

Minutes
Electrical Power Working Group
Friday 22 October 2010
Las Vegas Hilton Hotel
Paradise Road
Las Vegas, Nevada

Chairmen:

Ken Vannice; Leviton Manufacturing Co., Inc.; P; MP
Mitch Heffer; Entertainment Technology (Royal Philips Electronics), representing USITT; P; U

Recording secretary: Karl G. Ruling; ESTA

Members attending:

Jeff deRecat; Marinco (Actuant Corporation); P; MP
George Long; Aggreko Event Services (Aggreko); P; DR
Wendy Holt; AMPTP/CSATF, representing the Alliance of Motion Picture and Television Producers; P; G
Joe Boardman; Bender Inc. (Bender GmbH & Co. KG); A; MP
Edward R. Condit; O; U
Jody Williquette; Electrivert, Inc.; P; CP
Steve Terry; Electronic Theatre Controls, Inc.; P; MP
Elizabeth E. (Lizz) Pittsley; I; U
Art Wanuch; Entertainment Electrical Safety Committee of Ontario; A; G
Ed Garstkiewicz; Harting Inc., North America (Harting KGAA); P; G
Roger Lattin; IATSE Local 728; P; U
Alan M. Rowe; IATSE Local 728; A; U
Keith S. Woods; Lakhri Impressions Ltd.; P; U
Tyrone Mellon_Jr.; Lex Products Corp.; A; CP
Sean Sloat; Lex Products Corp.; A; CP
Louis Bradfield; I; U
W. G. Krokaugger, P. E.; Mole-Richardson Co.; P; CP
Vincent J. Cannavale; Motion Laboratories; P; CP
Ron Bonner; PLASA; P; U
Michael Lay; Philips Strand Lighting (Royal Philips Electronics); P; MP
Michael Scudday; SSRC, Inc.; SSRC, Inc.; P; CP
Jerry Gorrell; Theatre Safety Programs; P; U

Visitors:

Jeri Adam; Actuant Electrical
Bud Toly; SSRC
Brian Merriken; Sensata Technologies

1 Opening remarks

Ken Vannice called the meeting to order at 19:04.

2 Attendance and membership

2.1 Introduction of those present and taking attendance

A yellow sign-in sheet was circulated while those present introduced themselves.

2.2 Determination of quorum

Ken Vannice asked for a show of hands and then announced that we had a quorum.

2.3 Recognition of alternate voting members

Two were recognized.

2.4 Requirements for membership

Ken Vannice reminded the assembly that membership is open to all who are affected by the work of the group. Voters who would be in the designer or dealer/rental company interest category in particular are encouraged to become members. Voting members are required to attend meetings and to vote on letter ballots. Voting members and their alternates may not miss three consecutive meetings or three consecutive letter ballots without a loss of voting status.

2.5 Changes to observer status

Members who have missed the previous two meetings and who will not have met the minimum attendance requirement for voters if this meeting is missed:

Wendy Holt; Alliance of Motion Picture and Television Producers--present
Nathan Leonard, Joe Boardman, and Torsten Gruhn; Bender GmbH & Co. KG --present
Steve Terry; Electronic Theatre Controls --present
Ian Foulds and Art Wanuch; EESCO-- present
Ron Bonner; PLASA --present
Michael Scudday; SSRC --present

All were present, so there were no voting changes to observer.

2.6 Processing of new membership requests

Jody Williquette of Electrivers, Inc. (formerly with Harting) had applied as a principal in the custom manufacturer interest category. Keith Woods asked to be returned to voting status.

Roger Lattin moved that Keith Woods and Simon Hunt be readmitted to voting status, and that Jody Williquette should be accepted as a principal voting member. The motion was seconded and then approved by a show of hands.

