP) for Smoke Detectors and Alarms
Subscribers to UL's Standards Service for:
Single and Multiple Station Smoke Alarms, UL 217,
Smoke Detectors for Fire Protective Signaling Systems, UL 268,
Smoke Detectors for Duct Applications, UL 268A
Other Interested Parties**

**SUBJECT: Report of the Meeting of the Standards Technical Panel of UL for Smoke Detectors
and Alarms
Request for Comments on the Proposed Requirements for the Fifth Edition of the
Standard for Single and Multiple Station Smoke Alarms, UL 217, and
The Fourth Edition of the Standard for Smoke Detectors for Fire Protective
Signaling Systems, UL 268
PROPOSED EFFECTIVE DATES**

A meeting of the Standards Technical Panel of UL for Smoke Detectors and Alarms was held on March 7, 2003 at Northbrook, Illinois.

Summary of Topics

Discussion Items

1. Overview of the STP process
2. Issue of children not being awakened by the sound of a smoke alarm horn.
3. Current status of NIST Smoke Alarm Project
4. Development of a proposal to require all battery-operated smoke alarms to use a type of battery not typically used in common products such as radios and portable CD players.

Specific Proposal Items

1. Alarm silencing means
2. Visual indication when a non-replaceable battery type alarm is not in operational condition.
3. Means to activate/deactivate power in alarms with non-replaceable batteries.
4. Accommodation for longer battery life.
5. Battery replacement test clarification.
6. Marking and packaging changes for clarification.

7. Clarification regarding the use of guards.

8. Smoke Box Beam Clarification

INSTRUCTIONS

STP Members:

If you are a voting member of the STP, complete the attached ballot(s) with your vote on the standard or proposals. Please note that all negative ballots must be accompanied by supporting written reasons and, where possible, proposals for a solution to the problem raised.

Impact statements and effective dates information are not subject to letter ballot. Therefore, comments regarding impact statements and effective dates may be made and should be sent to the STP Secretary separate from the letter ballot.

Subscribers and other interested parties:

If you are a subscriber or other interested party, you are requested to send comments on the proposed requirements, impact statements, and proposed effective dates to the STP Secretary. The STP member ballot should not be used to submit your comments.

Comments should be made in writing and may be sent by fax to (408) 556-6045 or by mail to the attention of Kristin Andrews at UL's Santa Clara office. Comments may also be sent via E-mail to kristin.l.andrews@us.ul.com. Please reference all correspondence to Subject 217. Note all comments received are public and may be circulated to others. If you respond by fax or E-mail, please include your full name and company name and address to ensure a reply.

STP BALLOTS AND ALL COMMENTS DUE: JUNE 4, 2003

Attached as Appendices A and B for your review and comment are proposed requirements for the Standard for Single and Multiple Station Smoke Alarms, UL 217, and the text of the current standard, respectively. Attached as Appendix C for your review and comment are the impact statements and proposed effective dates for UL 217. Attached as Appendix D is a ballot for UL 217. Attached as Appendix E are proposals for the Standard for Smoke Detectors for Fire Protective Signaling Systems, UL 268. The impact statements and proposed effective date, and the ballot for UL 268 are attached as Appendices F and G, respectively. Attached as Appendix H is the current Roster of STP members. Attached as Appendix I is a summary of discussion item two, the issue of children not being awakened by the sound of a smoke alarm horn. Attached as Appendix J is information regarding Working Groups. Attached as Appendix K is a list of those who attended the meeting. Questions regarding interpretation of requirements should be directed to the responsible UL Staff. Please see Appendix L of this bulletin regarding designated responsibility for the subject product categories.

Please note that proposed requirements are of a tentative and early nature and are for review and comment only. Current requirements are to be used to judge a product until these requirements are published in final form.

Unless specifically requested to do so, UL will not acknowledge comments indicating concurrence with these proposals.

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The following report is not intended to be a verbatim transcript of the discussion at the meeting, but is intended to record the significant features of those discussions.

1. Overview of the STP Process

DISCUSSION

UL gave an overview of the STP Process. A copy of the presentation at the meeting is available at [www.ulstandardsinfo.net/stp/addinfo/STP_217 process presentation.pdf](http://www.ulstandardsinfo.net/stp/addinfo/STP_217%20process%20presentation.pdf).

A representative of UL's Global Standards explained the importance of balance in STP membership among the Producer, User, and General Interest categories. Recognizing that equal mathematical balance is difficult to achieve and maintain, UL nonetheless strives for an STP membership consisting of 1/3 of the membership from each of the interest categories. At no time should any single interest group comprise more than fifty percent of the membership.

All STP members are encouraged to contact the STP Secretary with suggestions for additional candidates for membership in the General Interest category. If you do not have a specific contact, let the STP Secretary know of a suggested company or agency and she will research a contact. Below is a description of the membership category:

General: This category typically includes trade associations, professional and lay people employed by academic and scientific institutions, experts, government agencies in a non-regulatory capacity, insurance companies, utilities, etc.

There are two tests for consensus which must both be met in order for a change to be made to the standard: two thirds of the vote cast, excluding any abstentions, must be in favor of the change, as must a majority of the total membership.

The goal of using the STP process is to have a consensus body that produces ANSI standards. Previously UL developed standards and then sent them out to canvass. Using the STP process expedites changes while maintaining a balanced perspective. UL having only one voting member on this committee is evidence of this change. In addition to UL having only one voice on the committee it is appropriate that the STP Chairman have no certification interest regarding the issues under consideration. To that end UL is appointing Daniel Ryan as the Chair of this STP. He will act as convener for future meetings

2. The Issue of Children Not Being Awakened by the Sound of a Smoke Alarm

The STP meeting was suspended for this discussion. Please see Appendix I.

