

**Minutes**  
**Electrical Power Working Group**  
06 October 2023  
Marriott D/FW Westlake, Westlake, TX

**Chairpersons:**

Mitch Hefter; USITT; P; U (presiding)  
Justin Bennett; University of the Incarnate Word; P; U

**Recording secretary:**

Richard Nix (ESTA)

**Attendees:**

Rodger Dean; R. Dean Lighting Limited; P; DR  
Nehad El-Sherif; Nehad El-Sherif; I; G  
Ian Foulds; Entertainment Electrical Safety Association; A; G  
Todd Fouyer; Musson Theatrical; O; DR  
Jerry Gorrell; Theatre Safety Programs; P; U  
Doug Hook; I.A.T.S.E. Local 58; P; U  
Richard (RJ) Kenny; Link USA, Inc.; P; MP  
Hans Lau; I.A.T.S.E. Local 728; A; U  
Michael Lay; Candela Controls, Inc; P; G  
Bob Luther; Lex TM3; P; MP  
Richard J. Nix; ESTA; exf; G  
Jason Potterf; Cisco; P; MP  
Dietmar Rottinghaus; Neutrik AG; P; MP  
Alan M. Rowe; I.A.T.S.E. Local 728; A; U  
Chris Ruble; Christopher Ruble; I; U  
Mike Skinner; Contract Services Administration Trust Fund; P; U  
Steve Terry; Electronic Theatre Controls, Inc.; P; MP  
Stephen Vanciel; Stephen Vanciel; I; U  
Mike Webb; Motion Laboratories, Inc.; P; MP  
Keith S. Woods; IATSE Local 891; P; U

**1 Opening remarks**

Mitch Hefter called the meeting to order at 19:06, welcoming everyone and thanking them for attending.

**2 Patent and anti-trust statements**

**2.1 Reading of the anti-trust statement**

Mitch Hefter read the following statement aloud to the assembly:

*ESTA and its members take seriously their obligation to comply with all applicable antitrust laws. Therefore, during this meeting and during all ESTA events, all discussions will be limited to those subjects that are permitted by the antitrust laws. All members should refrain from any discussion or mention of competitively sensitive subjects such as the current or future prices charged for any member product or services, current or future marketing plans or strategies, and current or future costs, including employee salaries. There also must be no agreement on the suppliers or customers that members will or will not do business with or the markets in which members will conduct business.*

*Violations of the antitrust laws can have serious consequences. If you have any questions or concerns about anything that is discussed at an ESTA meeting, please bring your concern to ESTA management. An easy to read pamphlet describing the antitrust laws is available from the ESTA staff.*

Richard Nix held up the pamphlet for all to see.

**2.2 Reading of the call for patents**

Mitch Hefter 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, patent application, copyright, or other protected 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 revealed.

### **3 Attendance and Membership**

#### **3.1 Requirements for membership**

Mitch Hefter read the following statement aloud to the assembly:

*Membership is open to all parties who are affected by the work of the group; membership in ESTA is not a requirement, but there is a \$100/person/year participation fee to help fund the costs of running the Technical Standards Program. New applications shall not be processed until the participation fee has been paid. Voting members are required to attend meetings and vote on letter ballots. Any principal member and alternate that both miss three consecutive meetings or letter ballots will have their membership status changed to observer. This action will be taken at the beginning of the first meeting after such inaction and will be recorded in the minutes of that meeting.*

#### **3.2 Introduction of attendees and taking attendance**

Everyone introduced themselves.

#### **3.3 Determination of quorum**

*As of 16 September 2023 the consensus body has 27 voters. A quorum would be 10. Supermajority is 14.*

#### **3.4 Processing of new and other membership requests**

*As of 16 September 2023 the following applications have been received:*

*Richard (RJ) Kinney; Link; P; MP (new application)  
Patrick Teich; Cirque du Soliel Entertainment Group; P; U (new application, applied as A but CDS has no Principal on EPWG)  
Chris Ruble; Chris Ruble; I; U (new application)*

[All present]

Steve Terry moved to approve. Seconded. Carried.

