A New Source for Regulatory Standards Information

Stay updated with Safety and Compliance information on the PSMA Database

Additional updates with the Energy Efficiency Database

Kevin Parmenter & Jim Spangler
PSMA Safety & Compliance Committee Co-Chairs

Jim Spangler contact information

- Spangler Prototype Inc.
- 1015 Blackhawk Dr.
- Elgin, IL 60120
- www.spanglerprototype.com
- jim.spangler@spanglerprototype.com
- jim.spangler@ieee.org

Jim Spangler Bio

Jim Spangler is a Life Member of the IEEE with over 40 years of electronics design experience and is president of Spangler Prototype Inc. (SPI). His power electronics engineering consulting firm's priority is helping companies to place products into production, assisting them to pass government regulations and agency standards such as: UL, FCC, ANSI, IES, and the IEC.

For many years, he worked as a Field Applications Engineer (FAE) for Motorola Semiconductor, On Semiconductor, Cirrus Logic, and Active Semiconductor, assisting customers to use semiconductors. He published numerous application notes and conference papers at a variety of conferences: APEC, ECCE, IAS, and PCIM. Topics included Power Factor Correction, Lighting, and automotive applications. As an FAE, he traveled internationally giving Switch Mode Power Supply seminars in Australia, Hong Kong, Taiwan, Korea, Japan, Mexico, and Canada.

Jim has a Master's Degree from Northern Illinois University (NIU), and was a PhD candidate at Illinois Institute of Technology (IIT). He taught senior and first level graduate student classes: Survey of Power Electronics, Fields and Waves, and Electronic Engineering at IIT and Midwest College of Engineering.

Jim is a member of the IEEE: IAS, PELS, PES; Illuminating Engineering Society (IES), Society of Automotive Engineers (SAE), and the Power Sources Manufacturers Association (PSMA) where he is Co-Chair of the Safety and Compliance Committee.

Kevin Parmenter Bio.

Kevin Parmenter has over 20 years of experience in the electronics and semiconductor industry. Kevin is currently vice president of applications engineering in the U.S.A. for Excelsys, an Advanced Energy company. Previously, Kevin has served as director of Advanced Technical Marketing for Digital Power Products at Exar, and led global product applications engineering and new product definition for Freescale Semiconductors AMPD - Analog, Mixed Signal and Power Division based in Tempe, Arizona.

Prior to that, he worked for Fairchild Semiconductor in the Americas as senior director of field applications engineering and held various technical and management positions with increasing responsibility at ON Semiconductor and in the Motorola Semiconductor Products Sector. Kevin also led an applications engineering team for the start-up Primarion where he worked on high-speed electro-optical communications and digital power supply semiconductors.

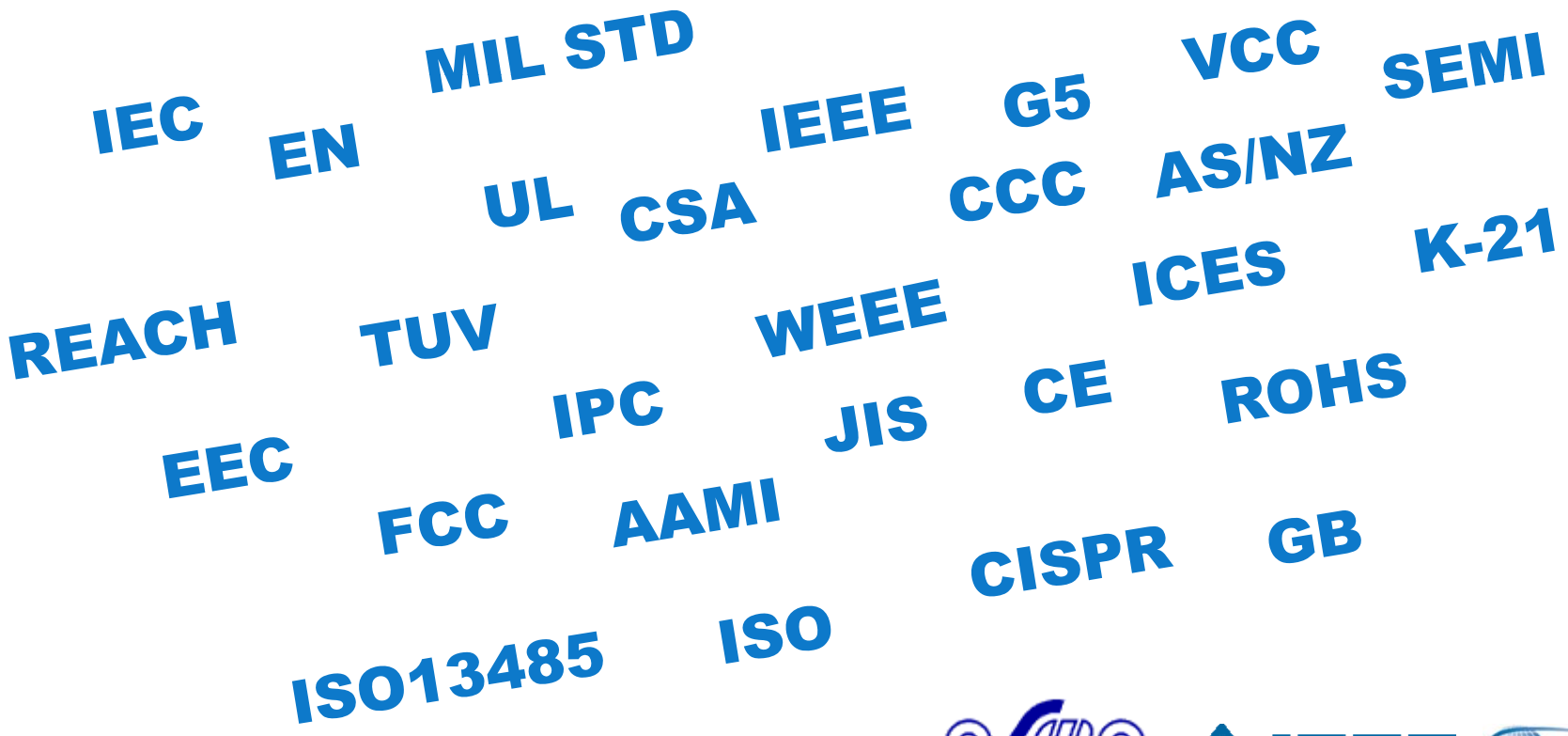
Kevin serves on the board of directors of the PSMA (Power Sources Manufacturers Association) and was the general chair of APEC 2009 (the IEEE Applied Power Electronics Conference.) Kevin has also had design engineering experience in the medical electronics and military electronics fields. He holds a BSEE and BS in Business Administration, is a member of the IEEE, and holds an Amateur Extra class FCC license (call sign KG5Q) as well as an FCC Commercial Radiotelephone License.

