

Minutes

Electrical Power Working Group

Friday, 3 May 2002
Dallas/Ft. Worth Marriott South
Ft. Worth, TX

Chairmen: Ken Vannice; Colortran (Leviton Manufacturing Co., Inc.); principal; producer
Bob Luther; Lex Products Corp.; principal; producer

Recording secretary: Karl G. Ruling

Members attending: Michael Amorelli; AC Power Distribution Inc.; principal; general interest
George Long; Aggreko Event Services (Aggreko); principal; user
Arnold Tang; Arnold Tang Productions; observer; general interest
Joe Boardman; Bender Inc. (Bender GmbH & Co. KG); alternate; producer
Steve Terry; Electronic Theatre Controls; principal; producer
Michael Klein; Environmental System Design; principal; general interest
Edwin S. Kramer; I.A.T.S.E. Local 1; principal; user
Roger Lattin; I.A.T.S.E. Local 728; principal; user
Tim Cox; PLASA; principal; general interest
Paul Menetrey; Power Guard Systems, LLC (SMS Inc./PGS LLC); alternate;
general interest (joined as representative of SMS Inc./PGS LLC at this
meeting)
Richard D. Thompson; Thompson Associates; principal; general interest (joined at
the end of this meeting)
Brian Dowd; TMB; principal; producer

Visitors: Bill Maiman; ESTA
Rob Holland; University of Cincinnati

1 Opening remarks

Ken Vannice called the meeting to order at 08:07. He welcomed all to Ft. Worth and the new Marriott South.

2 Attendance and membership

2.1 Introduction of those present and taking attendance

Vannice asked those present to introduce themselves, which they did. The attendance sign-in sheet was circulated, and Karl Ruling instructed people on how to fill it out.

2.2 Determination of quorum

Ken Vannice asked principals to raise their hands. He counted them and announced that we had a quorum.

2.3 Recognition of alternate voting members

Vannice asked for alternate voting members to identify themselves. He reminded people of the one-organization-one-vote rule.

2.4 Requirements for membership

Ken Vannice said that membership is open to all who are materially affected by the work of the group, but noted that we need a balance of interests. He also reminded people of the attendance and voting requirements.

2.5 Processing of new membership requests

Bob Luther noted that Paul Menetrey (observer) had applied as alternate for Bill Masten of PGS LLC. This would be a parent company and interest category change, as well as a voting status change.

Roger Lattin moved that the application be accepted. The motion was seconded. The motion was accepted by a unanimous show of hands.

The full consensus body during the meeting period, including those members not present, was thus:

| Name | Company | Representing | Voting status | Interest category |
|-----------------------|-----------------------------------|-----------------------------------|---------------|-------------------|
| Michael Amorelli | AC Power Distribution Inc. | AC Power Distribution Inc. | P | G |
| James Davey | AC Power Distribution Inc. | AC Power Distribution Inc. | A | G |
| Jeff deRecal | Advanced Devices, Inc. | Advanced Devices, Inc. | P | P |
| Bud Toly | Advanced Devices, Inc. | Advanced Devices, Inc. | A | P |
| George Long | Aggreko Event Services | Aggreko | P | U |
| Wolfgang Hofheinz | Bender GmbH & Co. KG | Bender GmbH & Co. KG | P | P |
| Joe Boardman | Bender Inc. | Bender GmbH & Co. KG | A | P |
| Steve Terry | Electronic Theatre Controls | Electronic Theatre Controls, Inc. | P | P |
| Michael Klein | Environmental System Design | Environmental System Design | P | G |
| Edwin S. Kramer | I.A.T.S.E. Local 1 | I.A.T.S.E. Local 1 | P | U |
| Roger Lattin | IATSE Local 728 | I.A.T.S.E. Local 728 | P | U |
| R. Bruce Prochal | I.A.T.S.E. Local 728 | I.A.T.S.E. Local 728 | A | U |
| Patric J. Abaravich | IATSE Local 728 | I.A.T.S.E. Local 728 | A | U |
| Ken Vannice | Colortran | Leviton Manufacturing Co., Inc. | P | P |
| Mitchell Stein | Leviton Manufacturing Co., Inc. | Leviton Manufacturing Co., Inc. | A | P |
| Tim Bachman | Leviton/Colortran | Leviton Manufacturing Co., Inc. | A | P |
| Bob Luther | Lex Products Corp. | Lex Products Corp. | P | P |
| Louis Bradfield | Louis Bradfield | Louis Bradfield | I | U |
| W. G. Krokaugger P.E. | Mole-Richardson Co. | Mole-Richardson Co. | P | P |
| Brian Parker | Mole-Richardson Co. | Mole-Richardson Co. | A | P |
| Tim Cox | PLASA | PLASA | P | G |
| Robert Barbagallo | Proximo Inc. | Proximo Inc. | P | G |
| William N. Masten | SMS Inc. / PGS LLC | SMS Inc. / PGS LLC | P | P |
| Richard A. Prey | SMS Inc. / PGS LLC | SMS Inc. / PGS LLC | A | P |
| Paul Menetrey | Power Guard Systems LLC | SMS Inc. / PGS LLC | A | P |
| Michael Lay | Strand Lighting | Strand Lighting Ltd. | P | P |
| Brian Dowd | TMB (NJ) | TMB | P | P |
| Colin Waters | TMB | TMB | A | P |
| Mitch Hefter | Ent. Tech. (Genlyte Thomas Group) | USITT | P | G |
| | | general interest | | 5 |
| | | user | | 4 |
| | | producer | | 9 |
| | | total | | 18 |

