

ESTA Standards Watch

July 2017 Volume 21, Number 13

Table of Contents	
ESTA Plugfest V14.0 Round-Tables Available Via WebEx!	_
Online Event Safety Training Now Available	2
Online Event Safety Training Now Available	2
WTO Technical Barrier to Trade Notification	3
Korea, Republic of Notification KOR/719	:
ANSI Public Review Announcements	ļ
Due 30 July 2017	Ę
Due 6 August 2017	ŗ
Due 14 August 2017	
Due 21 August 2017	6
Due 29 August 2017	8
CSA Public Review Announcements.	8
Due 8 September 2017	8
Due 16 August 2017	8
New ANS Projects	8
Final Actions on American National Standards1	2
Draft IEC & ISO Standards1	
Recently Published IEC & ISO Documents	
TSP Meeting Schedule1	
TSP Donors Who Have Made Long-Term, Multi-Year Pledges	(
Investors in Innovation, supporters of ESTA's Technical Standards Program	

ESTA Plugfest V14.0 Round-Tables Available Via WebEx!

The ESTA Control Protocols Plugfest organizers announced that two live, informal round-table discussions, taking place in conjunction with the ESTA Control Protocols Plugfest in July at the D/FW Marriott Solana in Westlake, Texas, will be made available to the general public via a free WebEx video conference.

- "Regarding Slot Info" will be broadcast on Sunday, July 23 from 7:00 p.m. to 8:00 p.m., CDT.
- "Common DMX512/RDM Myths" will be broadcast on Monday, July 24 from 7:00 p.m. to 8:00 p.m., CDT.

Subject matter experts from ESTA's Control Protocols Working Group will share their knowledge on these topics, and attendees will have the opportunity to ask questions and obtain answers from the CPWG members that authored the standards. This is an extraordinary opportunity to take advantage of the knowledge and experience of the CPWG, one of the Technical Standards Program's largest working groups.

Registration for either round-table may be made by sending an email to plugfest@esta.org. Registration is limited. Instructions for logging into WebEx will be emailed to all pre-registered attendees a few days before the live broadcast. Qualified attendees may also receive 0.5 ETCP renewal credit for each session hour.

More information about the ESTA Plugfest is available at www.estalink.us/plugfest. To contact the event's organizers please email plugfest@esta.org. To test your personal computer and internet link ahead of the broadcast, please go to: https://www.webex.com/test-meeting.html.

Online Event Safety Training Now Available

As a product of their commitment to enhancing safety competencies for live event professionals, the nonprofit Event Safety Alliance has created Event Safety Access Training (ESAT). ESAT is an online entry-level safety awareness training program and competency credential created specifically for those working in a live event environment. By providing standardized core safety training, ESAT aims to improve the way our industry does business and demonstrate an individual's or employer's commitment to safe work practices.

ESAT is an online alternative to in-person safety training that covers material that you and those in your legal duty of care need to know. Event Safety Access Training is designed to:

- Heighten individual awareness that safety is a priority and collaborative endeavor;
- · Begin the cultural change in the way event professionals currently regard safety;
- · Instill important concepts for individuals to consider while on the job;
- Provide a verifiable means for demonstrating safety competency;
- Empower individuals with the knowledge that safety is in everyone's interest and within everyone's personal responsibility; and
- Educate individuals to successfully address safety concerns in the challenging circumstances presented by live event productions.

To learn more and register for this training, visit: https://eventsafetyalliance.org/event-safety-access-training-online/.

ANSI Seeks Comments on New ISO Activity: Assessment of Green Financial Projects

The International Organization for Standardization (ISO) has circulated a proposal for a new field of activity for a new ISO standard, Green Finance: Assessment of Green Financial Projects. As the U.S. member body to ISO, the American National Standards Institute (ANSI) invites all relevant and interested stakeholders to submit comments on the proposal by the end of the business day on Friday 4 August 2017.

The proposal, submitted by the Standardization Administration of the People's Republic China (SAC), the ISO member from China, describes how green finance is a kind of financing of investments that provide benefits in the broader context of reduction in air, water and land pollution, reductions in greenhouse gas emissions, and improved energy efficiency while utilizing natural resources and their co-benefits. Green finance also has the potential to facilitate the growth of high-potential green industries, promote technological innovation, and create business opportunities for the financial industry.

While the green finance market has seen recent rapid growth—the global value was close to 90 billion USD in 2016—the development of finance faces general challenges including:

- 1. There is no universally accepted definition of green financial activities at an international, country or market level.
- 2. There are no common guidelines for assessing green financial projects before investment decisions.

All interested stakeholders are invited to review the proposal (available at http://estalink.us/dzfkw), which includes a listing of relevant existing documents at the international, regional, and national levels, and stakeholder categories that may benefit from the proposal. Please submit comments to Steve Cornish, ANSI senior director of international policy (scornish@ansi.org), by close of business on Friday, 4 August 2017. Based

on the input received, the ANSI ISO Council (AIC) will then be asked to approve an ANSI position and comments to submit to ISO before its 12 September 2017 deadline for voting on this proposal.

WTO Technical Barrier to Trade Notification

The U.S. Department of Commerce's service, Notify U.S., recently has announced WTO Technical Barrier to Trade notices that may be of interest to *Standards Watch* readers. If you have a problem with these notices, you can protest through your representative to the WTO. See "Guidance for Comment Submissions by U.S. Industry on TBT Notifications" at http://tsapps.nist.gov/notifyus/data/guidance/guidance.cfm or http://ec.europa.eu/enterprise/tbt/ for advice on filing objections.

Korea, Republic of Notification KOR/719

Date issued: 20 June 2017

Agency responsible: Ministry of Environment

National inquiry point: Korean Agency for Technology and Standards (KATS), Ministry of Commerce, Industry

and Energy (MOCIE) (KATS/MOCIE)

Products covered: Non-phase-in substance, existing substance subject to registration, substance subject to authorization, restricted and banned substance

Title: Revised version of the Enforcement Rules of the Act on Registration and Evaluation, etc. of Chemical Substances (22 pages, in Korean) and Revised version of the Enforcement Decree of the Act on Registration and Evaluation, etc. of Chemical Substances (15 pages, in Korean)

Description of content:

Enforcement Rules of the Act on Registration and Evaluation, etc. of Chemical Substances

