

**U.S. Consumer Product Safety Commission
LOG OF MEETING**

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SUBJECT: Underwriters' Laboratories (UL) – CPSC Staff Meeting

DATE OF MEETING: 3 October 2002
LOG ENTRY SOURCE: Randy Butturini
DATE OF LOG ENTRY: 7 October 2002
LOCATION: Room 518
CPSC ATTENDEES: Randy Butturini, Arthur Lee, Lisa, Scott, Bill King, Linda Edwards, and Hugh McLaurin
NON-CPSC ATTENDEES: John Drengenberg, Robert Wozniak, and Robert DellaValle, all of UL

SUMMARY OF MEETING:

The purpose of the meeting was to discuss and explain the final report of the Fixed-Position Electric Heater Project to the visitors from UL to increase their understanding of CPSC intentions in recommending changes to the voluntary standards UL 1042 and UL 2021. Both of these standards are part of the UL Standards Technical Panel UL STP 1042.

The meeting started with a brief recap of the Fixed-Position Electric Heater Project and its recommendations to the aforementioned voluntary standards. UL stated that one of their goals was to make the three standards in STP 1042 (UL 1042, UL 1278, and UL 2021) more alike and easier to use.

The discussion then turned to the specific proposals recommended for UL 1042.

#1 *All devices shall have a Temperature Limiting Control (TLC)*

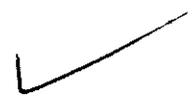
UL asked about whether particular styles of heaters (cove heaters for example) still needed a TLC. CPSC stated that many heater failures were internal and not controlled by their installation. UL wondered how much incident data would be needed to justify requiring a TLC in every unit.

#2 *Activation of a TLC shall disconnect all ungrounded conductors*

UL stated their support for this recommendation. The concern was whether a thermal cut-off for 220 VAC that would disconnect both input power lines had been invented yet. If this change is implemented quickly, TCOs may not be allowed.

#3 *Auxiliary controls shall have a position that disconnects all ungrounded conductors*

The intent of the CPSC for this recommendation was to have consumer practice match heater operation. Namely, when a consumer turns a thermostat down to its lowest setting, all ungrounded conductors need to be disconnected. A heater that is cold and looks off should not have electricity supplied to some components.



#4 *Electric baseboard heaters shall be protected by AFCI devices*

UL wondered if a Leakage Current Detection Interrupter (LCDI) would serve better than an AFCI and if large current parts were available for electric heaters. UL was supportive of the idea of adding to the installation instructions that an installation circuit must include an AFCI or an LCDI. Perhaps using the National Electric Code to require that form of circuit protection would be a useful activity.

#5 *No test shall result in wiring insulation being heated above its maximum rated temperature*

UL suggested a form of temperature test where the unit under test would be operated at the ambient temperature just below that which activates the TLC. At that condition, no wiring insulation or other components can operate above their maximum rated value. The test conditions would be held until thermal stabilization of the unit under test. CPSC stated that our aim was to not have conditions, including normal operation, result in overheated wiring insulation.

#6 *Grounding shall be designed to be more certain at assembly*

UL stated that with respect to grounding, bonding between separable units is probably not adequately addressed. UL stated that perhaps using "paint-piercing screws" would help alleviate the concern over inadequate grounding during assembly.

#7 *Test the connection resistance of crimped wire connectors during assembly*

There was much discussion on this topic. UL 2021 is now using the requirements in UL 486C (with an extended effective date). CPSC expressed concern over high current electrical connectors that were mechanically strong but had poor electrical contact (as in the case of a connector that is loose when connected, but has a mechanical detect to prevent disconnection).

#8 *Examine the heater after testing for incipient failure modes*

The elevated temperature operating test mentioned in #5 may be applicable to this circumstance.

#9 *Run the Dielectric Voltage Withstand Test after other abnormal tests*

The Dielectric Voltage Withstand Test raises the potential to 1000 volts between the two power conductors, and puts a 3-ampere fuse to ground. To activate the fuse requires pretty much a short circuit.

#10 *Apply the requirements of the section on Impacts to all heater designs*

After a short discussion, CPSC and UL agreed to not pursue this recommendation further.

#11 *Have polymeric materials next to connectors pass glow-wire ignitability or glow-wire flame tests*

UL wishes to use the same set of requirements in UL 1042 and UL 2021. They stated that recognized connectors complying with UL 746C should possess sufficient resistance to being heated to ignition.

A brief discussion on the labeling requirements of UL 1042 ensued. An email follow-up session will cover recommendations 12-15 more thoroughly.

#12 *Format labels in accordance with ANSI Z535.4*

UL suggested that including a statement that any ANSI-approved marking is acceptable.

#13 *Make label heat-resistant or located in areas unlikely to damage the label during short periods of abnormal operation*

UL stated that sometimes pre-production evaluation units don't have production-quality labels on them. Some arrangement needs to be made to deal with these cases.

#14 *Have user instructions on the heater visible without requiring disassembly*

#15 *Require separate complete instructions for the installer and the user*

These were not discussed during the meeting.

#16 *Add "no risk of electric shock" to the requirements of the Stalled Fan Test*

UL suggested adding language to the extent of avoiding shock and fire hazards for all tests.

#17 *Specify that the most current version of ANSI/NFPA 70 be the standard requirement*

UL had no objection to this recommendation.

Action Items:

1. UL will provide CPSC with the names of electric heater manufacturers that do not include TLC devices in their products. CPSC will search their incident databases to see if those model heaters are associated with fire incidents.
2. CPSC will review the requirements of UL 486C and respond to UL as to their perceived adequacy for the application in hot, high current electric heaters.
3. CPSC will review the requirements of UL 746C with regards to electric heater connectors.
4. CPSC will initiate an email discussion of the labeling and instruction recommendations for UL 1042 (and by implication, UL 2021).
5. UL and CPSC will arrange for another similar meeting to discuss the recommendations of UL 2021 at a time amenable to both parties.