3 Approval of the minutes from the previous meeting

Eddie Kramer said that the draft minutes of the February 2002 meeting should be amended as follows:

7.4 BSR E1.18 portable feeder cable selection and use task group

Eddie Kramer reported that they had had a power feeder breakfast, which was entertaining but not particularly productive. He proposed that they have another meeting on the Thursday before the EPWG meeting in Texas.

There was a discussion of how to move forward. Steve Terry advised that one of the first tasks should be to create an document outline listing the topics to be covered in the document to be used to assign homework to task group members in order to complete the document.

Steve Terry moved to that the minutes as amended be accepted. The motion was seconded. The motion was approved by a unanimous show of hands.

4 Reading of the call for patents

Bob Luther read the following aloud:

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

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

No intellectual property issues were brought to the attention of the working group.

5 Reading of the anti-trust statement

Bob Luther read the following aloud:

"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 \$100,000 and imprisoned for up to three years. An easy to read pamphlet describing restraint of trade issues is available from the Technical Standards Manager."

No restraint of trade or anti-trust issues were brought to the attention of the working group.

6 Approval of agenda

The agenda was approved by consent.

7 Old business - task group reports

7.1 EMC task group

Vannice reported that the American National Standard for power line harmonic emissions with lighting equipment, ANSI C82.77-2002 has been published. It is available for free on the NEMA website.

7.2 Problems with pin connectors task group report

Brian Dowd reported that Mr. Kurtin of UL-NY had said that they can't test to the USITT standard because it's not an ANSI standard. Kurtin suggested that going for ANSI would be opening a can of worms and recommended against it. Therefore, Dowd noted, there is no solution to the intermateability problem with the argument advanced by Kurtin.

Steve Terry said that we now need to go to the head engineer with a letter, laying out the whole problem. There was a discussion of who should write a letter and how.

Terry moved that a letter to the UL chief engineer on ESTA stationery be sent from the EPWG. The letter shall call attention to UL's lack of adoption of the USITT standard as a reference standard for all pin connector listings. Ken Vannice volunteered to write the letter. The motion was seconded. The motion was accepted with a unanimous show of hands.

Ken Vannice reported that the USITT Standards Committee had ruled that if there is evidence that the USITT standard needs to be an ANSI standard, and it will have to be moved to an ANSI group, since UITT cannot make it an American National Standard. However, if it doesn't need to be an ANSI standard, and if changes are needed, then USITT will undertake the revision.

There was a discussion of how the USITT standard might be revised. Steve Terry pointed out that the standard was the result of a major effort with industry input, and that this is the best we could do. He suggested that we are not likely to do better on a second go-around and that perhaps the market should simply respond to the unreliability of the 100 amp connector, which is the only one with reported significant problems, by simply using a different connector. Lattin pointed out that the USITT standard has no definition of the size of the female socket, only that the female should mate to the male reliably. He said that the 60-amp connectors are also a problem. There was a discussion of whether this approach of defining the male pin and simply saying that the female shall mate reliably is an appropriate approach. Dowd noted that the NEMA approach is this same approach: the male is defined. The female has to mate reliably, and can do so by many methods. Terry argued that Lattin's anecdotal evidence shows that UL is not testing the females against a standard male.

Steve Terry moved that we reaffirm the USITT standard with the known editorial corrections on the 30-amp connector and that we press for the use of this standard by UL in its listing of pin connectors. The motion was seconded.

There was an extended discussion of the motion in which it was suggested that we should do some load testing of connectors to see if the design is adequate. The counter argument was that that might find that design of the connector is not good, but the standard is not going to fix that. We need a standard that gives us the best reliability with the existing, legacy design.

By show of hands, the motion was accepted with one abstention, and one vote against.

7.3 BSR E1.18 portable feeder cable selection and use task group

Eddie Kramer reported that they had met last night to work on version 2 of the draft document. Homework has been handed out for filling in the outline. Kramer asked that the homework be finished in one month.