- 1. Extended notice period for registration and registration update (Article 6(1)2, Article 9(3)2 as amended) Currently, the number of registered new substances in small volume (less than one ton) amounts to around 10 per day and 2,000 substances per year. However, the regulatory authorities only have three days to screen each application for updating registration information, which results in technical difficulties and concerns over insufficient review. Under the draft amendment, the regulatory authorities extend the notice period for registration and registration update up to 10 days (maximum 20 days) so as to ensure enough review time and prudent information management.
- 2. Abrogated provision on submission of written contract with testing institute when submitting a test plan (Article 14(2)2 is removed) Submitted test plan includes specific test methods, timeline and the date when relevant test data will be submitted. Therefore, the draft amendment does not ask a written contract that is concluded with testing institute when submitting a test plan.
- 3. Enhanced process for test plan review and for informing the result (Article 15(1) & Article 15(3) as amended)
 - 1) NIER should review test plans within the notice period of registration.
 - 2) When the head of NIER decides that a test plan has nothing to modify or complement in accordance with Article 15(2), potential registrants submit testing data as prescribed in the test plan.
- 4. Joint submission of registration dossier, including risk data (Article 16(2) as amended) Even though not all members of consultative group reach an agreement, some members who agree is allowed to submit risk data or safe-use guidance document in a joint manner.
- 5. Enhanced method and procedure for joint submission of registration dossier (Article 17(1) as amended, Article 17(3) as new) When lead registrant is not appointed or when members of consultative group are hard to reach an agreement for joint submission of existing substance, joint submission of registration dossier is delayed. In this case, the Minister of Environment may recommend an appropriate representative or arrangement for the registration.
- 6. Improved procedure of hazard review (Article 23(1) as amended) Of those substances registered, the regulatory authorities perform screening on their hazard and risk by using the registered information such as intended use, classification and labeling, quantity to be manufactured or imported. Then, the regulatory authorities may carry out hazard review and take necessary measures on the substances according to the priority of them when they are suspected to have higher hazard or risk.
- 7. Expanded scope of those who should follow an order of withdrawal, etc. & Deadline for submitting written plan and result of the order (Article 48 as amended) The draft amendment expands the scope of those should follow an order of products withdrawal from the market: from producer and importer to business entity who manufactures the products by means of original equipment manufacturing or original development

manufacturing, main contractor or subcontractor, and seller. In this case, the scope of seller is limited to superstore (e.g. department store, large retailer and so forth) in accordance with Article 2(3) of the Distribution Industry Development Act. This is to enhance consumer convenience and make sure that withdrawal measure is implemented in a swift manner.

- 8. Updated instruction for preparing application of registration exemption confirmation (Appendix 5 as revised)
 - 1) For chemical substance used for R&D, business entity should submit a result of follow-up measure within three months after the R&D period ends, if there is remaining quantity of the substance or R&D achievement.
 - 2) When changing a period taken for R&D, intended quantity manufactured or imported, or researcher or developer, the business entity should request to update the change to the Korea Environment Corporation with evidence documents.

Enforcement Decree of the Act on Registration and Evaluation, etc. of Chemical Substances

- 1. Expanded scope of chemical substances subject to registration exemption (Article 11(2)2 as amended) Currently, polymer that has number average molecular weight of less than 10,000 should be registered if it contains more than 2% of monomer that is a new substance. Under this draft amendment, polymer can receive confirmation of registration exemption if the polymer contains new substance that its information such as hazard data was already registered as manufactured or imported over one ton per year and went through hazard review, except the cases when the new substance has risk concerns (e.g. designation as hazardous substance).
- 2. Expanded waiving of data requirements when submitting substance registration dossier (Article 13(6)2 as new) When hazard of chemical substance are known by referring to hazard data that foreign governments or international organizations already made available to the public, the draft amendment allows waiving of the relevant data requirements in registration dossier.
- 3. Expanded scope of individual data submission when submitting registration dossier of existing substances subject to registration (Article 14(3) as new) The draft amendment states that individual submission is allowed in certain cases where the Minister of Environment specifies and announces. For example, when potential registrant who wants individual submission agrees to share its individually-submitted data with others for free, the potential registrant is allowed for individual submission.
- 4. Designation & Public Notice of substance subject to authorization, restricted or banned substance (Article 19(3) and Article 20(4) as new) Of those substances that foreign government or international organization already regulates or decides to regulate, substances having higher risk concerns and sufficient data may be designated as substance subject to authorization, restricted or banned substance without socioeconomic analysis or risk assessment in accordance with the draft amendment.
- 5. Additional and updated works that the Minister of Environment assigns or entrusts to the head of the National Institute of Environmental Research, the heads of local environment offices, the Korea Environment Corporation and the Korea Chemicals Management Association (Article 31(1)7(2), Article 31(4)1(2), and Article 31(4)2(2) as new, etc.)
 - 1) Head of the National Institute of Environmental Research carries out works related to designation and Public Notice of toxic substances.
 - 2) Heads of local environment offices receive applications for registration exemption confirmation and, if necessary, perform an inspection on relevant place of business.
 - 3) The Korea Environment Corporation conducts works related to receiving notifications for informing OR appointment or dismissal, and receiving requests on data protection, which was entrusted to the Korea Chemicals Management Association before.

Objective and rationale: To encourage registration of chemical substances and protect public health from any harms caused by chemical substances of risk concerns.

Relevant documents: . MoE Public Notice No. 2017-467; MoE Public Notice No. 2017-466

Proposed date of adoption: 30 September 2017

Proposed date of entry into force: 30 September 2017

Final date for comments: 19 August 2017

Full text: https://tsapps.nist.gov/notifyus/docs/wto_country/KOR/full_text/pdf/KOR719[1](korean).pdf and https://tsapps.nist.gov/notifyus/docs/wto_country/KOR/full_text/pdf/KOR719[2](korean).pdf

ANSI Public Review Announcements

The following documents have been announced for public review by ANSI. 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 July 2017

BSR/UL 62841-3-1-201x, Standard for Safety for Electric Motor-Operated Hand-Held Tools, Transportable Tools and Lawn and Garden Machinery - Safety - Part 3-1: Particular Requirements for Transportable Table Saws (identical national adoption of IEC 62841-3-1)

(1) Proposed revision to Clause 23 to align with changes to IEC 62841-3-1 in IEC Corrigendum 1 of IEC 62841-3-1.

Request proposed revision changes from or send comments to Beth Northcott at Elizabeth.Northcott@ul.com.

BSR/UL 248-12-201x, Standard for Safety for Low-Voltage Fuses - Part 12: Class R Fuses (revision of ANSI/UL 248-12-2011 (R2015))

(1) Paragraph 5.3 figure reference; (2) Value of prospective short circuit current in Table A. Request proposed revision changes from or send comments to Mitchell Goldat Mitchell.Gold@ul.com.

BSR/UL 1322-201x, Standard for Safety for Fabricated Scaffold Planks and Stages (revision of ANSI/UL 1322-2010 (R2015))

Document dated 6-30-2017 recirculates changes to original proposal dated 12-23-2016.

Request proposed revision changes from or send comments to Paul Lloret at Paul.E.Lloret@ul.com.

