

Minutes
Electrical Power Working Group
Friday 19 October 2012
The Las Vegas Hotel
Las Vegas, NV

Presiding chairman: Mitch Hefter; representing USITT; P; U

Recording secretary: Karl G. Ruling; PLASA

Members attending:

Richard Cadena; Academy of Production Technology; P; G
Wendy Holt; AMPTP/CSATF (Alliance of Motion Picture and Television Producers); P; G
Stephen (Steve) Brock; Bender ET Inc. (Bender GmbH & Co. KG); A; MP
Jody Williquette; Electrivers, Inc.; P; CP
Steve Terry; Electronic Theatre Controls, Inc.; P; MP
Art Wanuch; Entertainment Electrical Safety Committee of Ontario; A; G
Ed Garstkiewicz; Harting Inc., North America (Harting KGAA); P; G
Roger Lattin; I.A.T.S.E. Local 728; P; U
Keith S. Woods; Lakhri Impressions Ltd., representing IATSE Local 891; P; U
Jared Saltzman; O; U
Tyrone Mellon Jr.; Lex Products Corp.; A; CP
Louis Bradfield; P; U
Alex Yoon; Mole-Richardson Co.; A; MP
Vincent J. Cannavale; Motion Laboratories; P; CP
Michael Lay; Philips Color Kinetics (Royal Philips Electronics); P; MP
Jerry Gorrell; Theatre Safety Programs; P; U

Visitors: Christian Bender; Bender Group
Erin Grabe; PLASA
Mike Harwood; William F. White International

1 Opening remarks

Mitch Hefter called the meeting to order at 19:04.

2 Attendance and membership

2.1 Introduction of those present and taking attendance

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

2.2 Determination of quorum

Hefter asked for a show of hands of voting members. He counted them and then announced that a quorum was present and more than enough voters to pass a motion requiring a supermajority.

2.3 Recognition of alternate voting members

Art Wanuch and Alex Yoon were recognized.

2.4 Requirements for membership

Hefter 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:

Mitch Hefter; USITT; User

Hefter was present, so there was no change to his voting status.

2.6 Processing of new membership requests

One application was presented at the meeting:

Brian Eustace; Mole-Richardson; Principal; MP

Alex Yoon of Mole-Richardson said that the interest category should be CP.

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

2.7 Consensus body

The full voting body during this meeting, including those not present, was:

Name	Representation	Voting status	Int. cat.
James Davey	AC Power Distribution Inc.	P	CP
Greg Mayberry	AC Power Distribution Inc.	A	CP
Richard Cadena	Academy of Production Technology	P	G
Jeff deRecat	Actuant Corporation	P	MP
William Drake	Actuant Corporation	A	MP
George Long	Aggreko	P	DR
Wendy Holt	Alliance of Motion Picture and Television Producers	P	G
Nathan Leonard	Bender GmbH & Co. KG	P	MP
Joe Boardman	Bender GmbH & Co. KG	A	MP
Torsten Gruhn	Bender GmbH & Co. KG	A	MP
Stephen (Steve) Brock	Bender GmbH & Co. KG	A	MP
Larry Schoeneman	DesignLab Chicago, Inc.	P	DR
Jody Williquette	Electrivers, Inc.	P	CP
Steve Terry	Electronic Theatre Controls, Inc.	P	MP
Ian Foulds	Entertainment Electrical Safety Committee of Ontario	P	G
Art Wanuch	Entertainment Electrical Safety Committee of Ontario	A	G
Ed Garstkiewicz	Harting KGAA	P	G
Howard Forryan	Harting KGAA	A	G
Edwin S. Kramer	I.A.T.S.E. Local 1	P	U
Roger Lattin	I.A.T.S.E. Local 728	P	U
R. Bruce Prochal	I.A.T.S.E. Local 728	A	U
Patric J. Abaravich	I.A.T.S.E. Local 728	A	U
Alan M. Rowe	I.A.T.S.E. Local 728	A	U
Keith S. Woods	IATSE Local 891	P	U