Engineer: Begin the project

- Define the project
- Define the environments
  - USA, North America, Europe, China
  - Temperature
  - Supply voltage, battery voltage
  - Faults
  - Human to Machine Interface
- Regulatory Agencies

Are you overwhelmed with product compliance standards?

- Staying abreast of changes is difficult
- Updates are constantly needed



Who are the organizations?

- ANSI
  - American National Standards Institute
- NEMA
  - National Equipment Manufactures Association
- Underwriters Laboratories
- European Standards (EN)

What you need to know

- Latest revisions
- Latest update activity
  - When is the new revision available?
  - When is the new standard being enforced?
- Latest proposed standards
- Emerging standards
  - What is replacing the old standard
- Adjacent or associated standards
- Latest harmonization

The PSMA has two databases

- Safety & Compliance Database
  - Created for the Power Sources Manufacturers Association to help its members and associated members develop and ship products
  - Give its members a competitive edge, with notice of the latest standards and regulations
- Energy Efficiency Database
  - Safety and Compliance Database grew from the Energy Efficiency Database
  - California Energy Commission and Energy Star
- Available to anyone – and it's FREE!

S&C Stay up-to-date

- Access standards database online
- Updated daily
- New standards added continually
  - Users can recommend or suggest standards (or other inputs) for us to monitor and implement
  - Includes: events, meetings, standards revisions, standards drafts, etc.

S&C Database Summary

- NUMBER OF REGIONS: 5
- NUMBER OF AGENCIES ON THE DATABASE: 38
- NUMBER OF REGULATIONS: 302
- NUMBER OF REGULATION CATEGORIES: 7
- NUMBER OF APPLICATIONS: 100
- NUMBER REGISTERED TO USE DATABASE: 200+
- ANNOUNCEMENTS SENT OUT: 9 YTD

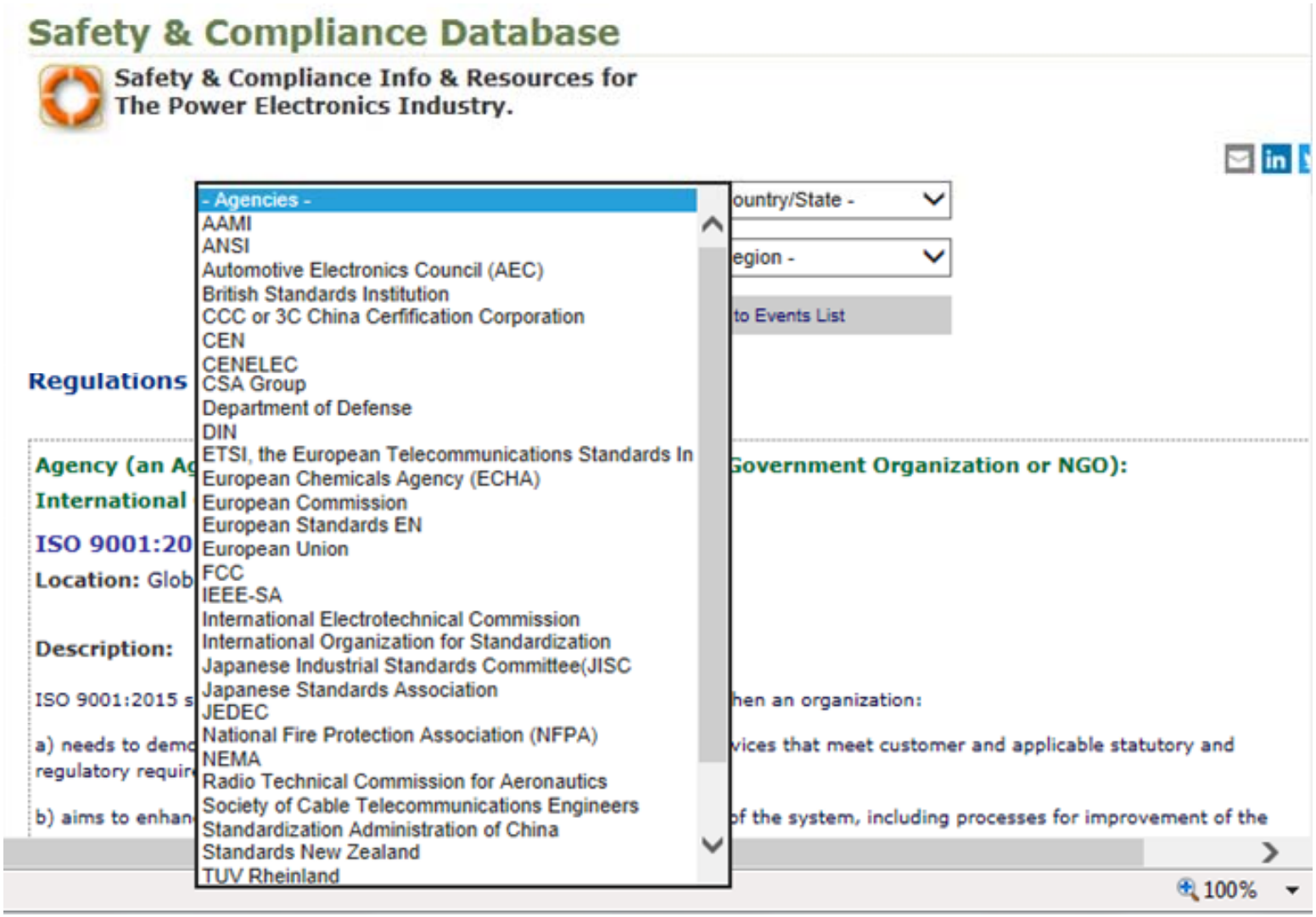
How to access

- Located on the PSMA website's homepage
  - URL: http://www.psma.com/technical-forums/safety_standard/safety_standard_database
  - Non-members:

