

Minutes
Electrical Power Working Group
09:00 to noon
Friday, 14 July 2006
Dallas/Ft. Worth Airport Marriott South
Ft. Worth, Texas

Chairmen: Mitch Hefter; Entertainment Technology (Genlyte Group), representing USITT; P; U
Ken Vannice; Colortran (Leviton Manufacturing Co., Inc.); P; MP

Recording secretary: Karl G. Ruling; ESTA

Members attending: James Davey; AC Power Distribution Inc.; P; CP
Paul Menetrey; Menetrey Partners (Bender GmbH & Co. KG); A; MP
Ian Foulds; IATSE Local 873, representing the Entertainment Electrical Safety
Committee of Ontario; P; G
Michael Lay; Strand Lighting (Genlyte Group LLC); P; MP (new parent company)
Edwin S. Kramer; I.A.T.S.E. Local 1; P; U
Roger Lattin; I.A.T.S.E. Local 728; P; U
Kenneth M. Makowski; Lex Products Corp.; A; CP
Jeff deRecat; Marinco/ADI (Marinco); P; MP
Nic Bowker; PLASA; P; G
Michael Scudday; SSRC, Inc.; P; CP
Jerry Gorrell; Theatre Safety Programs; P; U
Richard Wolpert; Union Connector Company; P; CP
William L. Maiman; P; U

Visitors: None

1 Opening remarks

Mitch Hefter called the meeting to order at 9:00 and welcomed all to drought-ridden, hot, Ft. Worth, Texas.

2 Attendance and membership

2.1 Introduction of those present and taking attendance

Those present introduced themselves while a red attendance sign-in sheet was circulated.

2.2 Determination of quorum

Mitch Hefter asked for the principals present to raise a hand. He announced that enough voters were present to constitute a quorum.

2.3 Recognition of alternate voting members

Hefter asked for a show of hands of the alternates. Two were recognized.

2.4 Requirements for membership

Hefter reminded those present that membership is open to all who are affected by the work of the group. Companies that would be in the 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 without a loss of voting status.

2.5 Processing of new membership requests

The following applications had been received:

Jeremy B. Collins of Selecon, applied as an observer in the MP interest category.

Greg Mayberry of AC Power Distribution Inc., applied as an alternate in the CP interest category.
(James Davey had become the principal when Michael Amorelli left the company)

Michael Lay of Strand Lighting reapplied as a principal in the MP category because Strand is now owned by the Genlyte Group LLC.

Roger Lattin moved that the applications be accepted. The motion was seconded, and then approved with a show of hands.

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

Name	Company	Representing	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
George Long	Aggreko Event Services	Aggreko	P	DR
Kenny Delahoussaye	Aggreko	Aggreko	A	DR
Wolfgang Hofheinz	Bender GmbH & Co. KG	Bender GmbH & Co. KG	P	MP
Joe Boardman	Bender Inc.	Bender GmbH & Co. KG	A	MP
Paul Menetrey	Menetrey Partners	Bender GmbH & Co. KG	A	MP
Steve Terry	Electronic Theatre Controls	Electronic Theatre Controls, Inc.	P	MP
Ian Foulds	IATSE Local 873	Entertainment Electrical Safety Committee of Ontario	P	G
Michael Lay	Strand Lighting	Genlyte Group LLC	P	MP
Pat Miller	Hubbell Wiring Devices	Hubbell Inc.	P	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
John (Javid) D. Butler	Integrated Theatre, Inc.	Integrated Theatre, Inc.	P	CP
Ken Vannice	Colortran	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
Kenneth M. Makowski	Lex Products Corp.	Lex Products Corp.	A	CP
Louis Bradfield	Louis Bradfield	Louis Bradfield	I	U
Jeff deRecat	Marinco/ADI	Marinco	P	MP
Bud Toly	Marinco/ADI	Marinco	A	MP
William Drake	Marinco	Marinco	A	MP
W. G. Krokaugger	Mole-Richardson Co.	Mole-Richardson Co.	P	CP
Al DeMayo	Mole-Richardson Co.	Mole-Richardson Co.	A	CP
Nic Bowker	PLASA	PLASA	P	G
Michael Scudday	SSRC, Inc.	SSRC, Inc.	P	CP
Stephen Vanciel	Stephen Vanciel	Stephen Vanciel	P	U
Jerry Gorrell	Theatre Safety Programs	Theatre Safety Programs	P	U
Michele Yindrick	TMB	TMB	P	MP
Colin Waters	TMB	TMB	A	MP
Richard Wolpert	Union Connector Company	Union Connector Company	P	CP
Mitch Hefter	Entertainment Technology (Genlyte Group)	USITT	P	U
William L. Maiman	William L. Maiman	William L. Maiman	P	U
		Total	24	
			7	MP
			6	CP
		Votes by interest category	1	DR
			8	U
			2	G