Name	Representation	Voting status	Int. cat.
Ken Vannice	Leviton Manufacturing Co., Inc.	P	MP
Bill Grande	Leviton Manufacturing Co., Inc.	A	MP
Bob Luther	Lex Products Corp.	P	CP
Tyrone Mellon Jr.	Lex Products Corp.	A	CP
Sean Sloat	Lex Products Corp.	A	CP
Louis Bradfield	Louis Bradfield	P	U
Brian Eustace	Mole-Richardson Co.	P	CP
Alex Yoon	Mole-Richardson Co.	A	CP
Vincent J. Cannavale	Motion Laboratories	P	CP
Peter Herrmann	Motion Laboratories	A	CP
David Herrmann	Motion Laboratories	A	CP
Ron Bonner	PLASA EU	P	U
Michael Lay	Royal Philips Electronics	P	MP
Jerry Gorrell	Theatre Safety Programs	P	U
Mitch Hefter	USITT	P	U
	Total votes possible	23	
		5	CP
		5	MP
	Subtotals of votes by interest categories	2	DR
		7	U
		4	G
		0	DE

3 Approval of the minutes from the previous meeting

See the draft minutes of the 20 July 2012 meeting, EPmin07-2012.pdf

Wendy Holt moved that the draft minutes be approved as written. The motion was seconded. The motion was approved with a show of hands

4 Reading of the call for patents

Mitch Hefter read the following statement aloud to the assembly:

"PLASA intends not to publish any standard that contains protected intellectual property, unless that information can be licensed by anyone for a reasonable fee. PLASA uses a process of open patent and copyright disclosures to implement its intent. PLASA 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."

No protected intellectual property was brought to the attention of the working group.

5 Reading of the anti-trust statement

Mitch Heffer read the following statement aloud to the assembly:

"The PLASA Board of Directors, the Technical Standards Council, 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 PLASA chairman immediately.

"PLASA 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."

The TSM held up some of the easy-to-read pamphlets to show that they were available.

No restraint of trade issues were reported.

6 Approval of agenda

Art Wanuch asked for a discussion of reviving E1.18 in some form under new business.

Roger Lattin asked for agenda items on marking auxiliary bonding conductors and the friction mating cam-type connectors

Steve Terry asked for agenda items on CEC and NEC harmonization and CSA and UL harmonization

Steve Terry move to accept the amended agenda. The motion was seconded and then approved with a show of hands.

7 Old business - task group reports

7.1 EMC task group

Ken Vannice had submitted a bulleted summary of the results of several meetings of several groups over time, including a shouting match that took place between representatives for US manufacturers and Canadian power utilities at the IEEE P1836/37 WG meeting held in Indianapolis on September 18 and 19. The chairs of that meeting were Larry Conrad and Mark Halpin.

- Lighting industry via the NEMA Lighting Division proposed C82-77 as a deviation to the limits tables
- Same group proposed potential revisions to C82-77 to deal with CFLs and LEDs – similar work is going on in the IEC SC77A committee
- Other industries not so organized with a spattering of proposals
- Information Technology industry already in compliance
- Canadian utilities and their consultant proposed many strict limits, some more strict than the original draft
- Manufacturers believe the Canadian strict limits will require redesign of equipment to include active power factor correction
- US manufactures unwilling to design special equipment for Canada or burden US consumers
- Chairs ask Canadian utilities for their specific concerns including product types causing most concern
- As a place to start Chairs (Conrad and Halpin) declare the work to be for consumer products and issue a list of product types to be worked on
- Lighting industry integrates their proposal based on C82-77 within the entire standard as requested
- Lighting industry removed all the non-consumer items
- Lighting industry tries to adjust requirements based on concerns of the Canadian utilities
- Other industries tried to adjust also

- Canadian utilities and their consultant ignored all of that and re-proposed most of their strict limits including limits on non-consumer products
- Lighting industry decided they had moved enough and stood firm
- Canadian utilities and their consultant stood firm
- A shouting match ensued – Chairs (Conrad and Halpin) called a time out recess
- Chairs asked the two sides to caucus and make reasonable proposals
- Manufacturers made a list of a few products of concern – Canadian utilities made the list much longer
- Chairs continue to call for a consumer only approach
- Canadian utilities agree to direct work to the analysis of impact to a limited number of consumer products
- Manufacturers agree to direct work on industries without a comprehensive plan and on issues that actually result in reduction of harmonics
- The goal is to control the growth of harmonics, not to re-design equipment

Possible Outcomes

- A standard that covers consumer products only and places limits on CFLs, LEDs, and dimmers
- A cancellation of the project in which case CSA will probably adopt their IEC 61000-3-2 with Canadian deviations
- Anything in between

Steve Terry observed that both sides seem to be intransigent, that there are no facts coming out of the discussion, and no discussion of the differences between European and North American power grid impedances. He also noted the very, very close cooperation between CSA and the Canadian utilities: whatever the utilities want, CSA will do.

