

ESTA Standards Watch

December 2023

Volume 27, Number 23

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An ESTA standard in public review

Eleven ESTA draft standards were in public review at http://estalink.us/pr, but the review periods on ten of them ended on December 11, leaving ONE document in public review now. It's a limited revision of **ANSI E1.21-2023**, **Temporary Structures Used for Technical Production of Outdoor Entertainment Events**, approved earlier this year. It references specific International Building Code clauses, but the clause numbers cited in E1.21 don't match the clause numbers in the current edition of the IBC. Only comments pertaining to the revisions noted in the draft document will be considered during this limited review. Read the public review explanation document posted with the draft E1.21 for additional details. Comments are due no later than Friday, 13 January 2024.

NATEAC 2024 requests session proposals

The North American Theatre Engineering and Architecture Conference (NATEAC) has put out a request for proposals for sessions for the July 2024 conference, which will be held in Brooklyn, New York. The theme of the 2024 conference is "Access." Access can be construed in technical and human ways. While it certainly encompasses ADA solutions and rope, it also can include DEI, choice of clients, information in the AI age, genderneutral restrooms, green space, and more. The deadline for submissions is Friday, December 15, 2023.

Session topics should be relevant and timely, with a high level of knowledge to match the caliber of the audience. Proprietary products and processes are not suitable subjects. Proposals may be submitted through the NATEAC RFP submissions page at esta.org/rfp.

NATEAC will host architects, engineers, theatre consultants, designers, and other industry professionals at the New York City College of Technology, July 13-15, 2024. In addition to sessions, there will be networking opportunities, including the New York Harbor Cruise and a benefit dinner for the Behind the Scenes Charity. To be updated about the latest NATEAC news, visit esta.org/nateac and sign up to the mailing list. Sponsorship opportunities will be forthcoming.

ESTA needs "Network with the Pros" volunteers

During The NAMM Show 2024, ESTA is hosting a session called "Network with the Pros," where professionals gather to meet with younger industry members and students to talk about their professional experiences and offer advice on building a career. Network with the Pros has traditionally been geared toward the music side of the business, but for The NAMM Show 2024, NAMM is making room for an entertainment technology-themed version. The session will take place on Friday, January 26th, from 2 pm to 3 pm.

ESTA is looking for approximately 50 volunteers. If you would like to participate in this session, please fill out <u>the brief interest form</u> no later than 15 December 2023, and we will try to let you know if we have a slot available for you before we break for the winter holidays.

WTO Technical Barrier to Trade notifications

The World Trade Organization has announced Technical Barrier to Trade filings that may be of interest to *Standards Watch* readers. If you have a problem with a TBT, you can protest through your representative to the World Trade Organization.

United States of America Notification USA/2074

Notification date: 4 December 2023

Agency responsible: California Energy Commission (CEC)

WTO TBT enquiry point: usatbtep@nist.gov

Products covered: Appliance efficiency; Quality; Environmental protection; Domestic electrical appliances in

general

Title: Proposed Amendments to the Appliance Efficiency Regulations, 22-AAER-04 (99 pages in English) **Description of content:** Proposed rule and announcement of public hearing - The California Energy

Commission (CEC) proposes to amend the California Code of Regulations (CCR), Title 20, Article 4, sections 1601-1609 after considering all comments, objections, and recommendations regarding the proposed action.

The proposed federal and administrative updates include:

- 1. Updates to align with current federal law
- 2. Updates to the data submittal requirements and processes
- 3. Removal of a redundant aspect of the marking requirement for commercial and industrial fans and blowers
- Updates and streamlining to CEC's product compliance review, enforcement, and administrative proceedings
- 5. Other administrative and non-substantive changes for clarity and consistency

To improve and enhance public access through teleconferencing options on the proposed regulations, a public hearing will be held remotely on 9 January 2024 10:00 a.m. (Pacific Time). Interested persons or their authorized representatives may present statements, arguments, or contentions relevant to the proposed regulations at the public hearing. The record for this hearing will be kept open until every person has had an opportunity to provide comment.