3 Approval of the minutes from the previous meeting (EP/2006-7007)

Eddie Kramer moved that the draft minutes of the previous meeting be approved as written. The motion was seconded and then accepted with a show of hands.

4 Reading of the call for patents

The following statement was read aloud to the assembly by Mitch Hefter:

"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."

No patent or copyright issues were brought to the attention of the assembly.

5 Reading of the anti-trust statement

The following statement was read aloud to the assembly by Mitch Hefter:

"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, the Technical Standards Manager, held up one of the easy-to-read pamphlets to show that he had some available for anyone requesting one at that moment. No restraint of trade issues were brought to the attention of the assembly.

6 Approval of agenda

Roger Lattin moved that the draft 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

Ken Vannice reported on the move to adopt IEC 61000-3-2 for use in North America. The document is an IEC harmonics standard, and is based on European power systems. The US industry position is that it is not valid for North American power systems, but there is a move to adopt it in Canada. The push seems to be from power generators, that wish to clean up the power lines so that they can be used for data transmission. The proposal to adopt it has been offered for public review, and comments were received. The comments were not heeded. At first the standard will be voluntary, but Vannice believes that they will eventually make the standard mandatory.

Vannice said he will draft a letter in response on how it will impact our industry, and will send it to Karl Ruling for possible action as an ESTA position statement.

Vannice sees a huge impact from IEC 61000-3-2 on the lower end of the dimmer market. The powerline emissions limits cannot be met by inexpensive SCR dimmers. We can deal with IEE 519, which measures the harmonics at the building service entrance. (Whatever you do on your property is your business, as long as it doesn't go onto the grid.) The IEC 61000-3-2 standard measures the harmonics at the connection for each power-using device.

Jerry Gorrell reported on the problems being caused by broadband over powerlines. The Amateur Radio Relay League has been fighting these systems because they can and do cause all sorts of problems with amateur radio broadcasts. The interference is real and it has been documented, but the utilities have not responded to the problems, and the FCC is loath to go against the power companies.

Gorrell directed us to visit ARRL.org and look at the BPL link (<http://www.arrl.org/tis/info/HTML/plc/>).

7.2 ANSI E1.24, pin connectors

Karl Ruling reported that the document is published.

Ken Vannice reported that Leviton's VP of standards reported that UL is going to incorporate ANSI E1.24 into UL 498. Apparently a UL rep at a meeting reported that Karl Ruling had objected to UL not taking heed of the ANSI E1.24 standard. So, they will.

7.3 BSR E1.18 portable feeder cable selection and use

Ruling said that the document is in public review.

There was a brief discussion of Andre Broucke's email suggesting we address voltage drop due to inductance in E1.18. This is the one comment on the draft standard so far.

Roger Lattin revisited his experience with paralleled conductors and harmonic loads from the last meeting. This discussion then moved into a discussion of the grounding systems used in buildings and what changes need to be made when additional service is brought into the building.

Vannice raised the issue of dealing with Canadian rules for portable power feeder systems. We need to deal with comments from Canadians about Canadian practice. How do we do that?

Eddie Kramer suggested that the differences are not that great, and we should see what the comments are before we decide how to deal with them.

There was a discussion of some of the differences in what is permitted and not permitted in Canada versus the US.

Roger Lattin reported cable crossover manufacturers are interested in a standard for them. They are not UL-listed, but customers are asking for UL listing. Should we write a product standard, or should they press UL?

Lattin was directed by the chairmen to tell the interested parties to submit a written a proposal and to indicate their interest in working personally on such a standard.

7.4 BSR E1.19 GFCI task group

Ruling said the review closed EOD 10 July 2006. He had not had time to collate the comments, but he had forwarded all the comment forms to Bob Luther so the task group could get started on drafting proposed resolutions.