#### **3.5 Changes to observer status due to lack of participation**

##### **3.5.1 Changes due to attendance**

*The following voting members have missed the last two meetings, and will have their voting status changed to Observer if not present today:*

*There are none.*

##### **3.5.2 Changes due to missed letter ballots**

*There are none.*

#### **3.6 Consensus body**

*This is the consensus body after today's meeting actions:*

<b>Delegate</b>	<b>Representing</b>	<b>Voting status</b>	<b>Int. cat.</b>
James Davey	A.C.T. Lighting, Inc	P	CP
George Long	Aggreko	P	DR
Michael Lay	Candela Controls, Inc	P	G
Patrick Teich	Cirque du Soliel Entertainment Group	P	U

<b>Delegate</b>	<b>Representing</b>	<b>Voting status</b>	<b>Int. cat.</b>
Jason Potterf	Cisco	P	MP
Mike Skinner	Contract Services Administration Trust Fund	P	U
Matthew Antonucci	Contract Services Administration Trust Fund	A	U
Chris Moulton	Contract Services Administration Trust Fund	A	U
Don Earl	Earl Girls, Inc.	P	DR
Steve Terry	Electronic Theatre Controls, Inc.	P	MP
Wendy Russell	Electronic Theatre Controls, Inc	A	MP
Elizabeth E. (Lizz) Pittsley	Elizabeth Pittsley	P	U
Art Wanuch	Entertainment Electrical Safety Association	P	G
Ian Foulds	Entertainment Electrical Safety Association	A	G
Robert Haycock	Robert Haycock	I	U
Edwin S. Kramer	I.A.T.S.E. Local 1	P	U
Doug Hook	I.A.T.S.E. Local 58	P	U
Charles McIntyre	I.A.T.S.E. Local 728	P	U
Alan M. Rowe	I.A.T.S.E. Local 728	A	U
Hans Lau	I.A.T.S.E. Local 728	A	U
Kevin Amick	IATSE Local 479	P	G
Keith S. Woods	IATSE Local 891	P	U
Simon Hunt	IATSE Local 891	A	U
Bob Luther	Lex Products	P	CP
Richard "RJ" Kenny	Link USA, Inc.	P	MP
Mark Pollock	Littelfuse, Inc.	P	MP
Mike Webb	Motion Laboratories, Inc.	P	MP
Rick Montgomery	Motion Laboratories, Inc.	A	MP
Michael Shaw	Motion Laboratories, Inc.	A	MP
Dietmar Rottinghaus	Neutrik AG Lichtenstein	P	MP
Roger Dean	R. Dean Lighting Limited	P	DR
Chris Ruble	Chris Ruble	I	U
Daniel Swalec	Daniel Swalec	I	U
Nehad El-Sherif	Nehad El-Sherif	I	G
Stephen Vanciel	Stephen Vanciel	I	U
Nick Holmberg	TMB	P	MP
Jerry Gorrell	Theatre Safety Programs	P	U
Justin Bennett	University of the Incarnate Word	P	U
Mitch Hefter	USITT	P	U
	<b>Total votes possible</b>	<b>30</b>	
Subtotals by interest categories	Custom producer (CP):	1	CP
	Designer (DE):	0	DE

Delegate	Representing	Voting status	Int. cat.
	Dealer or rental company (DR):	3	DR
	General interest (G):	4	G
	Mass-market producer (MP):	8	MP
	User (U):	14	U

*P = Principal voter; A = Alternate voter; I=Individual voter*

#### 4 Approval of the minutes from the previous meeting

See *EPmin07-2023r1\_DRAFT.pdf*

Steve Terry moved to approve the minutes. The motion was seconded and carried without objection or abstention.

#### 5 Approval of agenda

Steve Terry moved to approve the agenda. The motion was seconded and carried without objection or abstention.