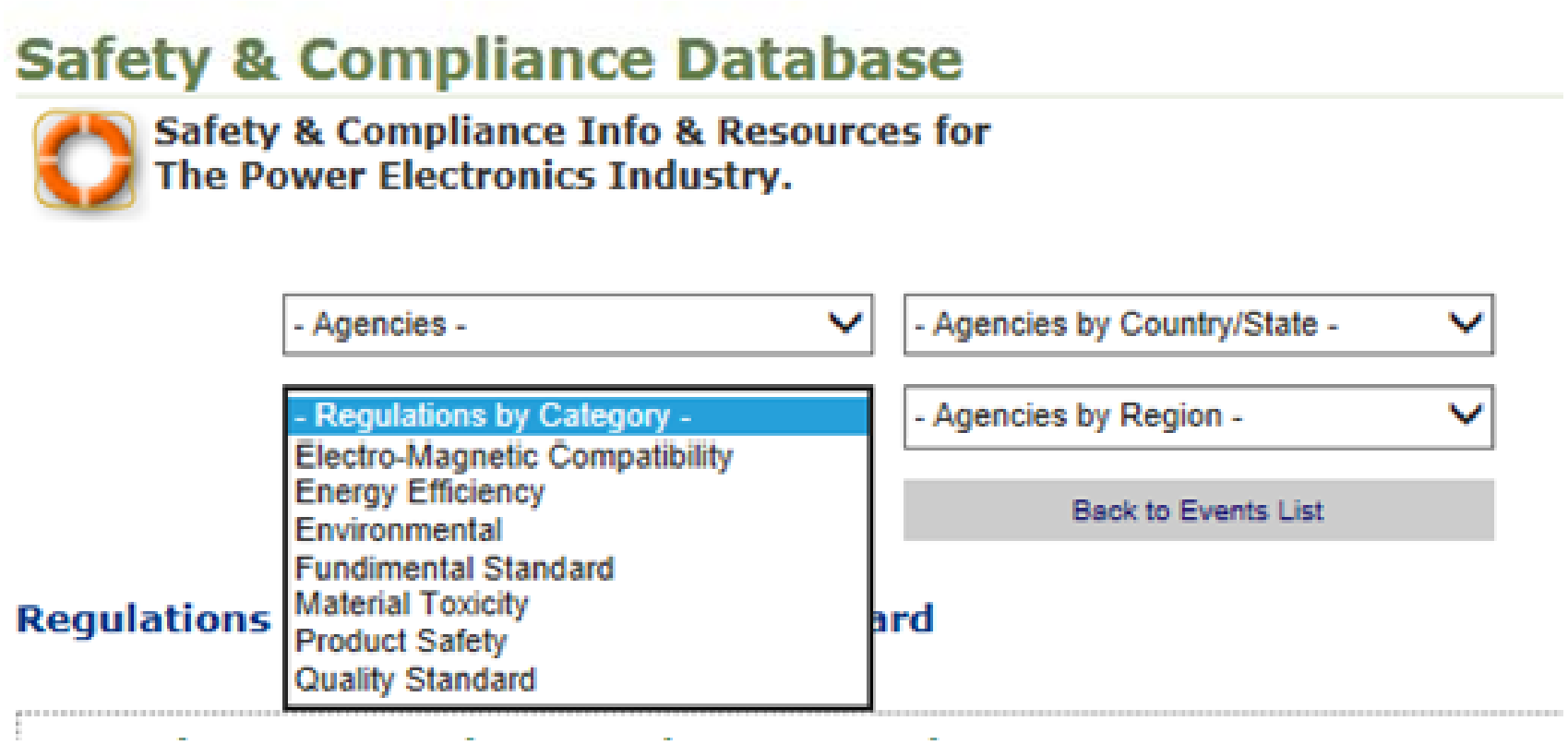
    Already registered for the Efficiency Database?
    - Please use the login in the left column

      Please note that registration requires email confirmation and moderator approval. If you registered recently and are having difficulty logging in, you might need to complete registration or wait for moderator approval

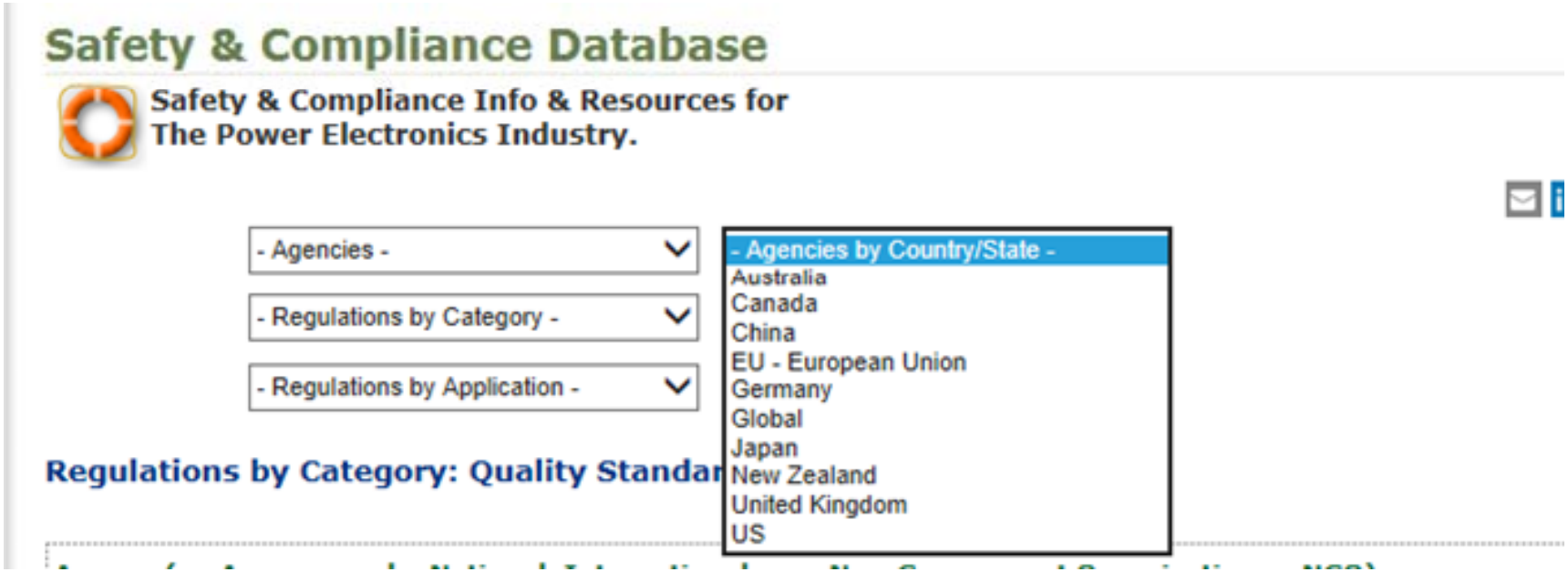
Select from “Agencies”



Select from “Regulations by Category”



Select by country



Homepage selections

Safety & Compliance Database

Safety & Compliance Info & Resources for The Power Electronics Industry.