Ken Vannice asked the group if the outline seems to be the right direction. He thanked Steve Terry for suggesting the outline because it has generated progress. Terry said he thought the draft outline was good, but he cautioned the task group to be careful to not endorse only one way of doing things. There needs to be a discussion of the various options offered, and to let the market decide what to use.

There was general praise for the outline, but there was an extensive discussion of whether it should include sister lugs and a smaller discussion of how this document will fit with the work of the electrical power certification group and whether it would be valid in Minnesota.

Vannice suggested as chair that the task group should incorporate the comments offered at this meeting into the document, and that another version should be generated and distributed to working group several weeks before the next meeting for approval at that meeting.

Eddie Kramer moved that "in the entertainment industries" shall be added to the end of the scope statement. The motion was seconded. The motion was accepted with a show of hands.

Steve Terry moved that the scope shall be: "This document shall encompass the selection, installation, and safe use of single-conductor portable power feeder cables used in the entertainment industry with a portable power distribution system." The motion was seconded. The motion was accepted by a show of hands. Terry stated that more than Cam-lok connectors should be covered as terminals.

Eddie Kramer invited Steve Terry, Michael Klein, and Ken Vannice to help with the sections this new scope will generate that address terminations made with devices other than Cam-loks.

7.4 BSR E1.19 GFCI task group

Joe Boardman reported that homework assignments were given after the last meeting. The fruits of some of the assignments had been received but had not been worked into a new document yet.

When will there be deliverables? asked Vannice. Roger Lattin said that a draft would be ready by two weeks before the next meeting. Vannice said that then phone calls need to be made four weeks before the meeting to make sure this happens. It was agreed that this shall be done.

Richard Thompson reported on the efforts to require the use of GFCI products in entertainment venues by writing them into codes. There was also a discussion of UL standards for GFCI device that recognize trip points higher than 6 ma.

7.5 BSR E1.17 configuration standard for HMI power cables status report

The TSC will vote on the motion to accept it as an American National Standard this afternoon, Ruling reported. He said he expected no controversy.

There was a discussion of the lack of a UL listing on most of the ballast power cords covered by the standard.

8 New business

Bob Luther suggested that the same problems that exist with the use of feeder cables also exists with branch circuit cables. This is a problem we might want to address in the future, he said.

There was a discussion of the problems with using branch circuit cables. Terry pointed out that the answer to most of the questions that Luther said people have can be found in the NEC. He asked what is the purpose of restating what is already available. Kramer pointed out that the NEC states that it is neither a design guide nor an instruction manual for untrained personnel. He argued that we need an "idiots guide" for entertainment electrical practices. Terry agreed with this.

Who should undertake this project? Luther noted that this is not something we have to do right now, but may emerge as we tackle problems. Luther suggested that a discussion of this should be an agenda item for the next meeting.

9 Other business

At this point in the meeting, Richard Thompson applied as a principal member in the general interest category. Eddie Kramer moved that his application be accepted. The motion was seconded. The motion was accepted unanimously with a show of hands.

Terry announced that there is a new class of harmonic filters that have arrived on the market that is incompatible with much entertainment lighting equipment. One trade name is "The Neutralizer." It's an LC shunt filter between neutral and ground that shorts out triplen harmonics. However, it modifies the sine wave power input to devices, and when used on the input of phase control dimming systems that need zero crossing detection, the dimming system doesn't work.

10 Schedule for future meetings

Ken Vannice announce that the next meeting will be Friday, July 26 from 8:00 to noon at this hotel.

11 Adjournment

Eddie Kramer moved that the meeting adjourn. The motion was seconded. The motion was accepted. Ken Vannice declared the meeting adjourned at 11:14.