BSR/UL 8750-201X, Standard for Safety for Light Emitting Diode (LED) Equipment for Use in Lighting Products (revision of ANSI/UL 8750-2016)

The following topics for the Standard for Light Emitting Diode (LED) Equipment for Use in Lighting Products, UL 8750, are being recirculated: (5) Revise requirements for electrical spacings in Section 7.8; (10) Add Supplement SG - Designation of Temperature Value at the Temperature Measurement Point Tc.

Request proposed revision changes from or send comments to Heather Sakellariou at Heather.Sakellariou@ul.com.

Due 6 August 2017

BSR/UL 2748-201x, Standard for Safety for Arcing Fault Quenching Equipment (new standard)

This is a revised version of a proposal to publish a First Edition of the Standard for Arcing Fault Quenching Equipment, UL 2748, as an American National Standard. The original version of the proposal was published on March 17, 2017.

Request proposed revision changes from or send comments to Derrick Martin at Derrick.L.Martin@ul.com.

Due 14 August 2017

BSR/AWS C4.7/C4.7M-201x, Recommended Practices for Oxyfuel Gas Welding of Steel (new standard)

These recommended practices for oxyacetylene welding include the latest procedures to be used in conjunction with oxyacetylene equipment and the latest safety recommendations. Complete lists of equipment are available from individual manufacturers.

Single copy price: \$48.00

Order from Jennifer Rosario at jrosario@aws.org. Send comments to adavis@aws.org.

BSR/CTA 931-C-2007 (S201x), Remote Control Command Pass-Through Standard for Home Networking (stabilized maintenance of ANSI/CTA 931-C -2007 (R2012))

This specification defines a standardized method for communication of certain basic operational functions between devices in a home network.

Single copy price: \$85.00

Order from or send comments to Veronica Lancaster at vlancaster@cta.tech.

BSR/DASMA 203-201x, Standard for Rolling Doors (new standard)

This standard defines minimum design and performance specifications for non-fire rated rolling doors in commercial and industrial applications, consisting of assembled, interlocking slats of steel, stainless steel, or aluminum.

Single copy price: Free

Order from dasma@dasma.com. Send comments to rjames@thomasamc.com.

BSR/DASMA 204-201x, Standard for Fire Rated Rolling Door Assemblies (new standard)

This standard defines minimum design and performance specifications for fire-rated rolling door assemblies in commercial and industrial applications, consisting of assembled, interlocking slats of steel or stainless steel. This standard for fire-rated rolling door assemblies is intended to cover commercial and industrial type warehouses, factories, and other facilities where a service-counter fire door, fire shutter, or fire door is required to close an opening in a firewall during an emergency. Rolling fire doors intended for frequent use should be designed for high-cycle operation.

Single copy price: Free

Order from dasma@dasma.com. Send comments to riames@thomasamc.com.

BSR/DASMA 109-201x, Standard Method for Testing Garage Doors: Determination of Life Cycling Performance (revision of ANSI/DASMA 109-2001 (R2007))

This test method describes the evaluation apparatus of the physical cycling performance of a door system under normal operating conditions or other specified conditions. This test method describes the apparatus and the procedure to be used for applying cyclic operation to a test specimen.

Single copy price: Free

Order from dasma@dasma.com. Send comments to rjames@thomasamc.com.

BSR/DASMA 207-201x, Standard for Rolling Sheet Doors (revision of ANSI/DASMA 207-2012)

This standard defines minimum design and performance specifications for non-fire rated rolling sheet doors. This standard for rolling sheet door assemblies shall be intended to cover commercial and industrial type warehouses, factories, self-storage, and other facilities.

Single copy price: Free

Order from dasma@dasma.com. Send comments to riames@thomasamc.com.

BSR C78.43-201X, Electric Lamps - Single-Ended Metal Halide Lamps (revision and redesignation of ANSI ANSLG C78.43-2013)

This standard sets forth the physical and electrical requirements for single-ended metal halide lamps operated on 60-Hz ballasts to ensure interchangeability and safety. The data given also provides the basis for the electrical requirements for ballasts and ignitors, as well as the lamp-related requirements for luminaires. This standard includes lamps whose arc tubes are made of quartz or ceramic materials. Luminous flux and lamp color are not part of this standard.

Single copy price: \$220.00

Order from or send comments to Michael Erbesfeld at Michael. Erbesfeld@nema.org.

BSR/UL 2335-2012 (R201x), Standard for Safety for Fire Tests of Storage Pallets (reaffirmation of ANSI/UL 2335-2012)

UL proposes a reaffirmation for UL 2335.

Single copy price: Contact comm2000 for pricing and delivery options

Obtain a copy from http://www.comm-2000.com. Send comments to Griff Edwards at griff.edwards@ul.com.

Due 21 August 2017

BSR ASA S12.55 Amd.1-201x/ISO 3745-201x Amd.1-201x, Acoustics - Determination of sound power levels and sound energy levels of noise sources using sound pressure - Precision methods for anechoic rooms and hemi-anechoic rooms - Amendment 1 (a nationally adopted international standard amendment) (identical national adoption of ISO 3745 Amd.1:2017)

This is the national adoption of a recent amendment to an ISO standard that was nationally adopted several years ago.

Single copy price: \$19.00

Order from or send comments to Neil Stremmel at nstremmel@acousticalsociety.org.

BSR ASA S12.55-2012, ISO 3745:2012 (R201x), Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure - Precision methods for anechoic rooms and hemi-anechoic rooms (a nationally adopted international standard) (reaffirmation of ANSI ASA S12.55-2012, ISO 3745:2012)

This Nationally Adopted International Standard specifies methods for measuring the sound pressure levels on a measurement surface enveloping a noise source (machinery or equipment) in an anechoic room or a hemianechoic room.

Single copy price: \$105.00

Order from or send comments to Neil Stremmel <u>nstremmel@acousticalsociety.org</u>.

BSR ASA S12.58-2012 (R201x), Sound Power Level Determination for Sources Using a Single-Source Position (reaffirmation of ANSI ASA S12.58-2012)

Describes a method for determining sound power levels of noise sources that emit broadband sound and/or discrete frequency sounds/tones using reverberation rooms. Applies when it's undesirable or unfeasible to move the source to decrease uncertainty of measurement. Described method requires reverberation room prequalification through test and requires use of comparison method to determine sound power levels. Specifies environment, procedures and equipment used to qualify the room by test.

Single copy price: \$110.00

Order from or send comments to Neil Stremmel at nstremmel@acousticalsociety.org.

BSR/ASHRAE/ACCA Standard 211-201x, Standard for Commercial Building Energy Audits (new standard)

The purpose of this standard is to establish consistent practices for conducting and reporting audits for commercial buildings.

Single copy price: \$35.00

Order from or send comments to standards.section@ashrae.org.