Art Wanuch reported that CSA now must answer to ESA, the safety authority, and he has contacts of whom he can ask any questions and get answers.

7.2 ANSI E1.16-2002 (R2007)

It's been approved by ANSI, Mitch Hefter reported.

7.3 BSR E1.19 – 201x, Recommended Practice for the Use of Class A Ground-Fault Circuit Interrupters (GFCIs) Intended for Personnel Protection in the Entertainment Industry

See proposed revised section 4, Section_4r1.pdf. Next step?

Steve Terry moved that we offer this document (the revised section 4) for public review. The motion was seconded. There was discussion. The motion was approved with a unanimous show of hands, which was a supermajority of the voting body.

7.4 ANSI E1.24 - 2012, pin connectors

Steve Terry reported that it's been adopted by UL by reference in UL 498. The only question is the date by which compliance shall be required. A Request for Comment has been issued with a proposed compliance date of three years from now.

7.5 ANSI E1.32 - 2012, Guide for the Inspection of Entertainment Industry Incandescent Lamp Luminaires

No news or action.

7.6 UL Stage and Studio Luminaire standard

Task group report on revision proposals. From the March minutes:

"Steve Terry said that the big need is for a reasonable leakage current standard in UL 1573. He doesn't have the time to develop this, but that this issue would affect a number of automated luminaire and LED luminaire manufacturers. He identified a few: Martin Professional, Altman Stage Lighting, Philips, High End Systems (Barco), Mole-Richardson, German Light Products, Robe, Clay Paky, and Elation.

"Steve Terry moved that we draft a letter and send it to identified people at these organizations to ask them to work on a 1573 revision. The motion was seconded and then approved with a unanimous show of hands.

"Terry said he will identify the senior person at each of these companies to whom the letter should be sent."

Steve Terry says he hasn't worked on this yet because he has been busy with other UL issues, but he thinks this is really important, so it is still on his agenda.

7.7 Grounding and Bonding on portable structures and electrical systems

Task group report. From the July draft minutes:

Richard Cadena said he had hoped to have a draft for this meeting, but didn't make it. The task group almost has a rough draft, but it needs to be assembled and edited. He plans to have it ready for the next meeting.

Richard Cadena said the task group is making progress and may have something for the January meeting. Task group membership was confirmed.

7.8 Fixing the strain relief requirement in UL 1691

Update on the tri-national strain relief saga. Steve Terry.

Steve Terry reported that consensus has been reached, and the strain relief test will not require cut conductors. He has asked about the earliest date the standard can be published.

8 New business

8.1 A Canadian E1.18

Art Wanuch reported that a draft of a shorter Canadian document based on the larger, US-centric BSR E1.18 exists. He feels that it would be useful to the industry and should be published in some form. The Canadian document had been sent to the working group in July, but no action was taken on it at the July 2012 meeting. The consensus of the working group was that it should be considered. Karl Ruling will send it to the working group for consideration at the January meeting.

8.2 Marking auxiliary bonding conductors

Roger Lattin explained that it is important to be able to tell the difference between grounding and bonding conductors. Green and green-with-yellow stripe are two ways of marking grounding conductors, but green-with-yellow-stripe tape is only sold in Europe. Applying alternating strips of green and yellow tape from separate rolls is slow and laborious. Is there a better way?

The consensus was that this two-color tape is a good solution, and that the manufacture will respond by making it available in North America if the market need is made clear.

No motions were made.

8.3 Friction mating cam-type connectors

Roger Lattin asked about appropriate rubber boot lubricants for cam-type single-pole connectors. Connecting these all day results in very sore forearms and perhaps repetitive stress injury.

The consensus of the group is that twisting large connectors together all day is indeed hard work, but this was not perhaps a standards problem appropriate to this group. One person suggested that the solution is not to have one person do this job all day, but to split it up among several workers.

