

MEETING LOG  
DIRECTORATE FOR ENGINEERING SCIENCES

OFFICE OF  
2003 MAY -8 11:18

SUBJECT: UL 2265 STP Meeting

PLACE: Underwriters Laboratories, Northbrook, IL

MEETING DATE: March 4, 2003

LOG ENTRY SOURCE: Janet Buyer

ENTRY DATE: May 5, 2003

COMMISSION ATTENDEES:

Janet Buyer ES

NON-COMMISSION ATTENDEES: See attached attendee list

MEETING SUMMARY: See attachment

6 (b) CLEARED: 5-8-03 *EA*  
 No Mfrs Identified  
 Excepted  
 Mfrs Notified  
 Comments Processed

Subjects 2265

1285 Walt Whitman Road  
Melville, L.I., NY 11747  
April 3, 2003

**TO: Standards Technical Panel (STP) for Fuel Cell Power Units and Fuel Storage Containers for Portable Devices, UL Subject 2265  
Subscribers to UL's Standards Service for Fuel Cell Power Units and Fuel Storage Containers for Portable Devices, UL Subject 2265  
Other Interested Parties**

**SUBJECT: Report of the Meeting of the Standards Technical Panel of UL for Fuel Cell Power Units and Fuel Storage Containers for Portable Devices;**

***Summary of Topics***

***The following topics were discussed at the meeting:***

- 1. Call to Order***
- 2. Announcements***
- 3. Introduction of Members, Guests, and Observers***
- 4. Review STP Working Group #1 Results***
- 5. Review STP Working Group #2 Results***
- 6. Development of Requirements for Shipping Hazardous Materials (Fuels) and for Consumer Use of Equipment On-Board Passenger Aircraft***
- 7. Definitions of "Portable"***
- 8. Review UL 2265 Draft Standard***
- 9. Toxicity of Exposure to Fuels***
- 10. Draft Review Comments***
- 11. Future Meeting Schedule***

A meeting of the Standards Technical Panel of UL for Fuel Cell Power Units and Fuel Storage Containers for Portable Devices was held on March 4, 2003 at UL's Northbrook office. The purpose of the meeting was to discuss various concerns and further development of requirements for the first draft of the Standard for Fuel Cell Power Units and Fuel Storage Containers for Portable Devices, UL Subject 2265.

**COMMENT DUE: MAY 1, 2003**

Attached as Appendix A is a report of the STP Meeting. Attached as Appendix B is the STP membership roster. Attached as Appendix C is information regarding Working Groups. Attached as Appendix D is a list of those who attended the meeting.

\*\*\*\*\*

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.

UNDERWRITERS LABORATORIES INC.

PAUL PELLEGRINO (Ext. 22754)  
Secretary for STP 2265  
Standards Department  
UL - Melville  
Phone: 631-271-6200  
Fax: 631-439-6021  
E-mail: Paul.Pellegrino@us.ul.com  
<http://ulstandardsinfonet.ul.com>

REVIEWED BY:

KENT L. WHITFIELD (Ext. 41025)  
Chair for STP 2265  
Conformity Assessment Services 3013HNBK  
UL - Northbrook  
Phone: 847-272-8800  
Fax: 847-509-6298  
E-mail: Kent.L.Whitfield@us.ul.com

Copyright © 2003 Underwriters Laboratories Inc.

SR : KGM

STP2265.1\_200303\_mtg\_rpt

APPENDIX A**1. CALL TO ORDER**

The meeting of the Standards Technical Panel (STP) of UL for Replacement Fuel Cell Power Units for Appliances (STP 2265) was called to order by the Chair at 9:00 AM on March 4, 2003.

**2. ANNOUNCEMENTS**

The Standards Technical Panel for Replacement Fuel Cell Power Units for Appliances, STP 2265, is currently seeking members in the user interest category.

**3. INTRODUCTION OF MEMBERS, GUESTS, AND OBSERVERS**

The Chair welcomed those present and stated that the purpose of the meeting is to continue the process of developing a new standard. All attendees were asked to introduce and include a brief background of themselves.