BSR/EIA 60384-8 Ed.4-201x, Fixed capacitors for use in electronic equipment - Part 8: Sectional specification: Fixed capacitors of ceramic dielectric, Class 1 (identical national adoption of IEC 60384-8:2015 and revision of ANSI/EIA 60384-8 Ed.4-201x)

This part of IEC 60384 is applicable to fixed capacitors of ceramic dielectric with a defined temperature coefficient (dielectric Class 1), intended for use in electronic equipment, including leadless capacitors but excluding fixed surface mount multilayer capacitors of ceramic dielectric, which are covered by IEC 60384-21 (Class 1). Capacitors for electromagnetic interference suppression are not included, but are covered by IEC 60384-14.

Single copy price: \$107.00

Order from Global Engineering Documents, www.global.ihs.com.

Send comments to Ed Mikoski at emikoski@ecianow.org.

BSR/EIA 60384-9 Ed.4-201x, Fixed capacitors for use in electronic equipment - Part 9: Sectional specification: Fixed capacitors of ceramic dielectric, Class 2 (identical national adoption of IEC 60384-9:2015 and revision of ANSI/EIA 60384-9 Ed.4-201x)

This part of IEC 60384 is applicable to fixed capacitors of ceramic dielectric with a defined temperature coefficient (dielectric Class 2), intended for use in electronic equipment, including leadless capacitors but excluding fixed surface mount multilayer capacitors of ceramic dielectric, which are covered by IEC 60384-22 (Class 2). Capacitors for electromagnetic interference suppression are not included, but are covered by IEC 60384-14.

Single copy price: \$101.00

Order from Global Engineering Documents, www.global.ihs.com.

Send comments to Ed Mikoski at emikoski@ecianow.org.

BSR C137.0-201x, Standard for Lighting Systems Terms and Definitions (new standard)

The definitions listed in this document apply or are directly related to lighting systems and are used in multiple lighting system standards. This standard is intended for use by lighting systems standards developers. The terms found in this document are recommended for use in all ANSI C137 lighting system standards. Where this document does not include a term, other references are listed.

Single copy price: Free

Order from or send comments to Karen Willis Karen.willis@nema.org.

BSR/TIA 862-B-1-201x, Structured Cabling Infrastructure Standard for Intelligent Building Systems, Addendum 1: Updated References, Accommodation of New Media Types (addenda to ANSI/TIA 862-B-2016)

This Addendum updates references and accommodates new media types introduced by ANSI/TIA 568-C.2-1 and ANSI/TIA 568.3-D.

Single copy price: \$60.00

Order from or send comments to standards@tiaonline.org.

Due 29 August 2017

BSR/ASME Y14.41.1-201x, 3D Model Organization Schema (new standard)

This standard establishes a schema for organizing information in a model within a digital product definition data set. The schema defines a common practice to improve design productivity and to deliver consistent data content and structure to consumers of the data. An alternate method of data organization may be used as long as a cross-reference is provided to the schema.

Single copy price: Free

Order from Mayra Santiago at ansibox@asme.org.

Send comments to: Fredric Constantino at constantinof@asme.org.

BSR/ASNT CP-106-201x, Nondestructive Testing - Qualification and Certification of Personnel (national adoption of ISO 9712:2012 with modifications and revision of ANSI/ASNT CP-106-2008)

Provide a system for the qualification and certification of NDT personnel by third-party certification bodies.

Single copy price: N/A

Obtain an electronic copy from: https://www.asnt.org/MajorSiteSections/NDT-Resource-Center/Codes and Standards/ASNT Standards/ansi-asnt cp-106/2017 public review.

Send comments to clongo@asnt.org.

CSA Public Review Announcements

The CSA Group has announced a draft document for public review that might be of interest to *Standards Watch* readers. To participate in the public review please visit: http://publicreview.csa.ca/.

Due 8 September 2017

C22.1, Amendment - Canadian Electrical Code, Part I, Subject No. 4229, Segregated LED Lighting Circuits (amendment)

The proposal is for a new class of circuits, Segregated LED Lighting Circuits, with new rules. The argument for this is that they could be rated for reduced current and served with smaller gauge wire, with substantial cost savings in building construction.

Due 16 August 2017

Z1003, Paramedic Psychological Health and Safety in the Workplace (new standard)

The purpose of this standard is to provide paramedic service organizations and other key stakeholders with guidance on good practice for the assessment of hazards and management of psychological health and safety risks for paramedic service organizations and the promotion of improved psychological health and safety.

New ANS Projects

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

BSR C78.20-201X, Standard for Electric Lamps - A, G, PS, and Similar Shapes with E26 Medium Screw Bases (revision of ANSI C78.20 -2003 (R2015))

This standard sets forth physical and electrical characteristics of the group of incandescent lamps that have A, G, PS, and similar bulb shapes with E26 single- and double-contact medium screw bases including the reduced wattage versions. Only clear, inside-frost, frostequivalent, and white-bulb finishes are acknowledged. Excluded from this standard are tungsten-halogen and projection lamps. For more information, contact Michael Erbesfeld at Michael.Erbesfeld@nema.org.

BSR C78.377-201X, Electric Lamps: Specifications for the Chromaticity of Solid-State Lighting Products (revision of ANSI C78.377-2017)

The purpose of this standard is to specify the range of chromaticities recommended for general lighting with solid state lighting (SSL) products, as well as to ensure that the white light chromaticities of the products can be communicated to consumers. This standard applies to LED lamps, LED light engines, and LED luminaires for general indoor lighting applications. This document does not apply to lighting fixtures sold without a light source. This standard does not apply to SSL products for outdoor applications. This standard also does not apply to SSL products for some indoor applications that intentionally produce tinted or colored light. This document does not include OLED products. For more information, contact Michael Erbesfeld at Michael.Erbesfeld@nema.org.

BSR C78.389-1989 (S201x), Electric lamps - High Intensity Discharge - Methods of Measuring Characteristics (stabilized maintenance of ANSI C78.389-1989 (R2009))

This standard describes the procedures to be followed and the precautions to be observed in measuring the electrical characteristics of high-intensity discharge lamps as specified in the American National Standard Specifications for Mercury (Hg), High-pressure Sodium (HPS) and Metal Halide (MH) Lamps, as referenced in clause 2, Normative references. It is the purpose of this standard to outline methods of measurement that will make it possible to obtain reproducible and accurate measurements of High Intensity Discharge lamp characteristics. Deviations from the procedures given in this standard are permissible for production or other testing, provided that the methods used give results in substantial agreement with the methods given in this standard. In cases of doubt, reference shall be made to the methods specified in the appropriate American National Standard, referenced in clause 2, to establish the validity of the results obtained by any alternate procedure. For more information, contact Michael Erbesfeld at Michael Erbesfeld@nema.org.