8.4 CEC and NEC harmonization

Steve Terry said he'd recently bought a copy of the CEC and read it. He asked if it would be worthwhile to try to harmonize the entertainment industry sections between it and the NEC? What is the process if we want to do this? Why should there be substantive differences between the two documents?

Art Wanuch, who is on the CEC section 66 committee (amusement parks, midways, carnivals, film and TV sets, TV remote broadcasting locations, and traveling shows) committee, explained the process. (Section 44 is theatre installations.) He noted that the disparities are not always a big problem, but the theatre section of the CEC is antiquated.

8.5 CSA and UL harmonization

Steve Terry said it would be good to harmonize UL 1573 and the CSA stage and studio luminaire standard. He asked Art Wanuch how we can propose changes. Art Wanuch said he would find out.

9 Other business

None.

10 Schedule for future meetings

Mitch Hefter announced that the next working group meeting is scheduled for Friday 25 January 2013, from 09:00 to noon at the Marriott Solana in Westlake, TX.

11 Adjournment

Jerry Gorrell moved that the meeting adjourn. The motion was seconded. The motion was approved with a show of hands. Mitch Hefter declared the meeting adjourned at 20:23.

Membership and Contact Information as of 29 November 2012

Name	Company	Representing	Voting status	Int. cat.
Patric J. Abaravich	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	A	U
Daniel Ayers	Norcostco (Sales-Midwest)	Norcostco	O	DR
Robert Barbagallo	Solotech Inc.	Solotech Inc.	O	DR
Lee J. Bloch	Bloch Design Group, Inc.	Bloch Design Group, Inc.	O	G
Joe Boardman	Bender Inc.	Bender GmbH & Co. KG	A	MP
Ron Bonner	PLASA Technical Resources Office	PLASA EU	P	U
Eric Bouchard	Cirque du Soliel	Cirque du Soliel	O	CP
Louis Bradfield	Louis Bradfield	Louis Bradfield	P	U
Stephen (Steve) Brock	Bender ET Inc.	Bender GmbH & Co. KG	A	MP
André Broucke	André Broucke	André Broucke	O	G
John (Javid) D. Butler	Integrated Theatre, Inc.	Integrated Theatre, Inc.	O	CP
Richard Cadena	Academy of Production Technology	Academy of Production Technology	P	G
Vincent J. Cannavale	Motion Laboratories	Motion Laboratories	P	CP
Michael J. Carnaby	Mikan Theatricals	Mikan Theatricals	O	DR
Edward R. Condit	Edward R. Condit	Edward R. Condit	O	U
James Davey	AC Power Distribution Inc.	AC Power Distribution Inc.	P	CP
Kenny Delahoussaye	Aggreko	Aggreko	O	DR
Jeff deRecat	Marinco	Actuant Corporation	P	MP
Jim Digby	The Collaborative Endeavor Group	Linkin Park Touring/The Collective	O	U
William Drake	Marinco	Actuant Corporation	A	MP
Marsha DuBois	Pintech Stage Connectors, Inc.	Pintech Stage Connectors, Inc.	O	CP
Steve DuBois	Pintech Stage Connectors, Inc.	Pintech Stage Connectors, Inc.	O	CP
James Eade	PLASA	PLASA	O	G
Don Earl	Earl Girls, Inc.	Earl Girls, Inc.	O	DR
Brian Eustace	Mole-Richardson Co.	Mole-Richardson Co.	P	MP