**4. REVIEW STP WORKING GROUP #1 RESULTS****DISCUSSION**

The working group chair stated the group's approach was to use the National Electrical Code (NEC) Class 2 level as a reasonable threshold between UL 2265 and the Standard for Portable Fuel Cell Power Systems, CSA/AM ANSI FC3. The STP supported the working group's results and was in agreement that UL 2265 be limited to products with DC outputs and within NEC Class 2 levels.

**5. REVIEW STP WORKING GROUP #2 RESULTS****DISCUSSION**

The working group chair indicated the three related battery standards as the Standard for Safety for Lithium Batteries, UL 1642, the Standard for Safety for Household and Commercial Batteries, UL 2054, and the Standard for Safety for Standby Batteries, UL 1989. The working group then reviewed these standards and created a table indicating the related requirements from each standard. These requirements were then used as a starting point for the first draft standard. The STP also supported the identified requirements.

**6. DEVELOPMENT OF REQUIREMENTS FOR SHIPPING HAZARDOUS MATERIALS (FUELS) AND FOR CONSUMER USE OF EQUIPMENT ON-BOARD PASSENGER AIRCRAFT****DISCUSSION**

UL initiated the discussion by identifying the Department of Transportation (DOT), Federal Aviation Administration (FAA), United Nations (UN), International Civil Aviation Organization (ICAO), and Transportation Safety Administration (TSA) as authorities necessary to aid in further development of requirements. UL also stated that communication with DOT has been established, they are committed

to supporting STP 2265 and aid in the development of requirements. It was established that fuel consisting of a 24% solution or less of methanol and water would be considered acceptable by DOT. A STP member stated that the International Air Transport Association (IATA), a trade association representing and serving the airline industry worldwide, might also be of aid in the development of requirements.

Working group #1 was formed with the task of developing a matrix identifying key contacts and their organizations. In addition create a strategy for addressing the development of necessary requirements concerning these organizations and develop requirements for paragraph 5.2.2 in the first draft standard. It was decided that Harry Jones would chair the group and the participants would include Steve Burkhart, Janet Buyer, John Cerveny, and John Galbraith (see Appendix C).

## 7. DEFINITIONS OF "PORTABLE"

### DISCUSSION

The STP discussed the definition of portable by reviewing the definition of "Portable Device" in the first draft standard. The definition reads, "Portable Device - Denotes a hand-held or transportable device. The fuel cell power unit may be intended for mounting in a dedicated cavity in the device for easy removal, or may be a stand alone electrical power source intended for connecting to one or more devices with a wiring and connector means". There was also discussion whether size and or weight issues should be included. Occupational Safety and Health Administration (OSHA), military, and airline baggage requirements were discussed as possible limits for size and weight. The STP decided to replace the term "portable" with "hand-held and hand-transportable" throughout the first draft standard.

## 8. REVIEW UL 2265 DRAFT STANDARD

### DISCUSSION

The STP held a review of the scope with the intent to edit "portable" with "hand-held and hand-transportable" as shown below.

The title and scope of UL 2265 was revised with respect to all the aforementioned discussions. The revised title will read, The Standard for Safety for Hand-Held or Hand-Transportable Fuel Cell Power Units with Fuel Containers, UL 2265. The revised scope will read as follows:

#### (CURRENT)

##### 1 Scope

1.1 This Standard covers fuel cell power units that are connected to portable devices by flexible cords and plug arrangements or other connection means such as termination connectors integrated into the casing of the fuel cell power units. These fuel cell power units provide DC output for powering portable devices.

1.2 This Standard also covers the associated fuel storage containers for these fuel cell power units.

#### (REVISED)

##### 1 Scope

1.1 This Standard covers hand-held and hand-transportable fuel cell power units and integrated fuel storage containers providing DC outputs that do not exceed National Electrical Code (NEC) Class 2 levels (as defined in Table 11B in Article 725 of the NEC).