Objective and rationale: Consumer information, labelling; Protection of the environment; Quality requirements

Relevant documents: California Energy Commission (CEC) Docket Log accessible at https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-AAER-04

WTO Members and their stakeholders are asked to submit comments to the USA TBT Enquiry Point. Comments received by the USA TBT Enquiry Point from WTO Members and their stakeholders by 4pm

Eastern Time on 8 January 2024 will be shared with CEC.

Proposed date of adoption: To be determined Proposed date of entry into force: To be determined

Final date for comments: 8 January 2024

Text: https://members.wto.org/crnattachments/2023/TBT/USA/23_13946_00_e.pdf https://members.wto.org/crnattachments/2023/TBT/USA/23_13946_01_e.pdf

Eswatini Notificaton SWZ/14

Notification date: 1 December 2023

Agency responsible: Eswatini Standards Authority

WTO TBT enquiry point: info@swasa.co.sz; www.swasa.co.sz

Products covered: electrical machinery and equipment; electrical engineering in general **Title:** Draft SZNS 077: 2023 Eswatini Electricity Safety Standard (97 pages in English)

Description of content: This Draft national standard governs the minimum safety standards for the operating, maintenance, construction and installation of power systems in Eswatini. The purpose of this standard is threefold, namely, to ensure the safety of all persons, to safeguard apparatus and to ensure continuity of supply. This standard is an extension of, and must be read in conjunction with, the provisions of the The purpose of this standard is threefold, namely, to ensure the safety of all persons, to safeguard apparatus and to ensure continuity of supply(with particular emphasis on the Health and Safety Act made thereunder), and all other applicable laws, and does not supersede, overrule or negate any provisions contained in the Electricity Act, the Labour Act or such other laws.

Objective and rationale: The purpose of this standard is threefold, namely, to ensure the safety of all persons, to safeguard apparatus and to ensure continuity of supply. Protection of human health or safety **Relevant documents:**

- · Electricity Act of 2007
- Factories, Machinery and Construction Works Act 17 of 1972
- · Operational Safety and Health Act 9 of 2001
- Standards and Quality Act (10), 2003
- · Publication in which the notification is published when adopted; Eswatini Government Gazette

Proposed date of adoption: To be determined

Proposed date of entry into force: To be determined

Final date for comments: 30 January 2024

Text: http://www.swasa.co.sz

https://members.wto.org/crnattachments/2023/TBT/SWZ/23 13903 00 e.pdf

ANSI public review announcements

The following documents have been announced for public review by ANSI and may be of material interest to *Standards Watch* readers. If you have comments on them, please send your comments before the deadline to the person indicated and to ANSI's Board of Standards Review at psa@ansi.org.

Due 30 January 2024

BSR/IEEE 1937.11-202x, Standard for Technical Requirements of Polar Coordinate Photogrammetry Based on Unmanned Aircraft Systems (new standard)

The standard specifies technical requirements for polar coordinate photogrammetry based on Unmanned Aircraft System (UAS), including photographic image acquisition and image processing procedures as well as digital model storage.

Single copy price: \$5.00

Order from: https://www.techstreet.com/

Send comments to: Karen Evangelista < k.evangelista@ieee.org>

BSR/IEEE 2845-202x, Trial Use Standard for Testing and Evaluating the Dielectric Performance of Celebratory Balloons in Contact with Overhead Power Distribution Lines Rated up to 38 kV System Voltage (new standard)

This standard is applicable to celebratory balloons that are comparable in size and shape to what are commonly referred to as foil balloons, which are available in retail stores and are filled with helium or a gas that is lighterthan-air. The test procedures evaluate the dielectric performance of celebratory balloons in contact with simulated energized overhead distribution power lines with the intent of minimizing balloon caused power system outages (or electrical faults). The scope is limited to distribution system voltages of 38 kV or less and only single balloons. The effects of having any string or ribbon attachments to the balloon(s), moisture, and contaminants are not investigated under this procedure.