2.7 Consensus body

The full consensus body during this meeting was:

Name	Company	Representing (This is the primary sort field.)	Voting status	Int. cat.
James Davey	AC Power Distribution Inc.	AC Power Distribution Inc.	P	CP
Greg Mayberry	AC Power Distribution Inc.	AC Power Distribution Inc.	A	CP
Jeff deRecat	Marinco	Actuant Corporation	P	MP
William Drake	Marinco	Actuant Corporation	A	MP
George Long	Aggreko Event Services	Aggreko	P	DR
Wendy Holt	AMPTP/CSATF	Alliance of Motion Picture and Television Producers	P	G
Nathan Leonard	Bender Group	Bender GmbH & Co. KG	P	MP
Joe Boardman	Bender Inc.	Bender GmbH & Co. KG	A	MP
Torsten Gruhn	Bender Inc.	Bender GmbH & Co. KG	A	MP
Jody Williquette	Electrivers, Inc.	Electrivers, Inc.	P	CP
Steve Terry	Electronic Theatre Controls	Electronic Theatre Controls, Inc.	P	MP
Elizabeth E. (Lizz) Pittsley	Elizabeth Pittsley	Elizabeth Pittsley	I	U
Ian Foulds	IATSE Local 873	Entertainment Electrical Safety Committee of Ontario	P	G
Art Wanuch	Entertainment Electrical Safety Committee of Ontario	Entertainment Electrical Safety Committee of Ontario	A	G

Name	Company	Representing (This is the primary sort field.)	Voting status	Int. cat.
Ed Garstkiewicz	Harting Inc., North America	Harting KGAA	P	G
Edwin S. Kramer	I.A.T.S.E. Local 1	I.A.T.S.E. Local 1	P	U
Roger Lattin	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	P	U
R. Bruce Prochal	IATSE Local 728	I.A.T.S.E. Local 728	A	U
Patric J. Abaravich	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	A	U
Alan M. Rowe	IATSE Local 728	I.A.T.S.E. Local 728	A	U
Keith S. Woods	Lakhri Impressions Ltd.	IATSE Local 891	P	U
Simon Hunt	IATSE Local 891	IATSE Local 891	A	U
Ken Vannice	Leviton Manufacturing Co., Inc.	Leviton Manufacturing Co., Inc.	P	MP
Bill Grande	Leviton Manufacturing Co., Inc.	Leviton Manufacturing Co., Inc.	A	MP
Bob Luther	Lex Products Corp.	Lex Products Corp.	P	CP
Tyrone Mellon_Jr.	Lex Products Corp.	Lex Products Corp.	A	CP
Sean Sloat	Lex Products Corp.	Lex Products Corp.	A	CP
Louis Bradfield	Louis Bradfield	Louis Bradfield	I	U
W. G. Krokaugger, P. E.	Mole-Richardson Co.	Mole-Richardson Co.	P	CP
Alex Yoon	Mole-Richardson Co.	Mole-Richardson Co.	A	CP
Vincent J. Cannavale	Motion Laboratories	Motion Laboratories	P	CP
Peter Herrmann	Motion Laboratories	Motion Laboratories	A	CP
David Herrmann	Motion Laboratories	Motion Laboratories	A	CP
Ron Bonner	PLASA	PLASA	P	U
Michael Lay	Philips Strand Lighting	Royal Philips Electronics	P	MP
Michael Scudday	SSRC, Inc.	SSRC, Inc.	P	CP
Jerry Gorrell	Theatre Safety Programs	Theatre Safety Programs	P	U
Mitch Hefter	Entertainment Technology (Royal Philips Electronics)	USITT	P	U
		Total votes	23	
		Votes by interest categories	6	CP
			5	MP
			1	DR
			8	U
			3	G
			0	DE

3 Approval of the minutes from the previous meeting

See the draft minutes of the 29 September - 1 October 2010 meeting, *EPmin29-09-2010.pdf*

Steve Terry moved that the draft minutes be approved as written. The motion was seconded and then approved with a show of hands.

4 Reading of the call for patents

Ken Vannice read the following statement aloud to the assembly:

"ESTA intends not to publish any standard that contains protected intellectual property, unless that information can be licensed by anyone for a reasonable fee. ESTA uses a process of open patent and copyright disclosures to implement its intent. ESTA does not conduct patent or copyright searches and does not warrant that its standards contain no protected intellectual property.

"In keeping with the open disclosures policy, I ask if anyone present wishes to notify this working group of the existence of a patent or copyright or other intellectual property that might protect material in a standard being developed by this working group. You need not be the holder of the patent or copyright to notify this working group of its existence."

Nothing was reported.

5 Reading of the anti-trust statement

Ken Vannice read the following statement aloud to the assembly:

"The ESTA Board of Directors, the Technical Standards Committee, and the leadership of this working group will reject or nullify any actions that unlawfully restrain trade. Anyone who feels that such an action is being or has been taken is requested to bring that matter to the attention of the chair immediately. Anyone who feels that actions in restraint of trade have been taken and not properly annulled is requested to notify the TSC chair or ESTA president immediately.