#### 6 Old business

##### 6.1 ANSI E1.16 – 2002 (R2021) Entertainment Technology – Configuration Standard for Metal Halide Ballast Power Cables

*Reaffirmation, revision, or withdrawal by 28 October 2026.*

##### 6.2 ANSI E1.19 – 2021, Recommended Practice for the Use of Class A Ground-Fault Circuit Interrupters (GFCIs) Intended for Personnel Protection in the Entertainment Industry

*Reaffirmation, revision, or withdrawal by 15 October 2026.*

##### 6.3 ANSI E1.24 – 2012 (R2021), pin connectors

*Reaffirmation, revision, or withdrawal by 28 October 2026.*

##### 6.4 ANSI E1.32 – 2012 (R2022), Guide for the Inspection of Entertainment Industry Incandescent Lamp Luminaires

*Reaffirmation, revision, or withdrawal by 11 August 2027.*

##### 6.5 ANSI E1.51 – 2018, The Selection, Installation, and Use of Single-Conductor Portable Power Feeder Cable Systems for Use At 600 Volts Nominal or Less for the Distribution of Electrical Energy in the Television, Film, Live Performance and Event Industries in Canada

*Revision, reaffirmation, or withdrawal by 7 November 2023.*

[see *ANSI\_E1-51\_2018 Proposed revisions RD 06 09 2023.pdf*]

*The working group must decide which action to take at this meeting. Rodger Dean has provided a helpful draft document to facilitate this discussion.*

Keith Woods reported. The revisions shown in the distributed document is essentially a summary of changes made to the CEC. At this time the changes are being reviewed and approved by the individual provinces, and he thinks it might take until mid-year for them to complete. There was discussion about how the provincial adoption time frame might impact our revision process timeline. We can move into a revision process with E1.51 now. The revision and public review cycle will take approximately sixty days. Barring no comments, we can then wait to see if any revisions occur as a result of the provincial adoptions in Canada. Once that's done, we can revise accordingly, or we'll be ready for final approval.

Keith Woods moved to open it for revision. The motion was seconded. The motion carried. A PINS will be filed with ANSI.

##### 6.6 ANSI E1.53 – 2019, Overhead mounting of luminaires, lighting accessories, and other portable devices: specification and practice

*Revision, reaffirmation, or withdrawal by 3 June 2024.*

*The working group has three meetings, including today's, to decide which action to take.*

No action at this time.

#### **6.7 ANSI E1.58 – 2022, Indoor equipment outdoors**

*Revision, reaffirmation, or withdrawal by 10 August 2027.*

#### **6.8 BSR E1.79 – 202x, Television, Film, Live Performance, and Event Electrical Guidelines for Canada**

*Task group: Art Wanuch (task group leader), Keith Woods, Simon Hunt, Mark Pollock, Rodger Dean, and Steve Vanciel (ESWG liaison)*

*From the draft July meeting minutes:*

*Keith Woods said he hasn't had time to review and prepare an update, he'll have one for the next meeting.*

*Any news or action?*

Ian Foulds reported. He said they are about 4 weeks away from having something ready, so they should have it ready for working group consideration in January.

Keith Woods agreed, saying there are only minor formatting edits to make, which he thought could be finished in about a week.

#### **6.9 BSR E1.80 – 202x, 19-pin connector pinout assignments**

*Task group: Hans Lau (leader), Steve Terry, Rodger Dean, Mike Webb, Eddie Kramer, Ian Foulds, Bob Luther, Doug Hook, James Davey, Dietmar Rottinghaus, and RJ Kenny.*

*Any news or action?*

Hans Lau asked for RJ Kenny to be appointed to the task group. Mitch Hefter made it so.

Hans reported they've had a meeting. Industry feels like this might be a fragile topic to address from a regulatory perspective. Steve Terry said we are currently able to use these connector types because there is an exception in NEC, and it would have a catastrophic effect on the industry if the exception were lost. We're not trying to write a new standard – we're trying to codify pinouts for informational purposes.

Hans said they have submitted public input to NEC asking for marking/labeling of cables. It is likely to be accepted, but that puts a little time pressure on this project's timeline.

Steve Terry clarified that the NEC proposal is to require "pinout types", which is how this should be referred. They've also asked for an informational note that refers people to ESTA standards for information.

Mitch Hefter said that Hans has created a table that will be distributed to the NEC people in January. Kudos to Jason Potterf for suggesting this technique for making the code change proposal.

Steve Terry reminded everyone that we're not creating new things – we're only providing information.

Mitch Hefter said that [USITT] RP1 also includes 37-pin connector, and it doesn't address voltage (it only addresses grounding).

Hans Lau said this is also being addressed in Britain, and there is also a published DIN standard. Our document should reference both of these standards. Steve Terry said it would be nice if we can achieve 100% alignment with both standards.