Single copy price: \$8.00

Order from: https://www.techstreet.com/ieee/searches/38926398 Send comments to: Suzanne Merten <s.merten@ieee.org>

BSR/IEEE 2851-202x, Standard for Functional Safety Data Format for Interoperability within the Dependability Lifecycle (new standard)

This standard defines a dependability lifecycle of products with focus on interoperable activities related to functional safety and its interactions with reliability, security, operational safety, and time -determinism. The standard also describes methods, description languages, data models, and databases that have been identified as necessary or critical, to enable the exchange/interoperability of data across all steps of the lifecycle encompassing activities executed at IP, SoC, system and item levels, in a technology independent way across application domains such as automotive, industrial, medical and avionics safety critical systems.

Single copy price: \$1.00

Order from: https://www.techstreet.com/searches/38926001 Send comments to: Karen Evangelista https://www.techstreet.com/searches/38926001 Send comments to: Karen Evangelista https://www.techstreet.com/searches/38926001

BSR/UL 3300-202x, Standard for Safety for Service, Communication, Information, Education and Entertainment Robots - SCIEE Robots (new standard)

This document establishes the safety requirements for Service, Communication, Information, Education and Entertainment (SCIEE) robots. These requirements supplement the safety requirements for the intended, nonrobotic function as described in the relevant identified standards UL 62368-1, Audio/Video, Information and Communication Technology Equipment; or UL 60335-1, Household and Similar Electrical Appliances, including the applicable Part 2. Mobility and/or uncontained manipulation introduce potential for hazard due to the speed and mass of the robot, use environment and other considerations described herein. Where applicable, these requirements cover robotics intended for use in indoor and outdoor locations. The scope includes SCIEE robots intended for use by, or in close proximity to, the general consumer. These requirements do not apply to:

- On- or off-road transport of persons;
- Use in industrial environments with trained operators, including training simulators for industrial applications;
- Use in hazardous locations:
- Use as personnel protective equipment;
- Agricultural use;
- Use in food preparation;
- Use to treat, alleviate instability, or move individuals in hospitals, care facilities or in the home;
- Use as medical devices or in medical environments;
- Robotic functions that have no safety dependencies, i.e., non-safety-related functions, e.g., accuracy of Al query responses, efficacy of a security alarm.

Single copy price: Free!

Order from: https://www.shopulstandards.com/

Send comments to: https://csds.ul.com/ProposalAvailable

BSI public review announcements

The following draft British Standards documents have been announced for public review by BSI and may be of material interest to *Standards Watch* readers. The list includes National British Standards in development and National Adoptions of existing standards. Submit comments online, before the comment deadline, using BSI's Standards Development Portal. Registration is free of charge at https://standardsdevelopment.bsigroup.com/.

Due 12 December 2023

BS 7909:2023+A1:2024 Temporary electrical systems for entertainment and related purposes. Code of practice

This British Standard gives recommendations for the management, design, setting up and operation of temporary electrical systems using low voltage electricity, for the entertainment and similar or related industries. Mobile and transportable units with electrical installations that are used in these industries are also covered. This British Standard gives recommendations for the provision of a safe and suitable temporary electrical system for an event and the duties and work to implement this.

Due 27 December 2023

BS EN IEC 80000-16 Ed.1.0 Quantities and units. - Part 16: Printing and writing rules

This part of IEC 80000 establishes rules for printing and writing for text where quantities, units, and their letter symbols and mathematical symbols are used. (It tells you, for example, that "L = 3 m" is correct but "L = 3m" is not, that a thing might weigh "300 kg" but not "300KG.")

Due 22 January 2024

BS IEC 61156-14 ED1 Multicore and symmetrical pair/ quad cables for digital communications. Part 14: Symmetrical single pair cables with transmission characteristics up to 20 MHz - Work area wiring - Sectional specification

This part of IEC 61156 describes cables for work area wiring intended to be used for transmission of 10 Mb/s over a single twisted pair in channels for distances of up to 1 km. The transmission characteristics of these cables are specified up to a frequency of 20 MHz and at a temperature of 20 °C. Depending on the MICE environment and the installation conditions, either unscreened or screened cables can be used. Furthermore, to consider different maximum transmission lengths, two sets of requirements are specified. The cable type A-1000W does not have attenuation de-rating compared to the A-1000 type according to IEC 61156-13 and is a design supporting up to 1 km channel length. The cable type A-400W has attenuation de-rating compared to the A-400 type according to IEC 61156-13. A blank detail specification can be found in Annex A.