BSR C78.62612-201X, Standard for Electric Lamps – Self-ballasted LED Lamp - Performance Specifications (new standard)

This Standard specifies the performance requirements, together with the test methods and conditions, required to show compliance of LED lamps with integral means for stable operation, intended for domestic and similar general lighting purposes. For more information, contact Michael Erbesfeld at Michael Erbesfeld@nema.org.

BSR C78.62717-201X, Standard for Electric Lamps - LED modules for general lighting - Performance Requirements (new standard)

This Standard specifies the performance requirements for LED modules, together with the test methods and conditions, required to show compliance with this standard. For more information, contact Michael Erbesfeld at Michael Erbesfeld@nema.org.

BSR C81.61-201X, Standard for Electrical Lamp Bases Specifications for Bases (Caps) for Electric Lamps (revision of ANSI C81.61-2017)

This standard sets forth the specifications for bases (caps) used on electric lamps. For more information, contact Michael Erbesfeld@nema.org.

BSR C81.62-201X, Electric Lampholders (revision of ANSI C81.62-2017)

This standard sets forth the specifications for lampholders for electric lamps. For more information, contact Michael Erbesfeld at Michael. Erbesfeld @nema.org.

BSR C81.63-201X, **Gauges for Electric Lamp Bases and Lampholders** (revision of ANSI C81.63-2007 (R2014))

This standard sets forth the specifications for gauges for bases (caps) and lampholders for electric lamps. For more information, contact Michael Erbesfeld at Michael.Erbesfeld@nema.org.

BSR C82.11-201X, Lamp Ballasts: High Frequency Fluorescent Lamp Ballasts (revision of ANSI C82.11-2017)

This standard is intended to cover high-frequency ballasts which have rated open-circuit voltages of 2000 volts or less, to operate the lamp at frequencies between 10 kHz and 500 kHz, and are intended to operate at a supply frequency of 50 Hz or 60 Hz. This comprises ballasts for hot-cathode fluorescent lamps, either switch-start (preheat-start), rapidstart (continuously heated cathodes), modified rapid start, programmed start, or instant start used primarily for lighting purposes. The ballast and lamp combinations covered by this specification are normally intended for use in room ambient temperatures of 10OC to 40OC. At ambient temperatures outside this range, certain special operating characteristics may be required. For more information, contact Michael Erbesfeld@nema.org.

BSR/BIFMA ISO 24496-201X, Office furniture - Office chairs – Methods for the determination of dimensions (identical national adoption of ISO 24496:2017)

This document specifies methods for the determination of the dimensions of office chairs. This document does not contain dimensional specifications or requirements. For more information, contact David Panning at dpanning@bifma.org.

BSR C82.16-201X, Light Emitting Diode Drivers - Methods of Measurement (revision of ANSI C82.16-2015) This standard describes the procedures to be followed and the precautions to be taken in measuring performance of LED drivers. The scope includes, but is not limited to, LED drivers with these characteristics: General lighting, exterior lighting, and roadway lighting applications, Input supply voltage up to 600 VDC or 600 VAC (50 or 60 Hz), Output open-circuit voltage of 600 V or less, Constant-current or constant-voltage direct current (DC) output, Fixed, variable (dimmable), pulse-width modulation, or programmable (tunable) output power, external (standalone) or internal (enclosed in luminaire). For more information, contact Michael Erbesfeld at Michael.Erbesfeld@nema.org.

BSR C82.77-5-201X, Lighting Equipment - Voltage Surge Requirements (revision of ANSI C82.77-5-2015) This standard specifies voltage surge limits and testing requirements for lighting equipment. It covers all types of lighting equipment used for general illumination (typically found in residential, commercial, and industrial applications) and connected to commonly distributed 60-Hz alternating current (AC) power line systems. For more information, contact Michael Erbesfeld at Michael.Erbesfeld@nema.org.

BSR C82.77-10-201X, Lighting Equipment - Harmonic Emission Limits - Related Power Quality Requirements (revision of ANSI C82.77-10-2014)

This standard specifies harmonic limits, their methods of measurement, and power factor (PF) for lighting equipment. This standard covers all types of lighting equipment that is used for general illumination (typically found in residential, commercial, and industrial applications) and which is connected to commonly distributed 60-Hz alternating current (AC) power line systems. For more information, contact Michael Erbesfeld at Michael.Erbesfeld@nema.org.

BSR C82.77-12-201X, Lighting Equipment - Inrush Requirements (new standard)

This standard provides compatibility requirements among ballasts, LED drivers, self-ballasted lamps, and lighting controls in terms of maximum inrush currents. It provides limits and test methods. For more information, contact Michael Erbesfeld at Michael. Erbesfeld nema.org.

BSR/NFPA 15-201x, Standard for Water Spray Fixed Systems for Fire Protection (revision of ANSI/NFPA 15-2012)

Provides the minimum requirements for the design, installation, and system acceptance testing of water spray fixed systems for fire protection service and the minimum requirements for the periodic testing and maintenance of ultra-high-speed water spray fixed systems. Water-spray fixed systems shall be specifically designed to provide for effective fire control, extinguishment, prevention, or exposure protection. For more information, contact Dawn Bellis at ccronin@nfpa.org.

BSR/NFPA 17-201x, Standard for Dry Chemical Extinguishing Systems (revision of ANSI/NFPA 17-2012) This standard includes minimum requirements for dry chemical fire extinguishing systems that discharge dry chemical from fixed nozzles or hand hose lines by means of expellant gas. For more information, contact Dawn Bellis at ccronin@nfpa.org.

BSR/NFPA 17A-201x, Standard for Wet Chemical Extinguishing Systems (revision of ANSI/NFPA 17A-2012) The provisions of this standard apply to the design, installation, operation, testing, and maintenance of preengineered wet chemical fire-extinguishing systems that discharge wet chemical from fixed nozzles and piping by means of expellant gas. It contains only the essential requirements and recommendations needed to make the standard workable in the hands of those skilled in this field. For more information, contact Dawn Bellis at ccronin@nfpa.org.

BSR/NFPA 497-201x, Recommended Practice for the Classification of Flammable Liquids, Gases, or Vapors and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas (revision of ANSI/NFPA 497-2011)

Applies to those locations where flammable gases or vapors, flammable liquids, or combustible liquids are processed or handled; and where their release into the atmosphere could result in their ignition by electrical systems or equipment. For more information, contact Dawn Bellis at ccronin@nfpa.org.

BSR/NFPA 909-201x, Code for the Protection of Cultural Resource Properties - Museums, Libraries, and Places of Worship (revision of ANSI/NFPA 909-2012)

This code describes principles and practices of protection for cultural resource properties (including, but not limited to, museums, libraries, and places of worship), their contents, and collections, against conditions or physical situations with the potential to cause damage or loss. For more information, contact Dawn Bellis at ccronin@nfpa.org.