- Agencies -
- Agencies by Country/State -
- Regulations by Category -
- Agencies by Region -
- Regulations by Application -
- Back to Events List

Regulations by Category: Quality Standard

Agency (an Agency can be National, International, or a Non-Government Organization or NGO):

International Organization for Standardization

ISO 9001:2015 - Start year: 2015

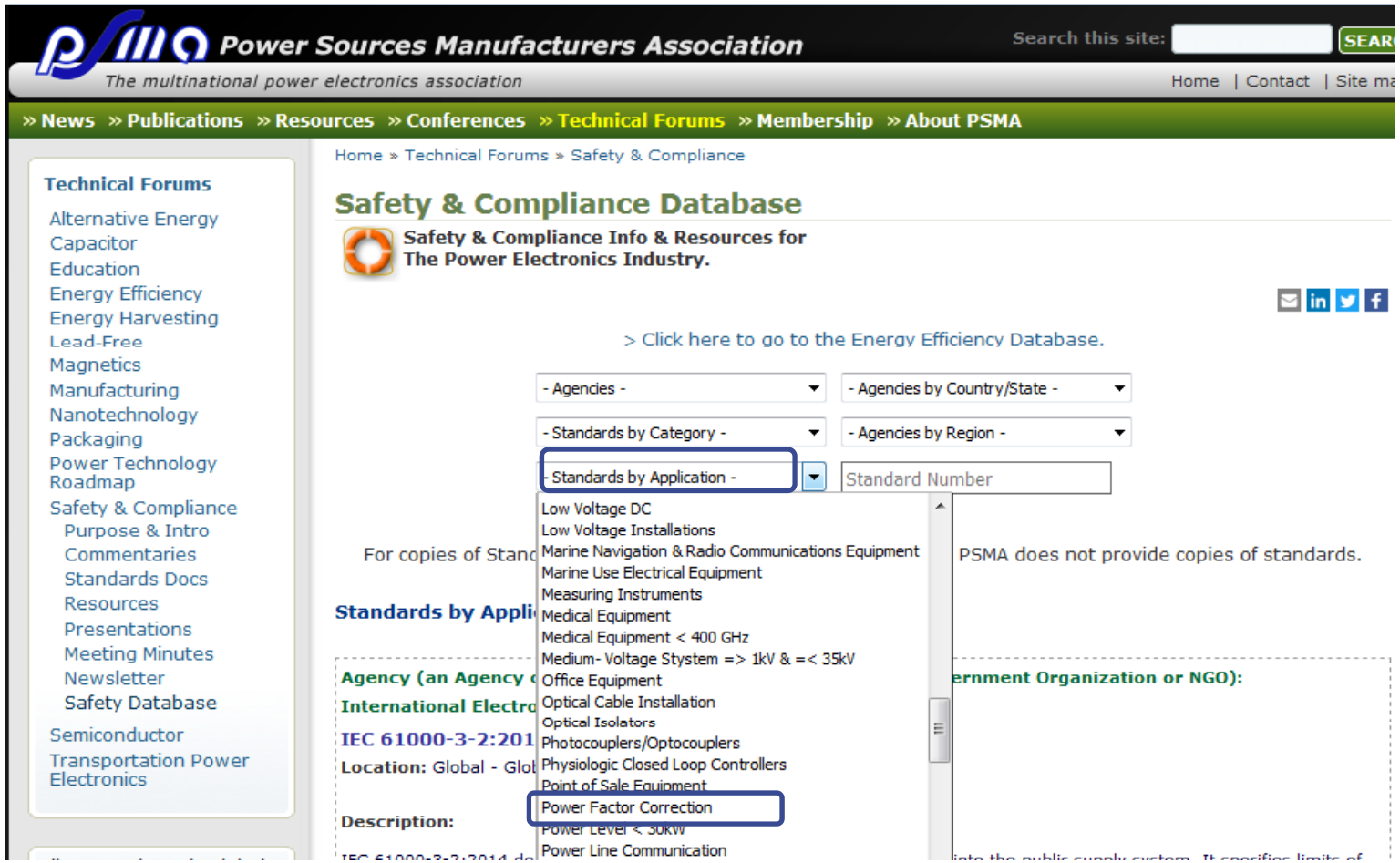
Location: Global - Global

Description:

ISO 9001:2015 specifies requirements for a quality management system when an organization:

a) needs to demonstrate its ability to consistently provide products and services that meet customer and applicable statutory and regulatory requirements, and

By Application



Link to standards for purchase

Standards by Number: "IEC 61000-3-2:2014 "

Agency (an Agency can be National, International, or a Non-Government Organization or NGO):
International Electrotechnical Commission

IEC 61000-3-2:2014 - Start year: 2014
Location: Global - Global

Description:

IEC 61000-3-2:2014 deals with the limitation of harmonic currents injected into the public supply system. It specifies limits of harmonic components of the input current which may be produced by equipment tested under specified conditions. It is applicable to electrical and electronic equipment having an input current up to and including 16 A per phase, and intended to be connected to public low voltage distribution systems. Arc welding equipment which is not professional equipment, with input current up to and including 16 A per phase, is included in this standard. Arc welding equipment intended for professional use, as specified in IEC 60974-1, is excluded from this standard and may be subject to installation restrictions as indicated in IEC/TR 61000-3-4 or IEC 61000-3-12. The tests according to this standard are type tests. Test conditions for particular equipment are given in Annex C. For systems with nominal voltages less than 220 V (line-to-neutral), the limits have not yet been considered. This fourth edition cancels and replaces the third edition published in 2005, Amendment 1:2008, Amendment 2:2009 and Corrigendum of August 2009.

Notes:

This edition includes the following significant technical changes with respect to the previous edition:
- a clarification of the repeatability and reproducibility of measurements;
- a more accurate specification of the general test conditions for information technology equipment;
- the addition of optional test conditions for information technology equipment with external power supplies or battery chargers;
- the addition of a simplified test method for equipment that undergoes minor changes or updates;
- an update of the test conditions for washing machines;
- a clarification of the requirements for Class C equipment with active input power ≤ 25 W;
- an update of the test conditions for audio amplifiers;
- a clarification of the test conditions for lamps;
- an update of the test conditions for vacuum cleaners;
- the addition of test conditions for high pressure cleaners;
- an update of the test conditions for arc welding equipment;
- the reclassification of refrigerators and freezers with variable-speed drives into Class D;
- and the addition of test conditions for refrigerators and freezers.