CSA public review announcements

The CSA Group has announced proposals that might be of interest to *Standards Watch* readers. To participate in CSA public reviews, please visit http://publicreview.csa.ca/.

Due 24 December 2023

CSA ISO 56002 - Innovation management — Innovation management system — Guidance (new standard) This document provides guidance for the establishment, implementation, maintenance, and continual improvement of an innovation management system for use in all established organizations. It is applicable to:

- a) organizations seeking sustained success by developing and demonstrating their ability to effectively manage innovation activities to achieve the intended outcomes;
- b) users, customers, and other interested parties, seeking confidence in the innovation capabilities of an organization;
- c) organizations and interested parties seeking to improve communication through a common understanding of what constitutes an innovation management system;
- d) providers of training in, assessment of, or consultancy for, innovation management and innovation management systems;
- e) policy makers, aiming for higher effectiveness of support programs targeting the innovation capabilities and competitiveness of organizations and the development of society.

CSA R56005, Innovation management — Tools and methods for intellectual property management — Guidance (new standard)

Efficient management of IP is key to support the process of innovation, is essential for organizations' growth and protection, and is their engine for competitiveness. This document proposes guidelines for supporting the role of IP within innovation management. It aims to address the following issues concerning IP management at strategic and operational levels:

· Creating an IP strategy to support innovation in an organization;

- Establishing systematic IP management within the innovation processes;
- Applying consistent IP tools and methods in support of efficient IP management. This document can be used for any type of innovation activities and initiatives.

New ANS projects

ANSI has announced the following new projects that might materially affect *Standards Watch* readers—or at least be interesting. Contact the developer if you (a) want to be involved in a project, (b) object to a project and wish it to be abandoned, or (c) if you would like to point out that a scope is covered by an existing standard, thereby possibly making a project redundant or conflicting.

BSR/AWWA G415-202x, Diversity, Equity, and Inclusion Practices (new standard)

This standard describes the essential requirements of effective diversity, equity, and inclusion (DEI) practices in the water, wastewater, reclaimed water, and stormwater utility sector. It includes practices for applying DEI concepts to, and improving DEI in, developing a DEI strategy, recruitment, culture, workforce, leadership, accountability, workspace design, operations, system reliability, affordability, and community relations and engagement. [This is for the water and wastewater industry, but there's a good chance that the DEI practices could be applied elsewhere.]

Contact Paul Olson onload

BSR/INCITS/ISO/IEC 1539-1:2023 [202x], Programming Languages - Fortran - Part 1: Base Language (identical national adoption of ISO/IEC 1539-1:2023 and revision of INCITS/ISO/IEC 1539-1:2018 [2019]) Specifies the form and establishes the interpretation of programs expressed in the base Fortran language. The purpose of this document is to promote portability, reliability, maintainability, and efficient execution of Fortran programs for use on a variety of computing systems. This document specifies the forms that a program written in the Fortran language can take, the rules for interpreting the meaning of a program and its data, the form of the input data to be processed by such a program, and the form of the output data resulting from the use of such a program.

Contact Deborah Spittle < comments@standards.incits.org >

Final actions on American National Standards

The documents listed below may be of interest to *Standards Watch* readers and have been approved by the ANSI Board of Standards Review or by an ANSI-Audited Designator on the date noted. "Final actions" means "done for now." No standard is ever finished.