1.2 This Standard also covers hand-held and hand-transportable fuel cell power units with factory matched fuel storage containers for these fuel cell power units that may be transported separately.

It was also noted that the revised scope paragraphs 1.1 and 1.2 will be revisited after conclusions from working group #1.

A guest mentioned that alcohols, including glycerol and ethanol are alternatives as other fuels. Oxidants including air and peroxide, additives such as water and liquid hydrides, and mixtures using combinations of fuels, oxidants, and additives were also identified. A STP member suggested using a definition of the limits of fuel flammability and toxicity as an alternative to listing the individual fuels. It was also suggested to add the definition of a fuel cell. It was agreed UL would take the task of revising paragraph 1.8 in the scope using definitions supporting International Code Council (ICC), National Fire Protection Association (NFPA), and Department of Transportation (DOT) and add glossary terms such as flammable, non-flammable, combustible, liquids, and gases.

Working Group #2 was formed with the tasks of investigating DOT and UL requirements and developing draft requirements for non-refillable fuel containers. These draft requirements are to cover Section 5, Materials and Acceptance Strategies, and Section 7, Fuel Filling Considerations, in the first draft standard. It was decided that Paul Adams would chair the group and the participants would include Greg Dolan, Harry Jones, Craig Nelson, and Todd Strothers (see Appendix C).

Working group #3 was formed with the tasks of investigating DOT and UL requirements and developing draft requirements for refillable fuel containers. These draft requirements are to cover Section 5, Materials and Acceptance Strategies, and Section 7, Fuel Filling Considerations, in the first draft standard. It was decided that Craig Nelson would chair the group and the participants would include John Cerveny and Robert Wichert (see Appendix C).

It was determined that UL staff will further develop requirements in Section 6, Enclosures and Acceptance Strategies, and also further define 4.4, Enclosure, in the Glossary in the first draft of the standard.

Working group #4 was formed with the tasks of defining reformer and non-reformer differences and to generate requirements for Section 8, Fuel Processing Considerations, in the first draft standard. It was decided that Harry Jones would chair the group and CG Xie would participate (see Appendix C).

UL initiated a discussion concerning electrical clearances that revised Section 10, Electrical Clearances, in the first draft standard as follows:

## **10 Electrical clearances**

10.1 Clearances between uninsulated live parts of different polarity (terminals, uninsulated wires, etc.) shall not be less than the values shown in the following table.

Table 10.1

Clearance between uninsulated live parts of different polarity

Voltage	Clearance	
	mm	(inches)
0 - 15	0.8	0.031
15- 30	1.6	0.063

Note: Compliance is checked by measurement.

The STP decided to keep Section 12 Protection From Overheating and Section 15 Protection From Impact and Loading as placeholders. Existing requirements in the first draft standard will be reviewed and if sufficient the aforementioned sections may not be necessary.

Working group #5 was formed with the tasks of reviewing the Code of Federal Regulations, CFR-16 Part 1700, Sections 1700.14, 1700.15, and 1700.20 and developing requirements for Section 16.2, Toxicity, in the first draft standard. It was decided that Janet Buyer would chair the group and Steve Burkhart would participate (see Appendix C).

The STP decided to keep Section 17, Environmental Use Considerations, and Section 18, Abnormal Operation, as placeholders. Results from working group #1 will be reviewed to determine the further development of Section 17. Existing requirements in the first draft standard will be reviewed and if sufficient Section 18 may not be necessary.

Working group #6 was formed with the task of researching and generating requirements for Section 20, Leakage of Potentially Flammable Fuel Gas/Vapor Into Indoor Areas, and Section 54, Mold Stress Relief Test, in the first draft standard. It was decided that Todd Strothers would chair the group and the participants would include Harry Jones and David Reichert (see Appendix C).

The STP decided to keep Section 21, Potentially Flammable Mixtures within the Device, in the first draft standard as a placeholder. Existing requirements in the first draft standard will be reviewed and in turn determine the further development of Section 21.