BSR/NFPA 1616-201x, Standard on Mass Evacuation, Sheltering, and Re-entry Programs (new standard) This standard shall establish a common set of criteria for the process of organizing, planning, implementing, and evaluating a program for mass evacuation, sheltering, and re-entry. The requirements in this standard are based on the existence of a program for integrated disaster/emergency management and business continuity. An integrated program is defined in NFPA 1600. The integrated program is scalable to meet the needs of evacuation sheltering and re-entry. For more information, contact Dawn Bellis at ccronin@nfpa.org.

BSR/NFPA 1858-201x, Standard on Selection, Care, and Maintenance of Life Safety Rope and Equipment for Emergency Services (new standard)

This standard will identify the operating environment parameters, as well as the minimum requirements for the design, performance, testing, and certification of two-way, portable (i.e., hand-held) land mobile radios (LMR) for use by emergency services personnel during emergency incident operations without compromising compatibility with field emergency services communications networks. For more information, contact Dawn Bellis at ccronin@nfpa.org.

BSR/NFPA 1859-201x, Selection, Care and Maintenance of Tactical Video Equipment (new standard) This standard shall specify minimum requirements for the selection, care, and maintenance of video equipment used by the responder community in tactical operations. Such tactical operations include reconnaissance/detection, surveillance awareness, or event capture. For more information, contact Dawn Bellis at ccronin@nfpa.org.

BSR/NFPA 1983-201x, Standard on Life Safety Rope and Equipment for Emergency Services (revision of ANSI/NFPA 1983-2011)

This standard shall specify minimum design, performance, testing, and certifications requirements for life safety rope, escape rope, water rescue throwlines, life safety harnesses, belts, victim extrication devices, litters, escape webbing, escape systems, and auxiliary equipment for emergency services personnel. This standard shall specify requirements for new life safety rope, escape rope, water rescue throwlines, life safety harnesses, belts, manufacturer-supplied eye terminations, moderate elongation laid life safety rope, belay devices, and auxiliary equipment. For more information, contact Dawn Bellis at ccronin@nfpa.org.

BSR/NFPA 1986-201x, Standard on Respiratory Protection Equipment for Tactical and Technical Operations (new standard)

This standard shall specify the minimum requirements for the design, performance, testing, and certification of (1) new compressed breathing air open-circuit self-contained breathing apparatus (SCBA) and compressed breathing air combination open-circuit self-contained breathing apparatus and supplied air respirators (SCBA/SARs); and (2) replacement parts, components, and accessories for those respirators. For more information, contact Dawn Bellis at ccronin@nfpa.org.

Final Actions on American National Standards

The documents listed below have been approved by the ANSI Board of Standards Review or by an ANSI-Audited Designator on the date noted.

ANSI/ASME Y14.100-2017, Engineering Drawing Practices (revision of ANSI/ASME Y14.100-2004 (R2013)): 22 June 2017

ANSI/EIA 364-114-2010 (R2017), Coupling and Uncoupling Force Test Procedure for Electrical Connectors, Sockets and Applicable Accessories (reaffirmation of ANSI/EIA 364-114-2010): 19 June 2017

ANSI/SVIA 1-2017, Four Wheel All-Terrain Vehicles (revision of ANSI/SVIA 1-2010): 8 June 2017

ANSI J-STD-036-C-2-2017, **Enhanced Wireless 9-1-1 Phase II** (addenda to ANSI J-STD-036-C-2011): 19 June 2017

ANSI/UL 60384-14-2017, Standard for Safety for Fixed Capacitors for Use in Electronic Equipment - Part 14: Sectional Specification: Fixed Capacitors for Electromagnetic Interference Suppression and Connection to the Supply Mains (national adoption of IEC 60384-14 with modifications and revision of ANSI/UL 60384-14-2016a): 1 June 2017

ANSI/UL 248-1-2017, Standard for Safety for Low-Voltage Fuses - Part 1: General Requirements (revision of ANSI/UL 248-1-2011 (R2015)): 16 June 2017

ANSI/UL 1581-2017a, Standard for Safety for Reference Standard for Electrical Wires, Cable, and Flexible Cords (Proposals dated 5/5/17) (revision of ANSI/UL 1581-2016): 9 June 2017

ANSI C136.19-2017, High-Pressure Sodium and Retrofit High-Pressure Sodium Lamps for Mercury Ballasts - Guide for Selection (revision of ANSI C136.19-2010): 27 June 2017

Draft IEC & ISO Standards

This section lists proposed standards that the International Electromechanical Commission (IEC) or the International Organization for Standardization (ISO) are considering for approval. Standards Watch readers interested in reviewing and commenting on the document should order a copy from their national representative and submit their comments through them. Comments from US citizens on IEC documents should be sent to Charles T. Zegers at czegers@ansi.org. Comments from US citizens regarding ISO documents should be sent to Karen Hughes at isot@ansi.org. Any prices, if shown, are for purchases through ANSI; prices elsewhere may differ. The sort order is by due date.

ISO/DIS 20318-1, Mechanical pencils and leads for general use - Classification, dimensions, quality and test methods - Part 1: Mechanical pencils – 16 July 2017, \$53.00

ISO/DIS 20318-2, Mechanical pencils and leads for general use - Classification, dimensions, quality and test methods - Part 2: Black leads – 16 July 2017, \$53.00

34D/1292/FDIS, IEC 60598-1/AMD1 ED8: Amendment 1 – Luminaires - Part 1: General requirements and tests, 04 August 2017

85/600/DC, Electrical safety in low voltage distribution systems up to 1000 v a.c. and 1 500 v d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 1: General requirements, 04 August 2017

85/601/DC, Electrical safety in low voltage distribution systems up to 1000 v a.c. and 1 500 v d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 2: Insulation resistance, 04 August 2017

85/602/DC, Electrical safety in low voltage distribution systems up to 1000 v a.c. and 1 500 v d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 3: Loop impedance, 04 August 2017

85/603/DC, Electrical safety in low voltage distribution systems up to 1000 v a.c. and 1 500 v d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 4: Resistance of earth connection and equipotential bonding, 04 August 2017

85/604/DC, Electrical safety in low voltage distribution systems up to 1000 v a.c. and 1 500 v d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 5: Resistance to earth, 04 August 2017

85/605/DC, Electrical safety in low voltage distribution systems up to 1000 v a.c. and 1 500 v d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 6: Effectiveness of residual current devices (RCD) in TT, T and IT System, 04 August 2017

25/599/FDIS. ISO 80000-2 ED2: Quantities and units – Mathematics. 11 August 2017

26/626/FDIS, IEC 62822-3 ED1: Electric welding equipment - Assessment of restrictions related to human exposure to electromagnetic fields (0 Hz to 300 Hz) - Part 3: Resistance welding equipment, 11 August 2017