"ESTA legal counsel has informed us that violations of the anti-trust laws can have serious consequences. Individuals engaged in certain unlawful conduct can be found criminally liable. An individual convicted of a criminal violation of the Sherman Act may be fined as much as \$1,000,000 and imprisoned for up to ten years. An easy to read pamphlet describing restraint of trade issues is available from the Technical Standards Manager."

Karl Ruling held up an easy-to-read pamphlet to show that copies were available at the meeting.

Nothing was reported.

6 Approval of agenda

It was suggested that 7.3 should be moved to after 7.6.

Steve Terry moved that the modified agenda be accepted. The motion was seconded and then approved with a show of hands.

7 Old business - task group reports

7.1 EMC task group

Vannice reported that CSA has agreed to backdown on adopting IEC 61000-3-2.

IEEE is forming a working group to deal with powerline harmonic currents. Work must start 2010 and be done in a couple of years. This is an aggressive schedule.

7.2 ANSI E1.16-2002 (R2007)

No news or action.

7.3 ANSI E1.19 – 2009, Recommended Practice for the Use of Class A Ground-Fault Circuit Interrupters (GFCIs) Intended for Personnel Protection in the Entertainment Industry

No news or action.

7.4 BSR E1.24 - 20xx, pin connectors

Report of first public review comments. See E1-24FrstRevwCmmntSmmry.pdf. Plan to resolve the objections.

The public review comments were discussed and resolutions agreed upon.

(1) James Davey

AC Power Distribution, Inc.

The document (Figures 1-5) references dimension behind the face of female devices and could limit design improvement and development by a manufacturer. Focus should be on the dimensions that affect intermateability only, and remove any dimensions that affect the construction of the contacts behind the device face.

Perhaps additional dims specifying minimum insertion of the male pin and/or verbage that specifies complete insertion of the plug may be in order.

Resolution:

Regarding Figure 1, Ty Mellon moved that the dimensions of the inside diameter of the female contact, and the depth be removed and the note that says, "The receptacle's contacts shall be sized so as to function reliably with the full range of allowable pin diameters and pin slot widths," shall be added. The portion of the female drawing from about 0.25" behind the face will be removed. The motion was seconded and then approved with a show hands. All present voted in favor except for two abstentions. The abstainers said that pin connectors are not used in their regions.

Steve Terry moved that we direct the task group to make the same changes to the other four drawings. The motion was seconded and then approved by a supermajority with a show of hands.

(2) Jeff deRecat

Actuant Electrical

Although the Scope of the document notes that it is not a safety standard, the dimensions in figures 1 through 5 will create products that will not work when built to the standard. In each of the figures, the dimensions of the pins versus the dimensions of the contacts result in a .002" to .004" clearance. These types of contacts require an interference fit, not a gap, otherwise the contacts will overheat.

It is necessary to establish the location and dimensions of the pins, and it is necessary to establish the location and dimensions of the contact openings. It is not necessary to specify the construction of the contacts, and the ID and the length should be removed from figures 1 through 5.

If the committee remains concerned how well the products perform, then wording can be added to note that the depth of the contacts shall allow full insertion of the plugs and the design of the contacts shall not create overheating under specific test conditions.

Steve Terry moved that the resolution shall be "See the action on comment one." The motion was seconded and then approved by a supermajority with a show of hands.

(3) William Drake

Actuant Electrical

Although the Scope of the document notes that it is not a safety standard, the dimensions in figures 1 through 5 will create products that will not work when built to the standard. In each of the figures, the dimensions of the pins versus the dimensions of the contacts result in a .002" to .004" clearance. These types of contacts require an interference fit, not a gap, otherwise the contacts will overheat.

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If the committee remains concerned how well the products perform, then wording can be added to note that the depth of the contacts shall allow full insertion of the plugs and the design of the contacts shall not create overheating under specific test conditions.

Steve Terry moved that the resolution shall be "See the action on comment one." The motion was seconded and then approved by a supermajority with a show of hands.

(4) Marsha DuBois
Pintech Stage Connectors

Revisions made to the document dimensions between 7005R3.0 and 7005R3 are in question. I question are these typos or actual revisions?

1. On the receptacle in FIG 1 the ground pin set back from the face of the device was 0.070-0.090 on Rev 3.0. Now on rev 3.1 it is 0.00-0.090. Is this a typo or a revision.