Working Group Membership and Contact Information as of 3 July 2002

| Name | Company | Representing | Voting status | Int. cat. |
|--------------------------|-----------------------------------|--|---------------|-----------|
| Michael Amorelli | AC Power Distribution Inc. | AC Power Distribution Inc. | P | G |
| James Davey | AC Power Distribution Inc. | AC Power Distribution Inc. | A | G |
| Bud Toly | Advanced Devices, Inc. | Advanced Devices, Inc. | A | P |
| Jeff deRecat | Advanced Devices, Inc. | Advanced Devices, Inc. | P | P |
| George Long | Aggreko Event Services | Aggreko | P | U |
| Arnold Tang | Arnold Tang Productions | Arnold Tang Productions | O | G |
| David Evaniew | B. I. M. Limited | B. I. M. Limited | O | P |
| Wolfgang Hofheinz | Bender GmbH & Co. KG | Bender GmbH & Co. KG | P | P |
| Joe Boardman | Bender Inc. | Bender GmbH & Co. KG | A | P |
| Lee J. Bloch | Bloch Design Group Inc. | Bloch Design Group Inc. | O | G |
| Jeffrey Measley | Crouse-Hinds Molded Products | Crouse-Hinds Molded Products Inc. | O | P |
| Ron Dahlquist | Dadco | Dadco | O | P |
| Steve Terry | Electronic Theatre Controls | Electronic Theatre Controls, Inc. | P | P |
| Michael Klein | Environmental System Design | Environmental System Design | P | G |
| Trevor Forrest | Helvar Lighting Control | Helvar Lighting Control | O | P |
| Edwin S. Kramer | I.A.T.S.E. Local 1 | I.A.T.S.E. Local 1 | P | U |
| R. Bruce Prochal | I.A.T.S.E. Local 728 | I.A.T.S.E. Local 728 | A | U |
| Roger Lattin | I.A.T.S.E. Local 728 | I.A.T.S.E. Local 728 | P | U |
| Patric J. Abaravich | IATSE Local 728 | I.A.T.S.E. Local 728 | A | U |
| Richard Thornton Brown | Zero 88 Ltd. | i Light Group PLC | O | P |
| Gian Carlo C. Bartolotti | Ibeam SP / Banco de Eventos | Ibeam SP / Banco de Eventos | O | U |
| Bill Kanne | Illumination Dynamics | Illumination Dynamics | O | U |
| Kevin Stolpe | Illumination Dynamics | Illumination Dynamics | O | U |
| Jose J. Flores | Kino Flo, Inc. | Kino Flo, Inc. | O | P |
| Don Gray | Kohler Event Services | Kohler Co. | O | U |
| Ken Vannice | Colortran | Leviton Manufacturing Co., Inc. | P | P |
| Mitchell Stein | Leviton Manufacturing Co., Inc. | Leviton Manufacturing Co., Inc. | A | P |
| Tim Bachman | Leviton/Colortran | Leviton Manufacturing Co., Inc. | A | P |
| Bob Luther | Lex Products Corp. | Lex Products Corp. | P | P |
| Louis Bradfield | Louis Bradfield | Louis Bradfield | I | U |
| Jim Holladay | Luxence | Luxence | O | G |
| Phil Fram | Marinco | Marinco | O | P |
| Hiroshi Kita | Marumo Electric Co., Ltd. | Marumo Electric Co., Ltd. | O | P |
| Brian Parker | Mole-Richardson Co. | Mole-Richardson Co. | A | P |
| W. G. Krokaugger P.E. | Mole-Richardson Co. | Mole-Richardson Co. | P | P |
| Art Wanuch | M.C. Lights & Manufacturing, Ltd. | Ontario Film & Television Prod. Electrical Comm. | O | G |
| Tim Cox | PLASA | PLASA | P | G |
| Mac Perkins | PNTA | PNTA Inc. | O | G |
| Robert Barbagallo | Proximo Inc. | Proximo Inc. | P | G |
| Paul F. Mardon | Pulsar Ltd. | Pulsar Ltd. | O | P |
| Douglas Franz | QVC Network | QVC Network | O | U |
| Andre Broucke | ADB - TTV Technologies | Siemens | O | P |

| Name | Company | Representing | Voting status | Int. cat. |
|---------------------|---|-------------------------|---------------|-----------|
| William N. Masten | SMS Inc. / PGS LLC | SMS Inc. / PGS LLC | P | P |
| Richard A. Prey | SMS Inc. / PGS LLC | SMS Inc. / PGS LLC | A | P |
| Paul Menetrey | Power Guard Systems, LLC | SMS Inc./PGS LLC | A | P |
| Michael Lay | Strand Lighting | Strand Lighting Ltd. | P | P |
| Andy Topinka | Technical Group Services, Inc. | Thea & Schoen, Inc. | O | G |
| Richard D. Thompson | Thompson Associates | Thompson Associates | P | G |
| Colin Waters | TMB | TMB | A | P |
| Brian Dowd | TMB (NJ) | TMB | P | P |
| Richard Wolpert | Union Connector Company | Union Connector Company | O | P |
| Mitch Hefter | Entertainment Technology (Genlyte Thomas Group) | USITT | P | G |
| Eckart Steffens | SOUNDLIGHT | VPLT | O | G |
| | | Voters | 4 | U |
| | | | 9 | P |
| | | | 6 | G |
| | | Observers | 5 | U |
| | | | 11 | P |
| | | | 7 | G |

Voting Status

- P Principal voting representative for a company or organization
- A Alternate voting representative for a company or organization
- I Individual representing no organization other than himself or herself
- O Observer; non-voting

Interest Categories

- P Producer (manufacturer) of power distribution equipment
- U User of power distribution equipment
- G General interest in power distribution equipment