34C/1351/FDIS, **IEC 61347-1/AMD1 ED3**: Amendment 1 – Lamp controlgear - Part 1: General and safety requirements, 11 August 2017

ISO/DIS 4007, Personal protective equipment - Eye and face protection - Vocabulary – 03 September 2017, \$146.00

ISO/DIS 2401, Welding consumables - Covered electrodes - Determination of the efficiency, metal recovery and deposition coefficient – 07 September 2017, \$40.00

ISO/DIS 5171, Gas welding equipment - Pressure gauges used in welding, cutting and allied processes – 08 September 2017, \$58.00

ISO/DIS 24679-1, Fire safety engineering - Performance of structures in fire - Part 1: General – 13 September 2017, \$98.00

108/688/CDV, IEC 62368-1 ED3: Audio/video, information and communication technology equipment - Part 1: Safety requirements, 15 September 2017

29/955/CDV, **IEC 62489-1/AMD2 ED1**: Amendment 2 - Electroacoustics - Audio-frequency induction loop systems for assisted hearing - Part 1: Methods of measuring and specifying the performance of system components, 15 September 2017

31/1322/CDV, ISO/IEC 62990-1 ED1: Workplace Atmospheres – Part 1: Gas detectors - Performance requirements of detectors for toxic gases, 15 September 2017

34C/1349/CD, IEC 62386-104 ED1: Digital addressable lighting interface - Part 104: General requirements - Wireless and alternative wired system components, 15 September 2017

40/2536/CDV, **IEC 60384-26 ED2**: Fixed capacitors for use in electronic equipment - Part 26: Sectional specification – Fixed aluminium electrolytic capacitors with conductive polymer solid electrolyte, 15 September 2017

40/2542/CD, IEC 60384-21 ED3: Fixed capacitors for use in electronic equipment - Part 21: Sectional specification - Fixed surface mount multilayer capacitors of ceramic dielectric, Class 1, 15 September 2017

40/2543/CD, **IEC 60384-22 ED3**: Fixed capacitors for use in electronic equipment - Part 22: Sectional specification - Fixed surface mount multilayer capacitors of ceramic dielectric, Class 2, 15 September 2017

86C/1460/CDV, IEC 61291-1 ED4: Optical amplifiers - Part 1: Generic specification, 22 September 2017

Recently Published IEC & ISO Documents

Listed here are documents recently approved by the IEC and ISO. A list of standards resellers is available at http://webstore.ansi.org/faq.aspx#resellers.

ISO 20480-1:2017, Fine bubble technology - General principles for usage and measurement of fine bubbles - Part 1: Terminology, \$45.00

IEC 62680-1-2 Ed. 2.0 en:2017, Universal serial bus interfaces for data and power - Part 1-2: Common components - USB Power Delivery specification, \$410.00

IEC 60794-2 Ed. 4.0 b:2017, Optical fibre cables - Part 2: Indoor cables - Sectional specification, \$82.00

IEC 61921 Ed. 2.0 b:2017, Power capacitors - Low-voltage power factor correction banks, \$164.00

S+ IEC 61921 Ed. 2.0 en:2017 (Redline version), Power capacitors - Low-voltage power factor correction banks, \$213.00

IEC 62841-2-1 Ed. 1.0 b:2017, Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery - Safety - Part 2-1: Particular requirements for hand-held drills and impact drills, \$235.00

ISO 532-2:2017, Acoustics - Methods for calculating loudness - Part 2: Moore-Glasberg method, \$162.00

ISO/TR 16576:2017, Fire safety engineering - Examples of fire safety objectives, functional requirements and safety criteria, \$232.00

IEC 63013 Ed. 1.0 b:2017, LED packages - Long-term luminous and radiant flux maintenance projection, \$82.00

IEC 60099-5 Ed. 2.0 b:2013, Surge arresters - Part 5: Selection and application recommendations, \$387.00

TSP Meeting Schedule

The Stage Lifts Working Group will meet by WebEx from 15:00 – 17:00 on Thursday 13 July 2017.

The July meetings are scheduled to be at the Marriott Solana in Westlake, TX. The most up to date schedule can be found on the ESTA website at http://tsp.esta.org/tsp/meetings/index.php, where there is a "Reserve a Hotel Room" link. All working group meetings will have a WebEx option.

Control Protocols E1.20 Task Group	13:30 – 16:00	Saturday 22 July 2017
Control Protocols E1.31 Task Group	20:00 - 22:00	Saturday 22 July 2017

Control Protocols E1.33 Task Group	10:00 – 16:00	Sunday 23 July 2017
	14:00 – 18:00	Monday 24 July 2017
Control Protocols E1.37-4 Task Group	16:00 – 18:00	Saturday 22 July 2017
Control Protocols E1.37-5 Task Group	16:00 – 18:00	Sunday 23 July 2017
Control Protocols E1.59 Task Group	09:00 – 12:30	Saturday 22 July 2017
Control Protocols Plugfest	16:00 – 22:00	Friday 21 July 2017
	09:00 - 22:00	Saturday 22 July 2017
	09:00 – 22:00	Sunday 23 July 2017
	09:00 - 22:00	Monday 24 July 2017
	09:00 – noon	Tuesday 25 July 2017
Control Protocols Plugfest Roundtable 1	19:00 – 20:00	Sunday 23 July 2017
Control Protocols Plugfest Roundtable 2	19:00 – 20:00	Monday 24 July 2017
Control Protocols Working Group (CPWG)	09:00 - 13:00	Monday 24 July 2017
Electrical Power Working Group (EPWG)	09:00 - 13:00	Sunday 23 July 2017
ESTA Lifetime Technical Achievement Award	9:00 – 9:30	Monday 24 July 2017
Event Safety Crowd Management Task Group	14:00 – 18:00	Saturday 22 July 2017
	09:00 - 13:00	Sunday 23 July 2017
Event Safety Fire Safety Task Group	09:00 – 13:00	Sunday 23 July 2017
Event Safety Working Group (ESWG)	14:00 – 18:00	Sunday 23 July 2017
Photometrics Working Group (PWG)	14:00 – 18:00	Monday 24 July 2017
Rigging E1.6-3 Task Group	14:00 – 18:00	Saturday 22 July 2017
Rigging Working Group (RWG)	19:00 – 23:00	Saturday 22 July 2017
Technical Standards Council (TSC)	09:00 – 13:00	Tuesday 25 July 2017

The November meetings will be at the Tropicana Las Vegas Casino Hotel Resort, 3801 Las Vegas Blvd. South. The schedule is preliminary; meetings will be added, deleted, and rescheduled between now and November. The most up to date schedule can be found on the ESTA website at http://tsp.esta.org/tsp/meetings/index.php, where there is a "Reserve a Hotel Room" link. All working group meetings will have a WebEx option.