Mitch Hefter reported that the task group had met last night (July 13).

Roger Lattin reported that many of the comments had been dealt with, but that the group was taken aback by the comments from Michael Skinner of CBS Studios, who is usually associated with the AMPTP. The comment was circulated to the working group and discussed.

"Currently the latest edition of the National Electrical Code (NEC) does not require the use of these devices in the Motion Picture and Television Industries. In fact, proposals to add these requirements in the NEC were rejected by the Code Making Panels. These proposals were

submitted by the manufacturer of these devices attempting to have the Code require the use of their products. They were rejected mainly because the submitter did not provide enough technical substantiation and other information, such as injury and loss reports, to warrant such a major change in the Code.

"The Motion Picture and Television Industry must abide by the requirements of Article 250 of the NEC which requires all non-current carrying metal parts of equipment to be grounded and that an effective ground-fault current path be maintained. This ground-fault path is defined as "An intentionally constructed, permanent, low-impedance electrically conductive path designed and intended to carry current under ground-fault conditions from the point of a ground fault on the equipment to the electrical supply source and that facilitates the operation of the overcurrent protective device...". This low-impedance path will also limit the voltage-to-ground to safe levels. Also, GFCI devices do not operate on accidental contact between the line and neutral so if a person has hand to hand contact with a "hot" wire and the neutral, the GFCI will not trip unless the person is grounded also.

"By complying with the NEC, the Motion Picture and Television Industry feels the workplace should be free of the hazards of ground-faults. Not having a mandatory requirement does not preclude the use of these devices, and the Motion Picture and Television Industry would like the use of these devices to be a case-by-case risk assessment instead of a requirement."

The comment suggests that BSR E1.19 requires GFCI, but BSR E1.19 does not. It only suggests where GFCI devices may be helpful and gives guidance on their use.

There was discussion of the GFCI requirements of NFPA 70E, with several working group members consulting copies on their laptop computers. Clause 110.9 (3) (d), requires GFCI protection anywhere workers use portable electrical equipment and are likely to be wet, which could include motion picture and television studios in some cases.

7.5 BSR E1.32 luminaire inspection guidance

Jerry Gorrell said that he needs more task group participation on the project. He thinks he will have the document significantly advanced by LDI, perhaps so far as to be ready to be considered for public review.

7.6 Generator earthing

Roger Lattin reported that he had done some more research. He talked to George Long and others in the portable generator business about earthing. He will send out a questionnaire to find out more about the earthing practices in use. There are a variety of different ideas of what should be considered safe practice. Lattin distributed to those interested copies of Chapter 33, *Generator and System Grounding*, from *On-Site Power Generation*, and Chapter 12, *Grounding Separately Derived Systems*, from *Soares Book on Grounding and Bonding*.

7.7 CANENA report

No new news, reported Ken Vannice. There had been another web meeting, but he was unable to participate.

8 New business

None.

9 Other business

None.

10 Changes to observer status with third meeting missed

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

No one.

11 Schedule for future meetings

It was announced that the next meeting is scheduled for 19:00 to 23:00, Friday, 20 October 2006, at the Las Vegas Hilton, 3000 Paradise Road, next to the Las Vegas Convention Center.

A meeting space for the GFCI task group at LDI was requested. Karl G. Ruling wrote an email to Frances Thompson requesting one. The meeting room had wireless Internet access, so the email was sent immediately.

12 Adjournment

Jerry Gorrell moved that the meeting adjourn. The motion was seconded and then approved by a simultaneous show of hands and a voice vote. Mitch Hefter declared the meeting adjourned at 10:51.