Standards categories:

· Electro-Magnetic Compatibility

Links:

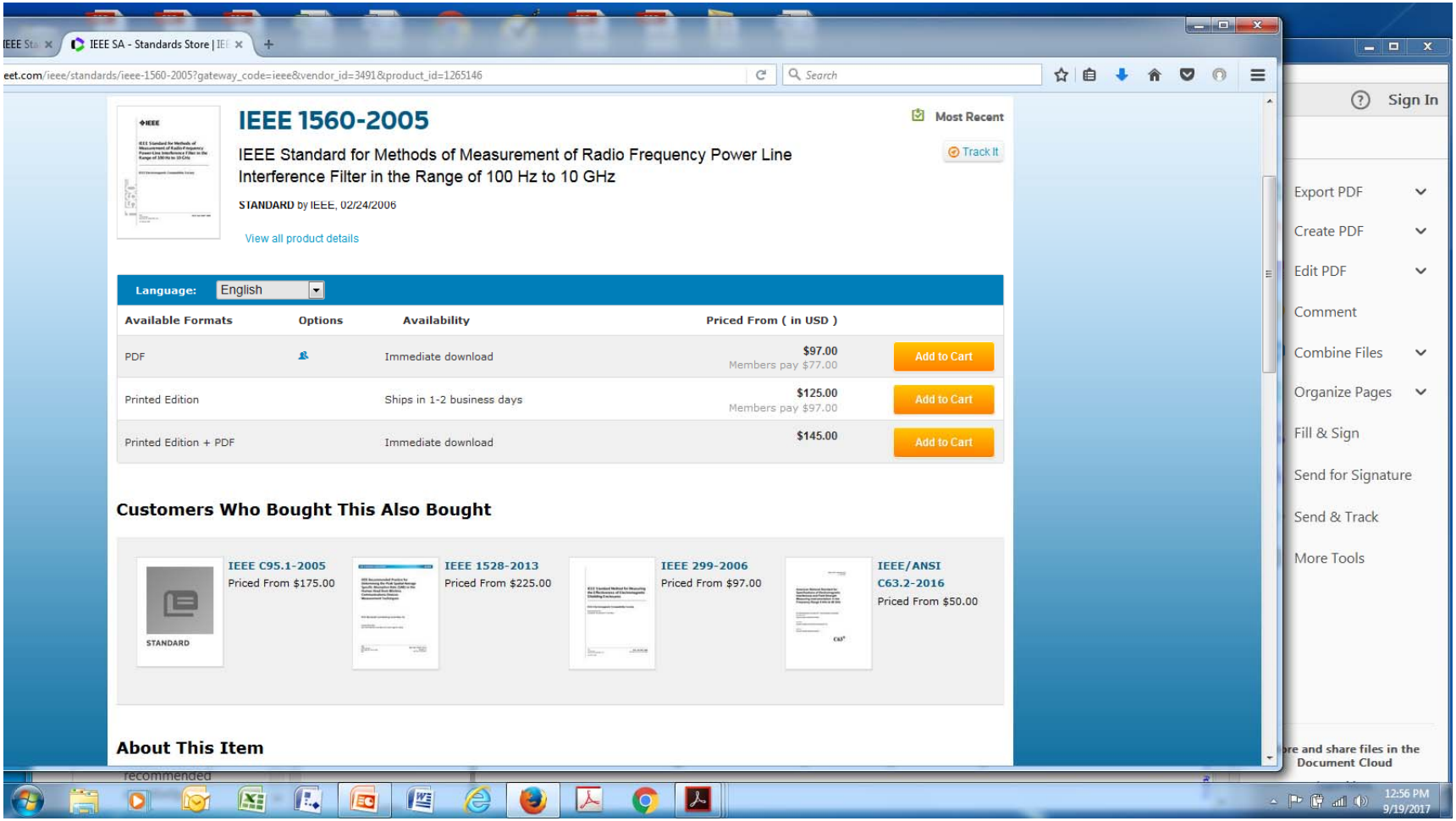
· Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)