Steve Terry brought up NEC requirements for UL listings. NEC now requires UL listing of trunk cables and breakout assemblies, for special purpose. These 19-pin cables are not listed assemblies. Steve said he'd setup a meeting with UL engineers about the ways UL listing could be accomplished. They suggested that UL817, *Cord Sets and Power-Supply Cords* was the easiest to manipulate into something useful for 19-pin connectors.

Trunk cables are "hard usage" and "extra hard usage." E1.80 cable assemblies do not fall into this category. Looking forward, E1.80 could grow into the basis for a common configuration standard, if these assemblies might eventually be deemed to require a listing. Then, it would fall under the purview of UL817.

[TSM note: see *Summary of UL Discussion on Listing requirements for Special-Purpose Multicircuit Cable Systems covered by NEC 2023 edition section 520.68(D)*, included at the end of these minutes.

Bob Luther asked if there might already be standards. These assemblies derive from MIL Standards. Hans said he did not think so, because these connectors evolved from the original Socapex SL19 connector. Bob said he was certain these evolved from MIL Standards.

Steve Terry said there are no 14- or 18-conductor cables that fall into the category of hard- or extra-hard usage.

Steve Terry said he foresees asking NEC for an exception that allows mating of connectors that are from not-same manufacturers.

Dietmar Rottinghaus said he was part of the DIN committee. The DIN standard was written because there have been accidents with these connectors, and the industry is coming together at a global level to standardize. He said it would be great if we had something with connector tolerances in addition to the pinout assignments, because as new manufacturers try to re-engineer existing products, the tolerances get larger, thus creating a hazard.

Steve Terry agreed, this has to be an international effort.

## **7 New business**

Hans Lau said there is no standard in the Film industry for LED tape lights, or color coding of various voltages used for LED tape and purpose-built LED contraptions. Are there any existing standards anyone knows of, or would this be possible subjects for new projects.

Ian Foulds said this is becoming an important aspect of the industry in Canada, too.

## **8 Other business and announcements**

Bob Luther noted the passing of George Long, in August. He was a long-term member of this working group, who has made significant contributions to our industry.

### **8.1 Above & Beyond Awards**

Nominations can be made on the website at [http://tsp.esta.org/tsp/news/award\\_recipients.html](http://tsp.esta.org/tsp/news/award_recipients.html).

### **8.2 IES report**

### **8.3 NEC report**

Mitch Hefter reported. Over 4,400 Public Inputs were received for proposed changes to the 2023 edition for 2026. Several are related to multi-pin connectors as an outgrowth of the BSR E1.80 project. Panel Task Groups are being formed and will meet over the next couple of months in preparation for the January 2024 First Draft meetings, in Charleston, SC. Those meetings will overlap with the NAMM dates, which means that several EPWG members will be on the east coast, potentially affecting EPWG meeting attendance.

Steve Terry gave kudos to Hans Lau for introducing a new term “deployed” to the code. Portable equipment used to be “installed”, normally a term associated with permanent installations. The term “deployed” is better suited to portable cables (used for events, and temporary installations).

Jason Potterf said they see more CyberSecurity topics arising. He submitted a couple of Public Inputs to help address this in NPFA 70B. He said that CyberSec is all about maintenance, so his Public Inputs on this topic suggested taking it out of NFPA 70, and addressing it in NFPA 70B.

### **8.4 USITT report**

Mitch Hefter said the 2024 Conference is coming up in March, and will be held in Seattle, WA.

### **8.5 Event Safety WG – Electrical Task Group**

*Any news or action?*

Steve Vanciel said the latest draft revision of ES1.17 will be considered for another public review in tomorrow's ESWG meeting.

### **8.6 Incandescent lamp bans**

Jerry Gorrell said that 5 states have now banned incandescent lamps.

### **9 Schedule for future meetings**

*The meeting schedule may be found at <http://www.esta.org/ESTA/meetings.php>.*

*The Winter meetings will be held in conjunction with the NAMM Show 2024, in Anaheim, CA, during the week of 22 January 2024. The Spring 2024 meetings will be held in Seattle, WA, in conjunction with the USITT Conference during the week of 18 March 2024, and the Summer 2024 meetings will be co-located with NATEAC, in New York City, during the week of 08 July 2024. The Fall 2024 meetings will likely return to Westlake, TX.*

Richard Nix said that the NATEAC planning committee is actively seeking proposals for presentations. Interested parties should go to the ESTA home page, and click on the NATEAC banner icon, which will redirect them to a proposal submission form page.