Name	Company	Representing	Voting status	Int. cat.
Jose J. Flores	Kino Flo, Inc.	Kino Flo, Inc.	O	MP
Trevor Forrest	Helvar Lighting Control	Helvar Lighting Control	O	MP
Howard Forryan	Harting Ltd.	Harting KGAA	A	G
Ian Foulds	IATSE Local 873	Entertainment Electrical Safety Committee of Ontario	P	G
Phillip M. Gallo	TMB	TMB	O	DR
Ed Garstkiewicz	Harting Inc., North America	Harting KGAA	P	G
Richard B. Glickman	Gliconen Corporation	Rosco Laboratories	O	MP
Reuben Goldberg	Technic Services	Technic Services	O	U
Jerry Gorrell	Theatre Safety Programs	Theatre Safety Programs	P	U
Bill Grande	Leviton Manufacturing Co., Inc.	Leviton Manufacturing Co., Inc.	A	MP
Torsten Gruhn	Bender Inc.	Bender GmbH & Co. KG	A	MP
Mitch Hefter	Mitch Hefter	USITT	P	U
Peter Herrmann	Motion Laboratories	Motion Laboratories	A	CP
David Herrmann	Motion Laboratories	Motion Laboratories	A	CP
Jim Holladay	Luxence	Luxence	O	G
Wendy Holt	AMPTP/CSATF	Alliance of Motion Picture and Television Producers	P	G
Simon Hunt	IATSE Local 891	IATSE Local 891	O	U
Richard L. Eberth_Jr.	North Shore Safety	Airpax Corporation	O	MP
Tyrone Mellon_Jr.	Lex Products Corp.	Lex Products Corp.	A	CP
Hiroshi Kita	Marumo Electric Co., Ltd.	Marumo Electric Co., Ltd.	O	MP
Wayne Kowalski	Coleman Cable Inc.	Coleman Cable Inc.	O	MP
Edwin S. Kramer	I.A.T.S.E. Local 1	I.A.T.S.E. Local 1	P	U
Charles (Chuck) Kurten	Underwriters Laboratories, Inc.	Underwriters Laboratories, Inc.	O	G
Roger Lattin	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	P	U
Michael Lay	Philips Color Kinetics	Royal Philips Electronics	P	MP
Marty Lazarus	Chicago Spotlight, Inc.	Chicago Spotlight, Inc.	O	DR

Name	Company	Representing	Voting status	Int. cat.
Nathan Leonard	Bender Group	Bender GmbH & Co. KG	P	MP
Dave Lester	Clair Global	Clair Global	O	U
George Long	Aggreko Event Services	Aggreko	P	DR
Bob Luther	Lex Products Corp.	Lex Products Corp.	P	CP
William L. Maiman	William L. Maiman	William L. Maiman	O	U
Paul F. Mardon	Pulsar Ltd.	Pulsar Ltd.	O	MP
Greg Mayberry	AC Power Distribution Inc.	AC Power Distribution Inc.	A	CP
Pat Miller	Hubbell Wiring Devices	Hubbell Inc.	O	MP
David Murray	IPC Resistors Inc.	IPC Resistors Inc.	O	CP
Kevin O'Brien	Bestek Lighting & Staging	Bestek Lighting & Staging	O	U
Natti Pierce-Thomson	North American Theatre Technology	North American Theatre Technology	O	U
Elizabeth E. (Lizz) Pittsley	Elizabeth Pittsley	Elizabeth Pittsley	O	U
R. Bruce Prochal	IATSE 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
Jared Saltzman	Jared Saltzman	Jared Saltzman	O	U
Larry Schoeneman	DesignLab Chicago, Inc.	DesignLab Chicago, Inc.	P	DR
Ford Sellers	Cornell University	Cornell University	O	U
Mike Skinner	CBS Studio Center	Alliance of Motion Picture and Television Producers	O	U
Sean Sloat	Lex Products Corp.	Lex Products Corp.	A	CP
Arnold Tang	Arnold Tang Productions	Arnold Tang Productions	O	G
Steve Terry	Electronic Theatre Controls	Electronic Theatre Controls, Inc.	P	MP
Eric Tishman	Rosco Laboratories	Rosco Laboratories	O	MP
Stephen Vanciel	Stephen Vanciel	Stephen Vanciel	O	U
Ken Vannice	Leviton Manufacturing Co., Inc.	Leviton Manufacturing Co., Inc.	P	MP
Art Wanuch	Entertainment Electrical Safety Committee of Ontario	Entertainment Electrical Safety Committee of Ontario	A	G
Colin Waters	TMB	TMB	O	DR

Name	Company	Representing	Voting status	Int. cat.
Jody Williquette	Electrivers, Inc.	Electrivers, Inc.	P	CP
Richard Wolpert	Union Connector Company (MO)	Union Connector Company	O	CP
Keith S. Woods	Lakhri Impressions Ltd.	IATSE Local 891	P	U
Jiantong Wu	Beijing Special Engineering Design & Research Institute	Beijing Special Engineering Design & Research Institute	O	G
Alex Yoon	Mole-Richardson Co.	Mole-Richardson Co.	A	MP

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