Power Sources Manufacturers Association

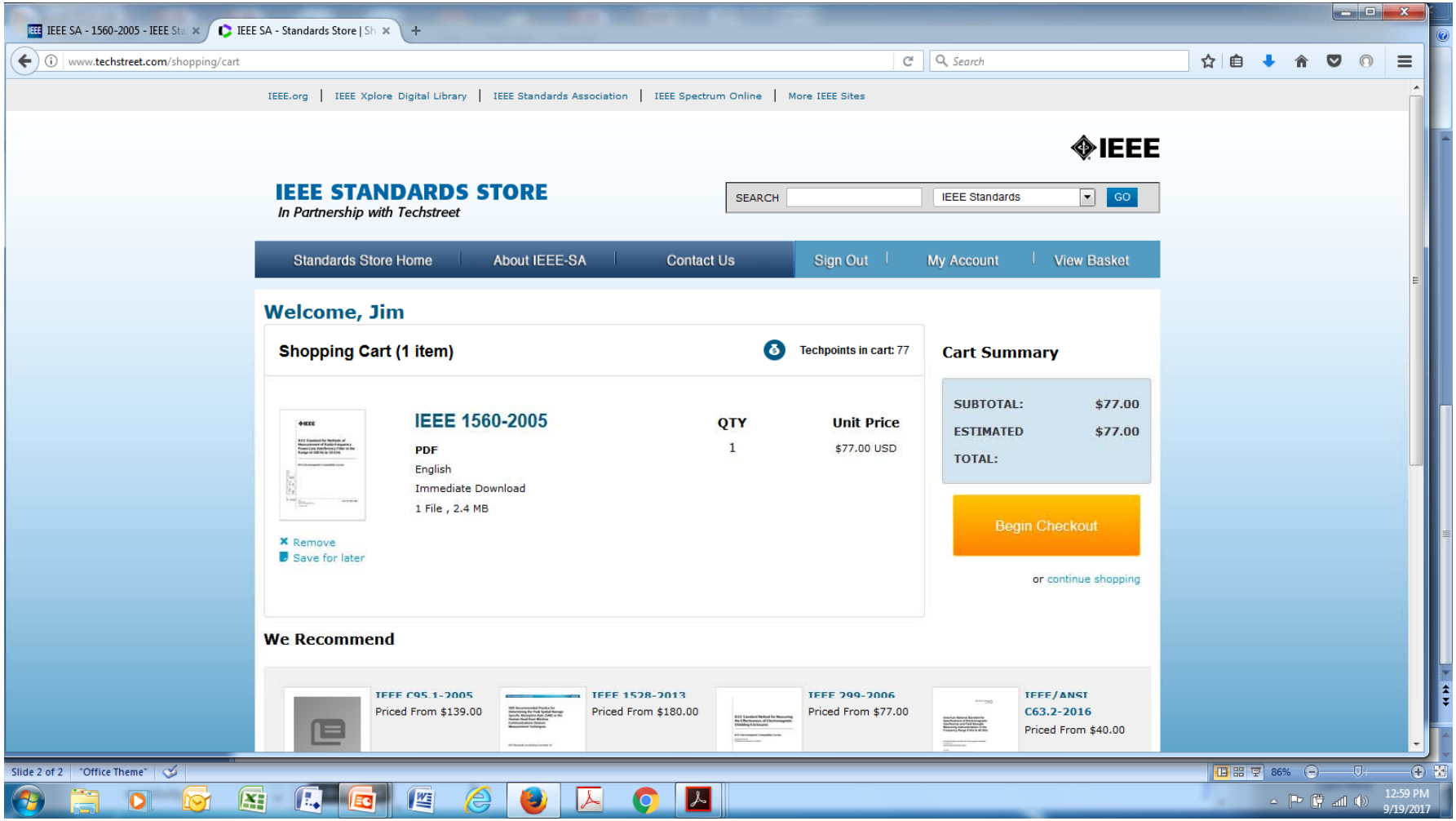
IEEE

PSES Product Safety Engineering Society

Purchase Standard



Discount Price



Example Email

From:

Sent: Mon 12/5/2016 1:48 PM

To:

Cc:

Subject: FW: ANSI Standards Action - December 2, 2016

To: Members of the PSMA Safety and Compliance Committee and those having access to the PSMA Safety & Compliance Database (SCDB)

Here is the latest from ANSI. For your information, we will post this in the Safety & Compliance Database (SCDB).
This is a selected forwarded email as an industry service to you from the Power Sources Manufacturers Association (PSMA). Should you wish to opt out please click on the next link? Do not contact the agency shown in the forwarded email.

[I want to Opt Out]

From: Harvey Rosenfeld [mailto:HROSENFE@ansi.org]
Sent: Friday, December 02, 2016 12:18 PM
To: STANDARD-ACTION@MAILLIST.ANSI.ORG
Subject: ANSI Standards Action - December 2, 2016

Dear Standards Action Reader:

The latest issue of ANSI Standards Action (Volume 47, No. 49, December 2, 2016) is now available for download from ANSI's website.

All 2016 issues of Standards Action can be accessed by clicking on the "Library" button on the ANSIOnline home page, clicking on the "Read Standards Action" icon on the Welcome page, and selecting "Current Standards Action issues" from the menu on the Standards Action page. You may also access this week's issue by clicking on the link below:

ANSI Standards Action, December 2, 2016

News Items from ANSI's "What's New?" Newsletter

What's New?

What's New? is a weekly electronic newsletter produced and distributed free of charge to the members and constituents of the American National Standards Institute (ANSI). For a complete listing of ANSI news and events, visit ANSI Online. >>>

Receive email announcements

- Standards activity announcements
  - Click on news from agencies (IEC, FCC, Standard Council of Canada, NFPA, ETSI, BSI UK, IEC, ECHA, etc.)
- Sign-up right away
  - Announcements will immediately be sent to you
  - Either daily or weekly depending on announcement

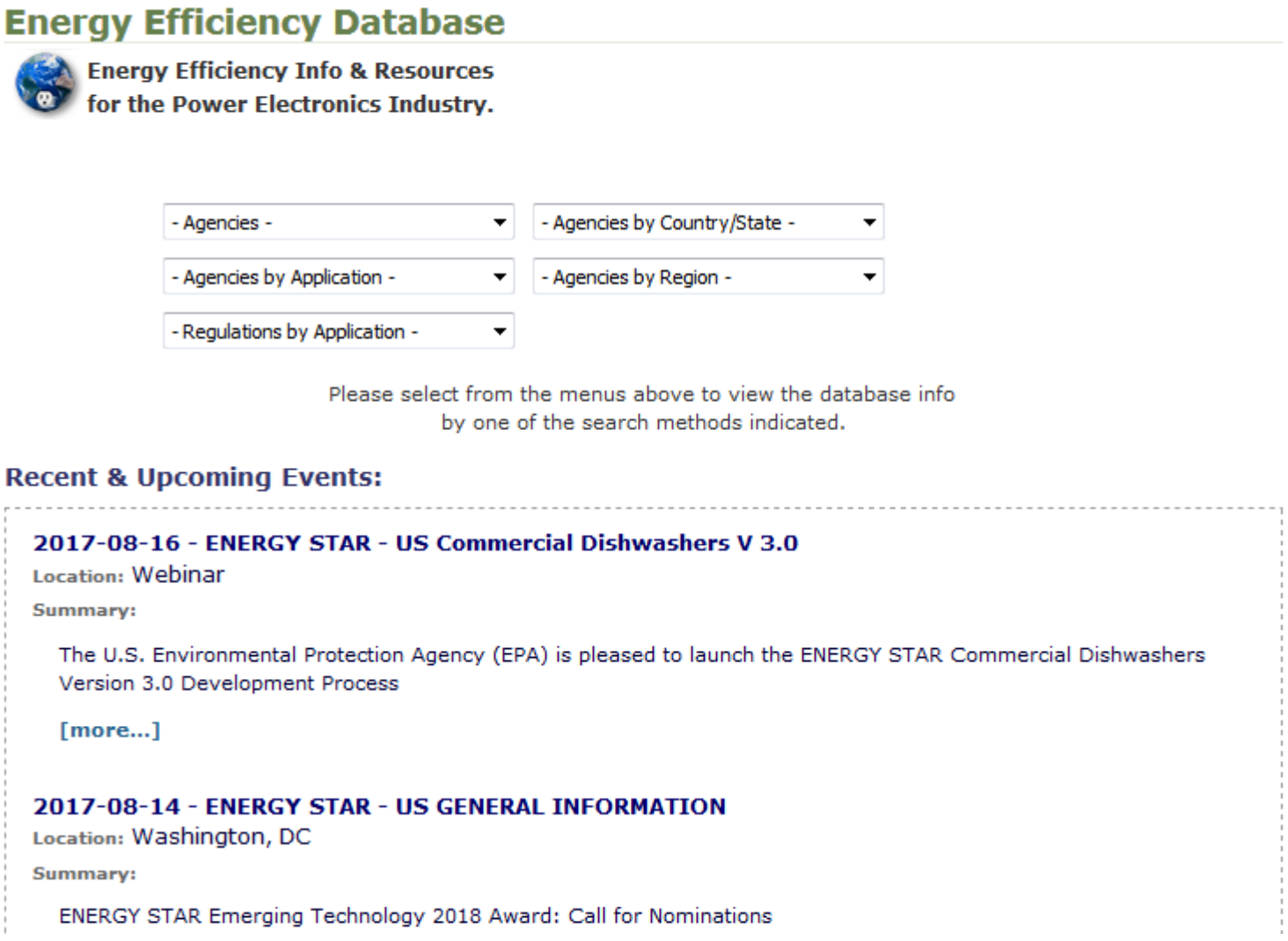
Improvements in the works

- Ability to search for a standard (regulation) number
- Adding ability to do nested searching so that it is easier to find applications within a listing of agency regulation