Working Group Membership and Contact Information as of 11 August 2006

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
Andre Broucke	ADB - TTV Technologies	ADB-TTV Group	O	MP
George Long	Aggreko Event Services	Aggreko	P	DR
Kenny Delahoussaye	Aggreko	Aggreko	A	DR
Brian Merriken	Airpax Corporation	Airpax Corporation	O	MP
Mike Skinner	CBS Studio Center	Alliance of Motion Picture and Television Producers	O	U
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
Wolfgang Hofheinz	Bender GmbH & Co. KG	Bender GmbH & Co. KG	P	MP
Joe Boardman	Bender Inc.	Bender GmbH & Co. KG	A	MP
Paul Menetrey	Menetrey Partners	Bender GmbH & Co. KG	A	MP
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 Soleil	Cirque du Soleil	O	CP
Julie Rogers	City of Phoenix Civic Plaza	City of Phoenix	O	G
Wayne Kowalski	Coleman Cable Inc.	Coleman Cable Inc.	O	MP
Ford Sellers	Cornell University	Cornell University	O	U
Ron Dahlquist	Dadco	Dadco	O	MP
Don Earl	Earl Girls, Inc.	Earl Girls, Inc.	O	DR
Steve Terry	Electronic Theatre Controls	Electronic Theatre Controls, Inc.	P	MP
Ian Foulds	IATSE Local 873	Entertainment Electrical Safety Committee of Ontario	P	G
Art Wanuch	Robertson Electric Wholesale	Entertainment Electrical Safety Committee of Ontario	O	G
Michael Lay	Strand Lighting	Genlyte Group LLC	P	MP
Trevor Forrest	Helvar Lighting Control	Helvar Lighting Control	O	MP
Pat Miller	Hubbell Wiring Devices	Hubbell Inc.	P	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
Gian Carlo C. Bartolotti	Ibeam SP / Banco de Eventos	Ibeam SP / Banco de Eventos	O	U
Bill Kanne	Illumination Dynamics	Illumination Dynamics	O	U
John (Javid) D. Butler	Integrated Theatre, Inc.	Integrated Theatre, Inc.	P	CP
David Murray	IPC Resistors Inc.	IPC Resistors Inc.	O	CP
Stephen J. Kay	K-Tec Corporation	K-Tec Corporation	O	MP
Jose J. Flores	Kino Flo, Inc.	Kino Flo, Inc.	O	MP
Don Gray	Kohler Event Services	Kohler Co.	O	U
Ken Vannice	Colortran	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
Reinhold Luther	Lex Products Corp.	Lex Products Corp.	O	CP
Kenneth M. Makowski	Lex Products Corp.	Lex Products Corp.	A	CP
Louis Bradfield	Louis Bradfield	Louis Bradfield	I	U
Jim Holladay	Luxence	Luxence	O	G
Jeff deRecat	Marinco/ADI	Marinco	P	MP
Phil Fram	Marinco	Marinco	O	MP
Bud Toly	Marinco/ADI	Marinco	A	MP
William Drake	Marinco	Marinco	A	MP
Hiroshi Kita	Marumo Electric Co., Ltd.	Marumo Electric Co., Ltd.	O	MP
Michael Klein	Metropolitan Engineering, Inc.	Metropolitan Engineering, Inc.	O	G
W. G. Krokaugger	Mole-Richardson Co.	Mole-Richardson Co.	P	CP
Al DeMayo	Mole-Richardson Co.	Mole-Richardson Co.	A	CP
Chris Guptill	Ohlone College	Ohlone College	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

Name	Company	Representing (This is the sort field.)	Voting status	Int. cat.
Nic Bowker	PLASA	PLASA	P	G
James Eade	PLASA	PLASA	O	G
Mac Perkins	PNTA Inc.	PNTA Inc.	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
Jeremy B. Collins	Selecon	Selecon	O	MP
Richard A. Prey	SMS Inc. / PGS LLC	SMS Inc. / PGS LLC	O	CP
Robert Barbagallo	Solotech Inc.	Solotech Inc.	O	DR
Michael Scudday	SSRC, Inc.	SSRC, Inc.	P	CP
Stephen Vanciel	Stephen Vanciel	Stephen Vanciel	P	U
Reuben Goldberg	Technic Services	Technic Services	O	U
Jerry Gorrell	Theatre Safety Programs	Theatre Safety Programs	P	U
Richard D. Thompson	Thompson Associates	Thompson Associates	O	G
Colin Waters	TMB	TMB	P	MP
Richard Wolpert	Union Connector Company	Union Connector Company	P	CP
Mitch Hefter	Entertainment Technology (Genlyte Group)	USITT	P	U
Eckart Steffens	SOUNDLIGHT	VPLT	O	G
William L. Maiman	William L. Maiman	William L. Maiman	P	U

Key to codes:

P	principal voting member	MP	mass-market producer interest category
A	alternate voting member	CP	custom-market producer interest category
I	individual voting member	DR	dealer or rental company interest category
O	observer, non-voting	U	user interest category
		G	general-interest interest category