Resolution: This was a deliberate revision.

2. On the receptacle in FIG 1 the hot and neutral pin set back from the face was 0.120-.220 which equates to 0.050-0.112 from the ground pin. On rev 3.1 this dimension from neutral pin to ground pin has changed to 0.050-0.070. Is this a typo or a revision. Would like to see the 0.050-0.112 range reinstated-so that it would be comparable to the other FIG2-5.

Resolution: It was a revision, but we are changing it to meet your request.

3. On the receptacle in FIG 3 the ground pin set back from the face on rev 3.0 was 0.075-0.095. Now on rev 3.1 it is 0.000-0.095. Is this a typo or a revision.

Resolution: It was a revision.

4. On the receptacle in FIG 4&5 the ground pin set back from the face on rev 3.0 was 0.090-0.110. Now on rev 3.1 it is 0.000-.0110. Is this a typo or a revision.

Resolution: It was a revision.

UL498 paragraph 163.4 ref no. 4 refers to receptacles not intended for interrupting current shall be marked "Caution-risk of electric shock. Do not disconnect under load" or an equivalent statement following the word CAUTION. This marking shall be on the device where visible while the device is in the mated condition. In order to meet this UL requirement the receptacle-panel mount device in FIG 1 may need to be longer than 2.2" or wider than 0.828" to accommodate this warning label in the mated position.

Resolution: Point noted. It is our expectation that UL will incorporate this standard by reference, which should resolve this issue.

Michael Lay moved that these resolutions to Marsha DuBois's questions and comments be accepted. The motion was seconded and then approved by a supermajority with a show of hands.

(5) Mitch Hefter
Philips Lighting Controls

Add Informational Note at end of clause 4.2:

The receptacles' contacts are sized so as to function reliably with the full range of allowable pin diameters and pin slot widths

This information is part of the receptacle socket dimensions in the current edition of ANSI E1.24 and was the in draft documents for this revision but missing from this public review document. This information, while self-evident, is a valuable clarification.

Steve Terry moved that the resolution shall be "See the action on comment one." The motion was seconded and then approved by a supermajority with a show of hands.

(6) Michael Scudday
SSRC, Inc.

SSRC voted "NO" on the recent letter ballot of 5/2 - 6/23, 2010 with reasons. We would like to add the following in order to better explain our position.

The current standard draft, by including diameter & depth dimensions in female devices, limits a manufacturer to drilling a straight hole into a brass blank. This restricts and limits product development. There are many ways to design and manufacture improved female contacts which are restricted by the current language. The testing process, by UL and others, is adequate to determine performance of all designs.

In NEMA WD.6 2002, there is strong precedent for eliminating diameter & depth dimensions behind the face (deadfront) of female devices. WD.6, which covers the majority of all plugs, connectors and receptacles used in the USA, **LIMITS ANY DIMENSIONAL INFORMATION, BEHIND THE FACE OF FEMALE DEVICES. TO POCKETS, SET BACKS OR `NIBS' (used on locking devices)**. See p.25 for 5-15 `Edison' plugs and p.67 for L5-20, 20A locking devices.

ESTA 201x "Foreword" closely follows the WD.6 language, concentrating on "dimensional requirements" and "intermateability of different manufacturers".

ESTA Public Review documents. in the "Scope" of BSR E1.24-201x also speaks to **CONTACT SET BACK FROM THE FACE** and marking requirements, leaving the "electrical & flammability" for pin connectors to "other standards such as UL 498".

We assume the dimensions, in the current draft, are an attempt to guarantee performance. Since it is restrictive, and performance is determined by testing, we ask that dimensions behind the face, except for setbacks, be eliminated and the following language be reinstated (was contained in E1.24-20xx, Rev.2.95): *"THE RECEPTACLE'S CONTACTS SHALL BE SIZED SO AS TO FUNCTION RELIABLY WITH THE FULL RANGE OF ALLOWABLE PIN DIAMETERS AND PIN SLOT WIDTHS"*.

Michael Lay moved that the resolution shall be "See the action on comment one." The motion was seconded and then approved by a supermajority with a show of hands.

7.5 BSR E1.32 luminaire inspection guidance

Ruling reported that it's in public review through 25 October 2010. Few comments have been received so far.