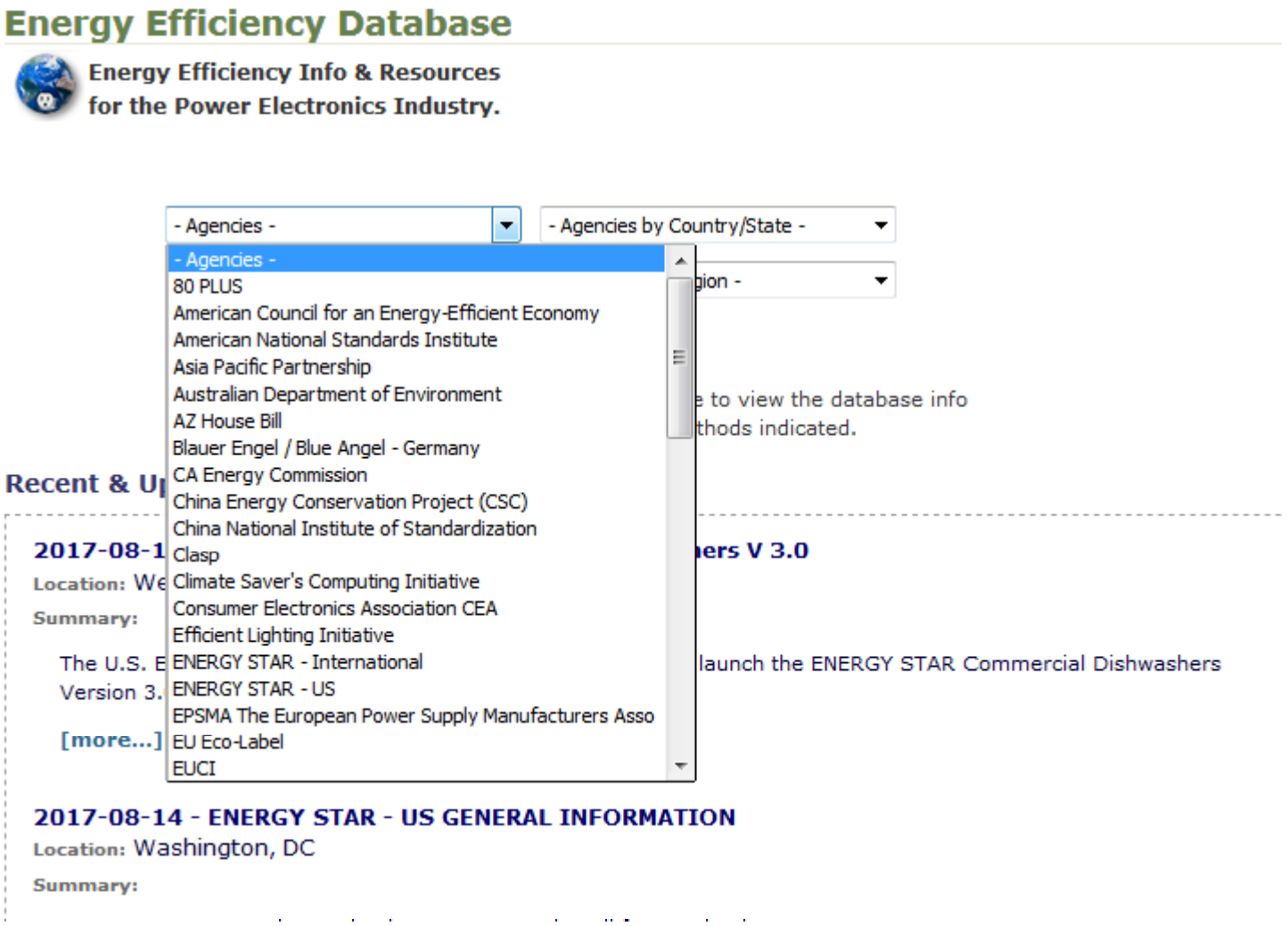
PSMA Energy Efficiency Database

- NUMBER OF REGIONS: 5
  - Americas, Asia Pacific, Europe, Japan, Global
- Number of Agencies: 50
- Agencies by Country or State: 33
- Agencies by Applications or Categories: 37
- Number by Applications: 36
- NUMBER REGISTERED TO USE DATABASE: 176
- ANNOUNCEMENTS SENT OUT: 9 YTD