### **10 Adjournment**

The agenda business being completed, with no further business brought forth, Mitch Hefter declared the meeting adjourned at 20:23.

Electrical Power Working Group Members as of 06 October 2023

Name	Representing	Status	Int cat
Kevin Amick	IATSE Local 479	P	G
Matthew Antonucci	Contract Services Administration Trust Fund	A	U
Robert Barbagallo	Solotech Inc.	O	DR
Alyxander Bear	Insomniac	O	DE
Justin Bennett	University of the Incarnate Word	P	U
Steve Brock	Guardian Entertainment Inc	O	DR
John (JA) Byerly	IATSE Local 479	O	G
Richard Cadena	Academy of Production Technology	O	G
James Davey	A.C.T. Lighting, Inc.	P	CP
Jeremy Day	Lumenpulse Group	O	MP
Rodger Dean	R. Dean Lighting Limited	P	DR
Jim Digby	Event Safety Alliance	O	U
James Eade	ABTT	O	G
Don Earl	Earl Girls, Inc.	P	DR
Nehad El-Sherif	Nehad El-Sherif	I	G
Trevor Forrest	Helvar Lighting Control	O	MP
Ian Foulds	Entertainment Electrical Safety Association	A	G
Todd Fouyer	Musson Theatrical	O	DR
Jerry Gorrell	Theatre Safety Programs	P	U
Mike Harwood	William F. White International	O	DR
Robert Haycock	Robert Haycock	I	U
Mitch Hefter	USITT	P	U
Nick Holmberg	TMB	P	MP
Doug Hook	I.A.T.S.E. Local 58	P	U
Simon Hunt	IATSE Local 891	A	U
Quinten James	QtoCue Lighting Design	O	U
John Valus Jr.	Lex TM3	O	MP
Richard (RJ) Kenny	Link USA, Inc.	P	MP
Edwin S. Kramer	I.A.T.S.E. Local 1	P	U
Charles (Chuck) Kurten	Underwriters Laboratories, Inc.	O	G
Hans Lau	I.A.T.S.E. Local 728	A	U
Michael Lay	Candela Controls, Inc	P	G



Electrical Power Working Group Members as of 06 October 2023

Name	Representing	Status	Int cat
Bob Luther	Lex TM3	P	MP
Charles McIntyre	I.A.T.S.E. Local 728	P	U
Ty Mellon	Tyron J Mellon, Jr.	O	G
Rick Montgomery	Motion Laboratories, Inc.	A	MP
Chris Moulton	Contract Services Administration Trust Fund	A	U
Robert Peterson	Shur-Rig LLC	O	G
Elizabeth E. (Lizz) Pittsley	Elizabeth Pittsley	P	U
Mark Pollock	Littelfuse, Inc.	P	MP
Jason Potterf	Cisco	P	MP
Dietmar Rottinghaus	Neutrik AG	P	MP
Alan M. Rowe	I.A.T.S.E. Local 728	A	U
Chris Ruble	Christopher Ruble	I	U
Wendy Russell	Electronic Theatre Controls, Inc	A	MP
Ford Sellers	Chauvet Lighting	O	MP
Michael Shaw	Motion Laboratories, Inc.	A	MP
Mike Skinner	Contract Services Administration Trust Fund	P	U
Jonny Starr	TMB	O	MP
Daniel Swalec	Daniel Swalec	I	U
Patrick Teich	Cirque du Soliel Entertainment Group	P	U
Steve Terry	Electronic Theatre Controls, Inc.	P	MP
Robert Timmerman	Signify	O	MP
Stephen Vanciel	Stephen Vanciel	I	U
Ken Wagner	Ken Wagner	O	U
Art Wanuch	Entertainment Electrical Safety Association	P	G
Colin Waters	TMB	O	DR
Mike Webb	Motion Laboratories, Inc.	P	MP
Keith S. Woods	IATSE Local 891	P	U
Jeong Sik Yoo	Ghost LX	O	DE