The STP decided to delete Section 26, EMC, in the first draft standard because the Federal Communications Commission (FCC) covers these requirements and these issues are generally outside the scope of a product standard.

The STP agreed that Section 27, Tests for Parts Exposed to Gaseous Fuel, in the first draft standard should be revised to read, Tests for Parts Exposed to Fuel and Oxidants. It was also determined that Sections 28 - 32 fall under the new heading of Section 27 and were renumbered 27.1 - 27.5 respectively.

UL agreed to review Society of Automotive Engineers (SAE) requirements and determine the need to either develop requirements or reference their existing requirements for Section 60, Recyclability, in the first draft standard.

## 9. TOXICITY OF EXPOSURE TO FUELS

### DISCUSSION

The STP decided to delay this topic until after review of the results from working group #1.

## 10. DRAFT REVIEW COMMENTS

### DISCUSSION

Working group #7 was formed with the task of reviewing Section 47, Heating Test, and Section 48, Temperature Cycling Test, in the first draft standard and revise the temperature requirements using a cell phone as an example. The group will investigate and review SAE, UL, DOT, and International Electrotechnical Committee (IEC) requirements for this task. It was decided that Kurt Kelty would chair the group and Harry Jones would participate (see Appendix C).

The STP reviewed the first draft standard and the following sections and paragraphs were added, revised, deleted, or need review. Paragraph 5.3, Tamper Evident Seal Design, was added and will need further development. Section 53, 250 lb. Crush Test, Section 56, Output Capacity Rating Tests, and Section 59, General, were revised. Section 42, Forced-Discharge Test, and Section 50, Projectile Test, were deleted. Section 43, Crush Test, and Section 56, Output Capacity Rating Tests, will need further review.

## 11. FUTURE MEETING SCHEDULE

### DISCUSSION

Future STP meeting to be determined.

APPENDIX B**ROSTER OF CURRENT MEMBERS OF THE STP FOR 2265**

<b>Name</b>	<b>Interest Category</b>	<b>Company</b>
Sumanth Addagarla	General Interest	Analyst / Self
Janet L. Buyer	Non-voting	U.S. Consumer Product Safety Commission
John H. Cerveny	Producer	MTI MicroFuel Cells
Dan Dajie	Producer	Polyfuel Inc.
Greg Dolan	General Interest	Methanol Institute
Kristopher E. Gardner	General Interest	US Army (ECOM Fuel Cell Technology Team)
Jeff Grant	Producer	Ballard Power Systems
Jerry Hallmark	Producer	Motorola
Anne Pieter Haytema	Producer	N.V. Nederlands Apparatenfabriec
James C. Hyatt	Non-voting	U.S. Consumer Product Safety Commission
Kurt R. Kelty	Producer	Panasonic Technologies
Darren B. Meyers	User	International Code Council, Inc.
Ronald J. Spiegel	General Interest	M.S. EPA
Todd M. Strothers	User	CSA International
Kenneth J. Thomas	General Interest	Product Safety Consulting
Robert Wichert	General Interest	US Fuel Cell Council
Harry Jones	STP Technical Representative-User	Underwriters Laboratories Inc.
Paul Pellegrino	STP Secretary-Non-voting member	Underwriters Laboratories Inc.
Kent L. Whitfield	STP Chair-Non-voting member	Underwriters Laboratories Inc.

APPENDIX C**STP WORKING GROUPS****\* Denotes Chair****1. WORKING GROUP**

**Objective:** Develop a matrix identifying key contacts and their organizations (DOT, FAA, IATA, ICAO, TSA, and UN). In addition create a strategy for addressing the development of necessary requirements concerning these organizations and develop requirements for paragraph 5.2.2 in the first draft standard. The purpose of the working group is to complete its objective by April 15, 2003.