ANSI/HSI 2000-2023, Performance Standard: Healthcare Germicidal Light Whole-Room Surface Disinfection (new standard), 4 December 2023

ANSI/IAPMO USHGC 1-2024, Uniform Solar, Hydronics & Geothermal Code (revision of ANSI/IAPMO USHGC 1-2021), 30 November 2023

ANSI/IAPMO USPSHTC 1-2024, Uniform Swimming Pool, Spa & Hot Tub Code (revision of ANSI/IAPMO USPSHTC 1-2021), 30 November 2023

ANSI/UL 1322-2023a, Standard for Fabricated Scaffold Planks and Stages (revision of ANSI/UL 1322-2023), 27 November 2023

Draft IEC & ISO documents

This section lists documents reported in ANSI's *Standards Action* that the IEC or the ISO or both are considering for approval and that may be of interest to *Standards Watch readers*. Anyone interested in reviewing and commenting should order a copy from their national representative and submit their comments through them. Comments from US citizens on ISO documents must be sent to ANSI's ISO Team (isot@ansi.org), and must be

submitted electronically in the approved ISO template as a Word document. US comments on IEC documents should be sent to Tony Zertuche, General Secretary, USNC/IEC, at ANSI's New York offices (tzertuche@ansi.org). ISO and IEC Drafts can be made available by contacting ANSI's Customer Service department, sales@ansi.org.

65C/1281(F)/FDIS, IEC 61784-5-19 ED2: Industrial networks -Profiles - Part 5-19: Installation of fieldbuses – Installation profiles for CPF 19, 22 December 2023

65C/1280(F)/FDIS, IEC 61784-5-8 ED3: Industrial networks -Profiles - Part 5-8: Installation of fieldbuses – Installation profiles for CPF 8, 22 December 2023

ISO/DIS 37003, Fraud Control Management Systems – Guidance for organizations managing the risk of fraud , 8 February 2024, \$112.00

ISO/DIS 16811, Non-destructive testing - Ultrasonic testing -Sensitivity and range setting, 11 February 2024, \$112.00

ISO/DIS 16810, Non-destructive testing - Ultrasonic testing -General principles, 16 February 2024, \$58.00

ISO/DIS 16823, Non-destructive testing - Ultrasonic testing -Through-transmission technique, 16 February 2024, \$58.00

34A/2377/CDV, IEC 63356-2 ED2: LED light source characteristics - Part 2: Design parameters and values, 23 February 2024

46C/1280/CD, IEC 61156-14: Multicore and symmetrical pair/quad cables for digital communications - Part 14: Symmetrical single pair cables with transmission characteristics up to 20 MHz - Work area wiring - Sectional specification, 23 February 2024

56/2017/CDV, IEC 62198 ED3: Managing risk in projects -Application guidelines, 23 February 2024

65C/1276/CDV, IEC 61784-3-19 ED1: Industrial communication networks - Profiles - Part 3-19: Functional safety fieldbuses -Additional specifications for CPF 19, 23 February 2024

100/4085/NP, PNW 100-4085 ED1: User's Quality of Experience (QoE) on Multimedia Conferencing Services - Part 2: Requirements, 23 February 2024

100/4086/NP, PNW 100-4086 ED1: User's Quality of Experience (QoE) on Multimedia Conferencing Services - Part 3: Measurement methods, 23 February 2024

Recently published ISO & IEC documents

Listed here are documents recently approved by the ISO or IEC and listed in ANSI's *Standards Action* that may be of use or interest to *Standards Watch* readers. Prices shown are for purchases from the ANSI Webstore.

ISO/IEC TR 11801-9908:2020, Information technology – Generic cabling systems for customer premises - Part 9908: Guidance for the support of higher speed applications over optical fibre channels, \$116.00

ISO/IEC TR 11801-9910:2020, Information technology – Generic cabling for customer premises - Part 9910: Specifications for modular plug terminated link cabling, \$77.00

ISO/IEC 25019:2023, Systems and software engineering -Systems and software Quality Requirements and Evaluation (SQuaRE) - Quality-in-use model, \$183.00

ISO/IEC 27402:2023, Cybersecurity - IoT security and privacy -Device baseline requirements, \$116.00

IEC 61158-3-2 Ed. 3.0 b:2023, Industrial communication networks - Fieldbus specifications - Part 3-2: Data-link layer service definition - Type 2 elements, \$329.00