Control Protocols Working Group (CPWG)	09:00 – noon	Thursday 16 November 2017
CPWG BSR E1.33, RDMnet TG	10:00 – 18:00	Monday 20 November 2017
CPWG BSR E1.30-7 TG	14:00 – 17:00	Sunday 19 November 2017
Electrical Power Working Group (EPWG)	19:00 – 22:00	Friday 17 November 2017
Event Safety Working Group (ESWG)	09:00 – noon	Friday 17 November 2017
Floors Working Group (FWG)	13:00 – 14:30	Friday 17 November 2017
Fog & Smoke Working Group (FSWG)	15:00 – 17:00	Friday 17 November 2017
Photometrics Working Group (PWG)	13:00 – 15:00	Thursday 16 November 2017
Rigging Working Group (RWG)	19:00 – 23:00	Wednesday 15 November 2017
Technical Standards Council (TSC)	14:00 – 18:00	Wednesday 15 November 2017

ESTA Standards Watch

is distributed as a benefit to ESTA members and as a communications medium for ESTA's Technical Standards Program. Original material is copyright the Entertainment Services and Technology Association.

Editors:

Karl G. Ruling, Technical Standards Manager Entertainment Services and Technology Association

630 Ninth Avenue, Suite 609 New York, NY 10036

USA

karl.ruling@esta.org

1 212 244 1505 ext. 703 Fax 1 212 244 1502 Erin Grabe, Asst. Technical Standards Manager Entertainment Services and Technology Association

630 Ninth Avenue, Suite 609

New York, NY 10036

USA

erin.grabe@esta.org

1 212 244 1505 ext. 606 Fax 1 212 244 1502

TSP Donors Who Have Made Long-Term, Multi-Year Pledges

About the Stage Altman Lighting

Barbizon Lighting Company

B-Hive Industries Scott Blair

Boston Illumination Group

Candela Controls Chauvet

City Theatrical

Clark-Reder Engineering

Columbus McKinnon Corporation Tracey Cosgrove and Mark McKinney

Bruce Darden
Doug Fleenor Design
Earl Girls Inc. EGI Pro
Electronic Theatre Controls
Entertainment Project Services

Geiger Engineers, PC Tony Giovannetti

GLP German Light Products

Golden Sea Professional Equipment Limited

H & H Specialties Harlequin Floors High Output Neil Huff

Hughston Engineering IATSE Local 891

InCord

Beverly and Tom Inglesby Interactive Technologies InterAmerica Stage

iWeiss Inc. J.R. Clancy Jules Lauve Brian Lawlor Lex Products Lycian Stage Lighting John T. McGraw

McLaren Engineering Group Mike Garl Consulting Mike Wood Consulting Morpheus Lights

NAMM Niscon

Oasis Stage Werks Reed Rigging

Reliable Design Services

Robe

Rosco Laboratories Alan M. Rowe David Saltiel Sapsis Rigging

Stage Equipment & Lighting

Stage Rigging Stagemaker Stageworks

Syracuse Scenery and Stage Lighting, Co.

Dana Taylor Steve Terry

Texas Scenic Company Theatre Projects Consultants Theatre Safety Programs

TMB Tomcat

Tyler Truss Systems

VER Vertigo

Vincent Lighting Systems Steve Walker & Associates Walt Disney Parks and Resorts

WNP Services, Inc.

XSF Xtreme Structures and Fabrication

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

VISIONARY LEADERS (\$50,000 & up)

ETC ProSight Specialty Insurance

VISIONARY (\$10,000 & up; >100

employees/members)

Chauvet Professional United States Institute for Theatre Technology

Columbus McKinnon Entertainment Technology VER

Martin Professional Walt Disney Parks and Resorts

Robe

VISIONARY (\$5,000 & up; 20-100

employees/members)

Altman Lighting, Inc. Stage Rigging

German Light Products TMB

JR Clancy Tyler Truss Systems, Inc.

McLaren Engineering Group

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

B-Hive Industries, Inc.

Scott Blair

Mike Garl Consulting

Mike Wood Consulting

Boston Illumination Group Reed Rigging

Candela Controls Inc. Reliable Design Services

Clark Reder Engineering

Tracey Cosgrove & Mark McKinney

Doug Fleenor Design

Alan Rowe
David Saltiel
Sapsis Rigging Inc.

EGI Event Production Services Stageworks
Entertainment Project Services Dana Taylor
Neil Huff Steve Terry

Neil Huff Steve Terry
Hughston Engineering Inc. Theatre Projects
Interactive Technologies Theatre Safety Programs

Jules Lauve Tobins Lake Sales Theatrical Supply

Brian Lawlor Vertigo

Limelight Productions, Inc. Steve A. Walker & Associates

John T. McGraw WNP Services

INVESTOR (\$3,000-\$9,999; >100

employees/members)

Barbizon Electric NAMM

Golden Sea Professional Equipment Limited Rosco Laboratories IATSE Local 891 Texas Scenic Company

Lex

INVESTOR (\$1,500-\$4,999; 20-100

employees/members)

American Society of Theatre Consultants Morpheus Lights
City Theatrical Inc. Niscon Inc.

InterAmerica Stage, Inc.

Syracuse Scenery and Stage Lighting

Lycian Stage Lighting

XSF Xtreme Structures and Fabrication

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

About the Stage LuciTag

Benjamin Cohen

Bruce Darden

Tony Giovannetti

Lumenradio AB

Moss LED

Nudelta Digital

Indianapolis Stage Sales & Rentals, Inc. Project SSSHH Incorporated

Jason Kyle Stephen Vanciel

Eric Loader

SUPPORTER (<\$3,000; >100 employees/members)

Ian Foulds, IATSE Local 873 IATSE Local 80

PSAV Harlequin Floors

SUPPORTER (<\$1,500; 20-100

employees/members)

Aerial Arts Serapid

Blizzard Lighting, LLC Stage Equipment & Lighting

Creative Stage Lighting Stagemaker

Geiger Engineers Thermotex Industries, Inc.

H&H Specialties Tomcat

High Output Total Structures

Ultratec Special Effects InCord **iWeiss** Vincent Lighting Systems

Oasis Stage Werks

SUPPORTER (<\$200; <20 employees/members)

AC Power Distribution, Inc. Shawn Nolan Milton Davis Lizz Pittslev Peter Donovan Phil Reilly

Pat Grenfell Robert Scales Mitch Hefter **Charles Scott** Bill Hektner Michael Skinner

Alan Hendrickson Skjonberg Controls Inc. Hoist Sales and Services Studio T+L, LLC

Beverly and Tom Inglesby John Szewczuk Intensity Advisors Teclumen

JSAV Theta Consulting Eddie Kramer Tracy Underhill Michael Lay Ken Vannice 🗠 John Musarra

Planned Giving donor

Volume 21, Number 13 Page 18

Robert L. Williams