\*Harry Jones

Steve Burkhart

Janet Buyer

John Cerveny

John Galbraith

**2. WORKING GROUP**

**Objective:** Investigate DOT and UL requirements and develop draft requirements for non-refillable fuel containers. These draft requirements are to cover Section 5, Materials and Acceptance Strategies, and Section 7, Fuel Filling Considerations, in the first draft standard. The purpose of the working group is to complete its objective by May 1, 2003.

\*Paul Adams

Greg Dolan

Harry Jones

Craig Nelson

Todd Strothers

**3. WORKING GROUP**

**Objective:** Investigate DOT and UL requirements and develop draft requirements for refillable fuel containers. These draft requirements are to cover Section 5, Materials and Acceptance Strategies, and Section 7, Fuel Filling Considerations, in the first draft standard. The purpose of the working group is to complete its objective by May 1, 2003.

\*Craig Nelson

John Cerveny

Robert Wichert

#### 4. WORKING GROUP

**Objective:** Define reformer and non-reformer differences and generate requirements for Section 8, Fuel Processing Considerations, in the first draft standard. The purpose of the working group is to complete its objective by March 18, 2003.

\*Harry Jones

CG Xie

#### 5. WORKING GROUP

**Objective:** Review the Code of Federal Regulations, CFR-16 Part 1700, Sections 1700.14, 1700.15, and 1700.20 and develop requirements for Section 16.2, Toxicity, in the first draft standard. The purpose of the working group is to complete its objective by April 1, 2003.

\*Janet Buyer

Steve Burkhart

#### 6. WORKING GROUP

**Objective:** Research and generate requirements for Section 20, Leakage of Potentially Flammable Fuel Gas/Vapor Into Indoor Areas, and Section 54, Mold Stress Relief Test, in the first draft standard. The purpose of the working group is to complete its objective by April 1, 2003.

\*Todd Strothers

Harry Jones

David Reichert

#### 7. WORKING GROUP

**Objective:** Review Section 47, Heating Test, and Section 48, Temperature Cycling Test, in the first draft standard and revise the temperature requirements using a cell phone as an example. The group will investigate and review SAE, UL, DOT, and International Electrotechnical Committee (IEC) requirements for this task. The purpose of the working group is to complete its objective by April 1, 2003.

\*Kurt Kelty

Harry Jones

APPENDIX D**ATTENDANCE AT THE MARCH 4, 2003 MEETING OF THE STP FOR FUEL CELL POWER UNITS  
AND FUEL STORAGE CONTAINERS FOR PORTABLE DEVICES, STP 2265**

<b>STP Representatives</b>	
Sumanth Addagarla*	Analyst / Self
Janet L. Buyer	US CPSC
John H. Cerveny	MTI MicroFuel Cells Inc.
Dan Dajie*	Polyfuel Inc.
Greg Dolan	Methanol Institute
Kristopher E. Gardner*	US Army
Jeff Grant*	Ballard Power Systems
Jerry Hallmark*	Motorola
Anne Pieter Haytema*	N.V. Nederlands Apparatenfabriec
James C. Hyatt*	US CPSC
Kurt R. Kelty	Panasonic Technologies
Darren B. Meyers	International Code Council, Inc.
Ronald J. Spiegel*	M.S. EPA
Todd M. Strothers	CSA International
Kenneth J. Thomas*	Product Safety Consulting
Robert Wichert	US Fuel Cell Council
<b>Invited Guests</b>	
Paul Adams	BIC USA, Inc.
Steve Burkhart	BIC USA, Inc.
Gennadi Finkelshtain	More Energy Ltd.
John Galbraith	Foamex International Inc.
Craig Nelson	Neah Power Systems, Inc.
David Reichert	DuPont Fuel Cells
Jacob Weiss	Medis Technology
Chenggang Xie	Motorola
<b>UL Staff</b>	
Harry Jones - STP Technical Representative	UL - Northbrook
Paul Pellegrino - STP Secretary	UL - Melville
Kent L. Whitfield - STP Chair	UL - Northbrook
* Not in attendance	

No Text on This Page