IEC 61158-3-4 Ed. 4.0 b:2023, Industrial communication networks - Fieldbus specifications - Part 3-4: Data-link layer service definition - Type 4 elements, \$234.00

IEC 61158-4-2 Ed. 5.0 b:2023, Industrial communication networks - Fieldbus specifications - Part 4-2: Data-link layer protocol specification - Type 2 elements, \$512.00

IEC 61158-4-4 Ed. 4.0 b:2023, Industrial communication networks - Fieldbus specifications - Part 4-4: Data-link layer protocol specification - Type 4 elements, \$329.00

IEC 61158-5-2 Ed. 5.0 b:2023, Industrial communication networks - Fieldbus specifications - Part 5-2: Application layer service definition - Type 2 elements, \$512.00

IEC 61158-5-4 Ed. 4.0 b:2023, Industrial communication networks - Fieldbus specifications - Part 5-4: Application layer service definition - Type 4 elements, \$417.00

IEC 61158-6-2 Ed. 5.0 b:2023, Industrial communication networks - Fieldbus specifications - Part 6-2: Application layer protocol specification - Type 2 elements, \$512.00

IEC 61158-6-4 Ed. 4.0 b:2023, Industrial communication networks - Fieldbus specifications - Part 6-4: Application layer protocol specification - Type 4 elements, \$329.00

IEC 61158-3-24 Ed. 2.0 b:2023, Industrial communication networks - Fieldbus specifications - Part 3-24: Data-link layer service definition - Type 24 elements, \$278.00

IEC 61158-4-21 Ed. 3.0 b:2023, Industrial communication networks - Fieldbus specifications - Part 4-21: Data-link layer protocol specification - Type 21 elements, \$455.00

IEC 61158-4-24 Ed. 3.0 b:2023, Industrial communication networks - Fieldbus specifications - Part 4-24: Data-link layer protocol specification - Type 24 elements, \$481.00

IEC 61158-5-10 Ed. 5.0 b:2023, Industrial communication networks - Fieldbus specifications - Part 5-10: Application layer service definition - Type 10 elements, \$512.00

IEC 61158-5-23 Ed. 3.0 b:2023, Industrial communication networks - Fieldbus specifications - Part 5-23: Application layer service definition - Type 23 elements, \$455.00

IEC 61158-5-24 Ed. 2.0 b:2023, Industrial communication networks - Fieldbus specifications - Part 5-24: Application layer service definition - Type 24 elements, \$455.00

IEC 61158-5-26 Ed. 2.0 b:2023, Industrial communication networks - Fieldbus specifications - Part 5-26: Application layer service definition - Type 26 elements, \$455.00

IEC 61158-6-23 Ed. 3.0 b:2023, Industrial communication networks - Fieldbus specifications - Part 6-23: Application layer protocol specification - Type 23 elements, \$512.00

IEC 61158-6-24 Ed. 2.0 b:2023, Industrial communication networks - Fieldbus specifications - Part 6-24: Application layer protocol specification - Type 24 elements, \$481.00

IEC 61158-6-26 Ed. 2.0 b:2023, Industrial communication networks - Fieldbus specifications - Part 6-26: Application layer protocol specification - Type 26 elements, \$512.00

IEC/TR 63475 Ed. 1.0 en:2023, Overview of Universal Archival Disk Format (UADF), \$95.00

IEC/TR 63478-1 Ed. 1.0 en:2023, User's Quality of Experience on Multimedia Conferencing Services - Part 1: General, \$145.00

ESTA Standards Watch

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If you would like to receive an email notice each time a new edition of *Standards Watch* is published, send a request to standards@esta.org. Find back issues at http://estalink.us/nn7a1.

TSP meetings

The next set of TSP working group meetings will be at the Wyndham Anaheim, scheduled to coincide with The NAMM Show 2024, to be held January 25–28, 2024 at the Anaheim Convention Center. The meeting schedule, shown below, is now posted at https://esta.org/ESTA/meetings.php. Note that all meeting times are shown in Pacific Standard Time (UTC-8:00).