7.6 BSR E1.18 portable feeder cable selection and use

7.6.1 "connected load" versus "coincident load"
Which term to use?

Roger Lattin moved that the term shall be "connected load." The motion was seconded and then approved with a unanimous show of hands.

Mitch Hefter said that the task group should keep this resolution in mind when collating the comments and modifying the document.

7.6.2 Continued work on reconsidering the comment resolutions

See E1-18-1NonYes191thru226.doc

The votes on the comments resolutions were considered and some were modified. (See *Tables of Non-Yes Votes, Ballot Items 191 through 226, Letter Ballot EP/2010-7002; Votes Reconsidered and Revoted by the EPWG on 22 October 2010*, which is appended to these minutes.)

The task group was charged with having a revised BSR E1.18-1 document for the January meeting.

8 New business

None.

9 Other business

None.

10 Schedule for future meetings

Mitch Hefter announced that the next working group meeting is scheduled for Sunday 23 January 2011, from 09:00 to noon, at the Dallas/Ft. Worth Marriott Solana.

11 Adjournment

Wendy Holt moved that the meeting adjourn. The motion was seconded and then approved with a voice vote. Mitch Hefter declared the meeting adjourned at 22:40.

Working Group Membership and Contact Information as of 2 November 2010

Name	Company	Representing (This is the sort field.)	Voting status	Int. cat.
James Davey	AC Power Distribution Inc.	AC Power Distribution Inc.	P	CP
Greg Mayberry	AC Power Distribution Inc.	AC Power Distribution Inc.	A	CP
Jeff deRecat	Marinco	Actuant Corporation	P	MP
William Drake	Marinco	Actuant Corporation	A	MP
George Long	Aggreko Event Services	Aggreko	P	DR
Kenny Delahoussaye	Aggreko	Aggreko	O	DR
Richard L. Eberth_Jr.	North Shore Safety	Airpax Corporation	O	MP
Wendy Holt	AMPTP/CSATF	Alliance of Motion Picture and Television Producers	P	G
Mike Skinner	CBS Studio Center	Alliance of Motion Picture and Television Producers	O	U
André Broucke	André Broucke	André Broucke	O	G
Arnold Tang	Arnold Tang Productions	Arnold Tang Productions	O	G
Jiantong Wu	Beijing Special Engineering Design & Research Institute	Beijing Special Engineering Design & Research Institute	O	G
Nathan Leonard	Bender Group	Bender GmbH & Co. KG	P	MP
Joe Boardman	Bender Inc.	Bender GmbH & Co. KG	A	MP
Torsten Gruhn	Bender Inc.	Bender GmbH & Co. KG	A	MP
Kevin O'Brien	Bestek Lighting & Staging	Bestek Lighting & Staging	O	U
Lee J. Bloch	Bloch Design Group, Inc.	Bloch Design Group, Inc.	O	G
Marty Lazarus	Chicago Spotlight, Inc.	Chicago Spotlight, Inc.	O	DR
Eric Bouchard	Cirque du Soliel	Cirque du Soliel	O	CP
Wayne Kowalski	Coleman Cable Inc.	Coleman Cable Inc.	O	MP
Ford Sellers	Cornell University	Cornell University	O	U
Don Earl	Earl Girls, Inc.	Earl Girls, Inc.	O	DR
Edward R. Condit	Edward R. Condit	Edward R. Condit	O	U
Jody Williquette	Electrivers, Inc.	Electrivers, Inc.	P	CP