3. Current status of NIST Smoke Alarm Project

Discussion

The NIST study is a two year effort. Approximately 40 experiments have been completed in a few residential geometries. The data obtained is available at smokealarm.nist.gov.

The large data base available on the above web site contains information the STP can use to validate current practices and provides a valuable source of information to manufacturers. The nuisance alarm chapter of the report presents a significant amount of data on the response of analog devices both in laboratory and home conditions.

One thing that has come out of the study to date is the advisability of replacing the smoke box. The new equipment is capable of testing multisensor devices in one apparatus and the results are reproducible and repeatable. This is simply a suggestion for the future.

In summary there were no findings by the study indicting major problems that require immediate fixes. No action needs to be taken by the STP at this time. When the report is made available UL will review it and make a comparison between it and the current editions of UL 217 and UL 268. Working groups will be formed to address differences.

The report of this project is nearly complete and will be placed on the NIST web site.

4. Development of a proposal to require all battery-operated smoke alarms to use a type of battery not typically used in common products such as radios and portable CD players

Discussion

This is a topic which has been raised previously. There is general consensus within the group that the issue of people removing batteries from smoke alarms for use in other household products is essentially a "legend", there is no evidence indicating that this behavior is actually occurring. Additionally, there is a concern among panel members that introducing "special batteries" would result in "special pricing" making the alarms expensive and therefore undesirable. The panel agreed that, based on the information available at this time, no action would be taken on this matter.

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APPENDIX A**PROPOSED REQUIREMENTS FOR THE FIFTH EDITION OF THE STANDARD FOR SINGLE AND MULTIPLE STATION SMOKE ALARMS, UL 217**

For your convenience in review, proposed additions to existing requirements are shown underlined and proposed deletions are shown lined-out. Proposed new requirements are identified by (NEW).

1. Alarm Silencing Means**RATIONALE**

This change would require a smoke alarm powered by a non-replaceable primary battery to be equipped with an alarm silencing feature. Without such a feature it is quite possible that the homeowner, in the event of a nuisance alarm situation such as cooking, would permanently disable the alarm, resulting in reduced protection.

PROPOSAL

(NEW)

7.3 Smoke alarms powered by a non-replaceable battery must be provided with an alarm silencing means.

2. Visual Indication When a Non-Replaceable Battery Type Alarm is Not in Operational Condition**RATIONALE**

This change would provide the user of a smoke alarm employing a non-replaceable primary battery with a prominent visual indication that the alarm was not in operating condition. When a user currently deactivates the battery on a smoke alarm using a non-replaceable battery there is no requirement for this visual indication. It is conceivable that when the battery on such a smoke alarm reaches its end of useful life and the unit begins to emit a trouble signal, the end user could deactivate the battery and then place the unit back into its normal mounting location. The end result of this would be that smoke detection was no longer provided in this location, and the user might forget to replace the alarm with a new one.

PROPOSAL

(REVISED)

8.1 Removal of a battery from a battery-operated (or AC with battery back-up) smoke alarm shall result in a readily apparent and prominent visual indication. This indication is also required for a smoke alarm that employs a non-replaceable battery with a 10-year minimum life whose battery has been deactivated. The visual indication shall consist of:

- a) A warning flag that is exposed with the battery removed and the cover closed;
- b) A hinged cover that is incapable of being closed with the battery removed; or
- c) An equivalent arrangement. (Such as an audible trouble signal on an AC with battery back-up).

3. Means to Activate/Deactivate Power in Alarms With Non-Replaceable Batteries

RATIONALE

This change would require that smoke alarms employing a non-replaceable primary battery be provided with both a means to activate the power and a means to deactivate the power when the batteries had reached the end of their useful life. It also requires that smoke alarms powered by batteries with greater than 10 years of life be constructed such that the battery is not replaceable. This effectively formalizes requirements that UL has previously applied to these types of smoke alarms. An addition to the currently applied requirement is that the activation and deactivation means be designed to be operated one time each only, and the deactivation means shall completely discharge the battery(ies). An additional instruction requirement is also proposed, see item 7.

PROPOSALS

(REVISED)

15.1.4 Ready access shall be available to the battery compartment to facilitate battery replacement, without damage to the alarm components or disassembly of any part of the alarm, except for a cover or the equivalent. When the battery is capable of powering the alarm for a minimum of 10 years, the battery shall is not required to be user replaceable.

(NEW)

15.1.6 A smoke alarm powered by a non-replaceable, 10-year life battery shall be provided with a means of activating the power prior to installation, and deactivating the battery at the end of useful battery life. The deactivation means shall require the use of a tool, or equivalent, and shall render the unit incapable of being reinstalled. The deactivation means shall also serve to completely discharge the battery(ies). Both the activation and deactivations means shall be designed to operate one time only. The installation instructions shall provide the user with information describing this one time operation. See 90.1 (o).

4. Accommodation for Longer Battery Life

RATIONALE

Smoke alarm manufacturers have been advertising longer batteries life for their products. These revisions update the standard to accommodate longer battery life. The changes made to 35.2.1 and 35.2.4 update UL 217 to indicate that the test points are to include those found at the end of the specified battery life, which can be greater than one year. The changes made to 63.1, 63.2, and 63.7 indicate that the battery tests are to be continued until the end of the specified battery life, which can be greater than one year.

PROPOSALS

(REVISED)

35.2.1 An increase in the internal resistance, or a decrease in terminal voltage, of a battery employed as the primary source of power to an alarm shall not impair operation for an alarm signal before a trouble signal is obtained. In addition, any combination of voltage and resistance at which a trouble signal is obtained shall be greater than the battery voltage and resistance combination measured over a one-year the manufacturer's specified battery life (a minimum of 1 year) period in the room ambient condition of the Battery Tests, Section 63.