Wednesday, 24 January

16:00 – 20:00 Photometrics Working Group

Thursday, 25 January

10:00 – 13:00 Control Protocols Working Group

14:00 - 16:00 Stage Machinery Working Group

17:00 – 19:00 Floors Working Group

18:00 – 20:00 Behind the Scenes Happy Hour (at the Marriott Anaheim)

Friday, 26 January

10:00 – 12:00 Fog & Smoke Working Group

19:00 – 22:00 Electrical Power Working Group

Saturday, 27 January

10:00 - 13:00 Weapons Safety Working Group

14:00 - 17:00 Event Safety Working Group

18:00 – 22:00 Rigging Working Group

Sunday, 28 January

09:00 - 13:00: Technical Standards Council

Investors in Innovation, supporters of ESTA's Technical Standards Program

This lists the donors who have made contributions in the last 12 months.

VISIONARY LEADERS (\$50,000 & up)

ETC

VISIONARY (\$10,000 & up; >100 employees/members)

Cisco

Columbus McKinnon Entertainment Technology

VISIONARY (\$5,000 & up; 20–100 employees/members)

Altman Lighting, Inc.

McLaren Engineering Group

Rose Brand

Stage Rigging

VISIONARY (\$500 & up; <20 employees/members)

About the Stage B-Hive Industries, Inc.

Scott Blair
Boston Illumination Group
Candela Controls, Inc.

Clark Reder Engineering

Tracey Cosgrove & Mark McKinney

Doug Fleenor Design

Down Stage Right Industries Ltd.

EGI Event Production Services Entertainment Project Services

Neil Huff

Interactive Technologies

iStudio Projects Jules Lauve

Brian Lawlor

Disney Parks Live Entertainment

Theatre Projects

Theatre Safety Programs

TMB

Michael Lay

Link

John T. McGraw Mike Garl Consulting Mike Wood Consulting

Lizz Pitsley Reed Rigging

Reliable Design Services

Alan Rowe

Sapsis Rigging Inc. SBS Lighting

Steve A. Walker Associates

Dana Taylor Steve Terry Vertigo

WNP Services

INVESTOR (\$3,000–\$9,999; >100 employees/members)

Actors' Equity Association

Golden Sea Professional Lighting Provider

IATSE Local 728

IATSE Local 891

Lex NAMM

Texas Scenic Company

INVESTOR (\$1,500–\$4,999; 20–100 employees/members)

American Society of Theatre Consultants

Area Four Industries

BMI Supply

City Theatrical Inc.

H&H Specialties, Inc.

InterAmerica Stage, Inc. Lvcian Stage Lighting

Niscon Inc.

Tomcat Staging, Lighting and Support Systems

INVESTOR (\$200–\$499; <20 employees/members)

Baxter Controls, Inc.

ChamSix

Concept Smoke Systems Ltd. Bruce William Darden

lan Foulds Paat Grenfell Liberal Logic, Inc.

Luminator Technology Group

Reid Neslage Ondelight

Jessica Sanders Sehr Gute GmbH David Thomas Techni-Lux Tracy Underhill

Ralph Weber

SUPPORTER (\$50 - \$2,999; >100 employees/members)

Harlequin Floors

SUPPORTER (\$50 - \$1,499; 20–100 employees/members)

High Output Syrac

InCord

iWeiss Oasis Stage Werks

Stagemaker

SUPPORTER (\$50 - \$199; <20 employees/members)

Chip Scott Lighting Design

DMX Pro Sales Matthew Douglas III

Beverly and Tom Inglesby

Inventions Guité KASUGA

Lighting Elements Inc.

Bill McCord Motion FX Syracuse Scenery and Stage Lighting Co., Inc.

Vincent Lighting Systems

Wuhan Zhongtian Jiaye Mechanical & Electrical Eng.

Co. Zeraus

Northern Lights Electronic Design

PragmaLab

Shanxi Tian Gong Sheng Optoelectronic Equipment

Technology Co.

Sigma Net John Tringas Stephen Vanciel Patrick Wallace Mitchell Weisbrod

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