Name	Company	Representing (This is the sort field.)	Voting status	Int. cat.
Steve Terry	Electronic Theatre Controls	Electronic Theatre Controls, Inc.	P	MP
Elizabeth E. (Lizz) Pittsley	Elizabeth Pittsley	Elizabeth Pittsley	I	U
Ian Foulds	IATSE Local 873	Entertainment Electrical Safety Committee of Ontario	P	G
Art Wanuch	Entertainment Electrical Safety Committee of Ontario	Entertainment Electrical Safety Committee of Ontario	A	G
Ed Garstkiewicz	Harting Inc., North America	Harting KGAA	P	G
Trevor Forrest	Helvar Lighting Control	Helvar Lighting Control	O	MP
Kirk D. Keen	Hollywood Lighting Services, Inc.	Hollywood Lighting, Inc.	O	DR
Pat Miller	Hubbell Wiring Devices	Hubbell Inc.	O	MP
Edwin S. Kramer	I.A.T.S.E. Local 1	I.A.T.S.E. Local 1	P	U
Roger Lattin	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	P	U
R. Bruce Prochal	IATSE Local 728	I.A.T.S.E. Local 728	A	U
Patric J. Abaravich	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	A	U
Alan M. Rowe	IATSE Local 728	I.A.T.S.E. Local 728	A	U
Keith S. Woods	Lakhri Impressions Ltd.	IATSE Local 891	P	U
Simon Hunt	IATSE Local 891	IATSE Local 891	A	U
John (Javid) D. Butler	Integrated Theatre, Inc.	Integrated Theatre, Inc.	O	CP
David Murray	IPC Resistors Inc.	IPC Resistors Inc.	O	CP
Jose J. Flores	Kino Flo, Inc.	Kino Flo, Inc.	O	MP
Ken Vannice	Leviton Manufacturing Co., Inc.	Leviton Manufacturing Co., Inc.	P	MP
Bill Grande	Leviton Manufacturing Co., Inc.	Leviton Manufacturing Co., Inc.	A	MP
Bob Luther	Lex Products Corp.	Lex Products Corp.	P	CP
Tyrone Mellon_Jr.	Lex Products Corp.	Lex Products Corp.	A	CP
Sean Sloat	Lex Products Corp.	Lex Products Corp.	A	CP
Louis Bradfield	Louis Bradfield	Louis Bradfield	I	U
Jim Holladay	Luxence	Luxence	O	G

Name	Company	Representing (This is the sort field.)	Voting status	Int. cat.
Hiroshi Kita	Marumo Electric Co., Ltd.	Marumo Electric Co., Ltd.	O	MP
Michael J. Carnaby	Mikan Theatricals	Mikan Theatricals	O	DR
W. G. Krokaugger, P. E.	Mole-Richardson Co.	Mole-Richardson Co.	P	CP
Alex Yoon	Mole-Richardson Co.	Mole-Richardson Co.	A	CP
Vincent J. Cannavale	Motion Laboratories	Motion Laboratories	P	CP
Peter Herrmann	Motion Laboratories	Motion Laboratories	A	CP
David Herrmann	Motion Laboratories	Motion Laboratories	A	CP
Natti Pierce-Thomson	North American Theatre Technology	North American Theatre Technology	O	U
Marsha DuBois	Pintech Stage Connectors, Inc.	Pintech Stage Connectors, Inc.	O	CP
Steve DuBois	Pintech Stage Connectors, Inc.	Pintech Stage Connectors, Inc.	O	CP
Ron Bonner	PLASA	PLASA	P	U
James Eade	PLASA	PLASA	O	G
Paul F. Mardon	Pulsar Ltd.	Pulsar Ltd.	O	MP
Douglas Franz	QVC Network	QVC Network	O	U
Eric Tishman	Rosco Laboratories	Rosco Laboratories	O	MP
Richard B. Glickman	Gliconen Corporation	Rosco Laboratories	O	MP
Michael Lay	Philips Strand Lighting	Royal Philips Electronics	P	MP
Robert Barbagallo	Solotech Inc.	Solotech Inc.	O	DR
Michael Scudday	SSRC, Inc.	SSRC, Inc.	P	CP
Stephen Vanciel	Stephen Vanciel	Stephen Vanciel	O	U
Reuben Goldberg	Technic Services	Technic Services	O	U
Dominic Vincenty	TPS	Television Production Service	O	DR
Jerry Gorrell	Theatre Safety Programs	Theatre Safety Programs	P	U
Colin Waters	TMB	TMB	O	DR
Phillip M. Gallo	TMB	TMB	O	DR
Charles (Chuck) Kurten	Underwriters Laboratories, Inc.	Underwriters Laboratories, Inc.	O	G

Name	Company	Representing (This is the sort field.)	Voting status	Int. cat.
Richard Wolpert	Union Connector Company (MO)	Union Connector Company	O	CP
Mitch Hefter	Entertainment Technology (Royal Philips Electronics)	USITT	P	U
William L. Maiman	William L. Maiman	William L. Maiman	O	U

Key to codes:

P principal voting member
A alternate voting member
I individual voting member
O observer, non-voting

MP mass-market producer interest category
CP custom-market producer interest category
DR dealer or rental company interest category
U user interest category
G general-interest interest category
DE designer interest category