Energy Efficiency Database

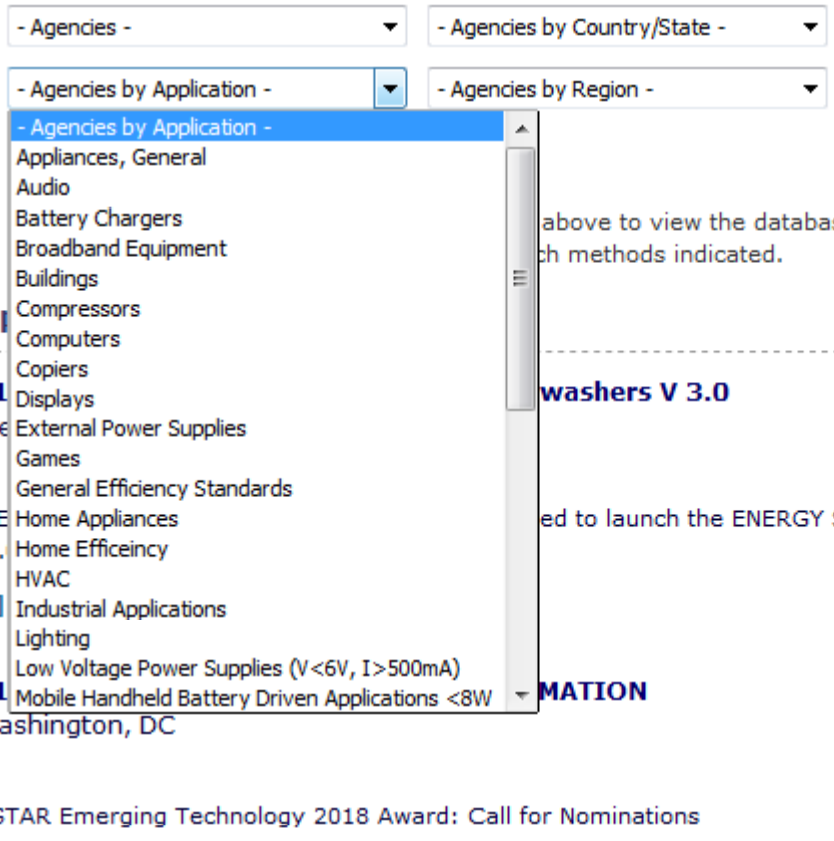


Energy Efficiency Database

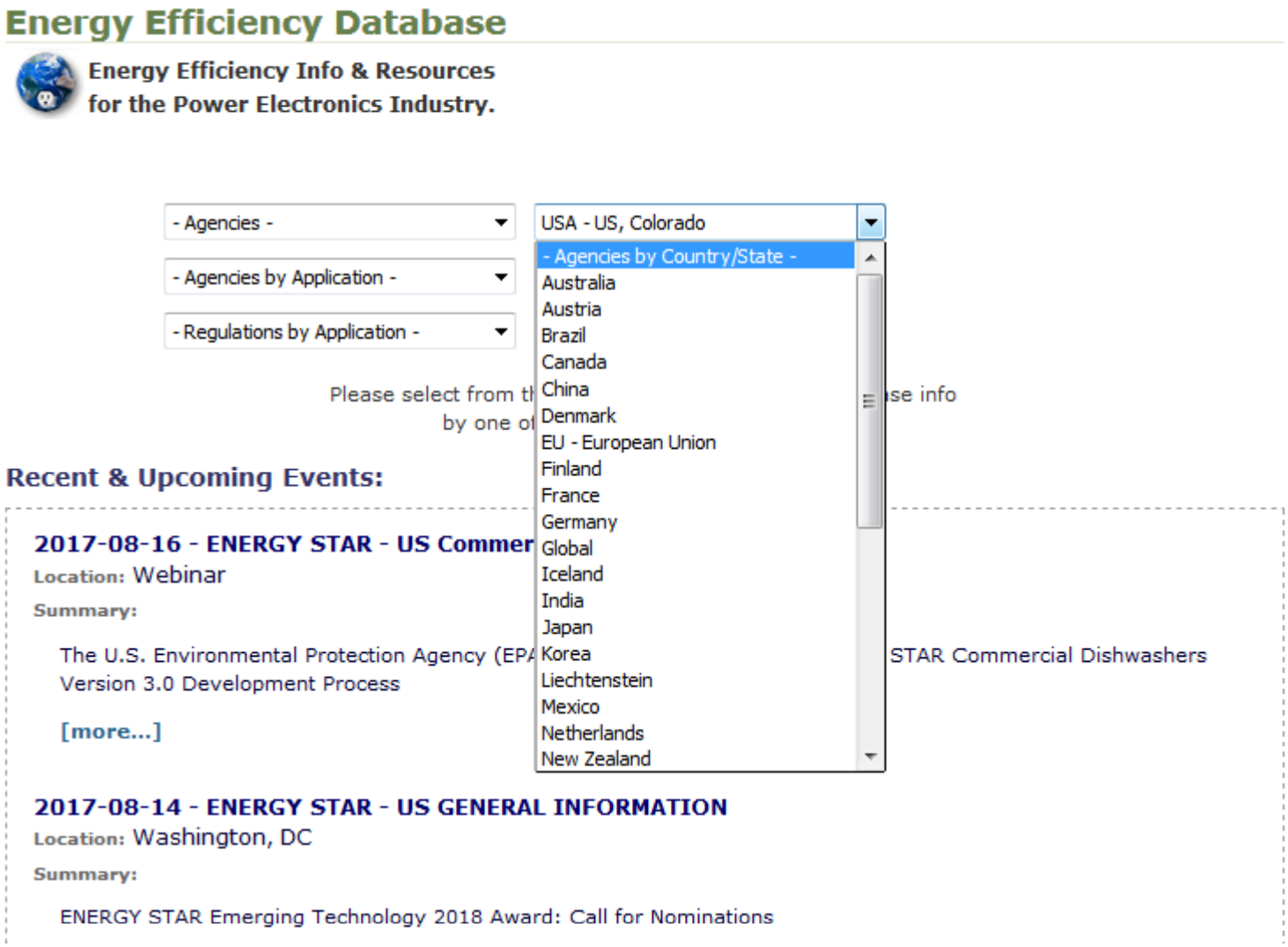


Energy Efficiency Database

Energy Efficiency Info & Resources for the Power Electronics Industry.



Energy Efficiency Database cont.



Energy Efficiency Database cont.

Home » Technical Forums » Energy Efficiency

Energy Efficiency Database

Energy Efficiency Info & Resources for the Power Electronics Industry.

- Agencies -
- Agencies by Country/State -
- Agencies by Application -
- Agencies by Region -
- Regulations by Application -

- Agencies by Region -
Americas
Asia/Pacific
Europe
Japan
Global

Agencies by Country/State: USA - US, Col

United States (DOE)

United States Department of Energy

Power Sources Manufacturers Association

IEEE

PSES Product Safety Engineering Society

Other Resources

- Compliance and Risks : http://www.complianceandrisks.com
- In Compliance : http://incompliancemag.com/
- IEEE EMC Society: http://www.emcs.org/
- IEEE Product Safety Engineering Society: http://ewh.ieee.org/soc/pses/
- FCC: www.fcc.gov
- US Govt CFR: http://www.ecfr.gov/cgi-bin/ECFR?page=browse
  - e-Code of Federal Regulations
- C63: http://www.c63.org/index.htm
- IEEE Standards Association: http://www.standards.ieee.org
- CENELEC: www.cenelec.eu
- IEC: www.iec.ch
- ANSI: www.ansi.org
- All UL standards: http://ulstandards.ul.com/standards-catalog/

UL Update


Power Sources
Manufacturers Association
The Multinational Power Electronics Association
[CSA/UL/EN]
IEC 62368-1
Overview
Tom Burke, P.E.
Principal Product Safety Engineer,
Consumer & Enterprise Tech Equipment
UL LLC
thomas.m.burke@ul.com
June 7, 2017
UL AND THE UL LOGO ARE TRADEMARKS OF UL LLC © 2017. ALL RIGHTS RESERVED

UL update on IEC 62368

Publication History/Status

❖ **Formal TC108 effort on 62368-1 began in year 2002.**

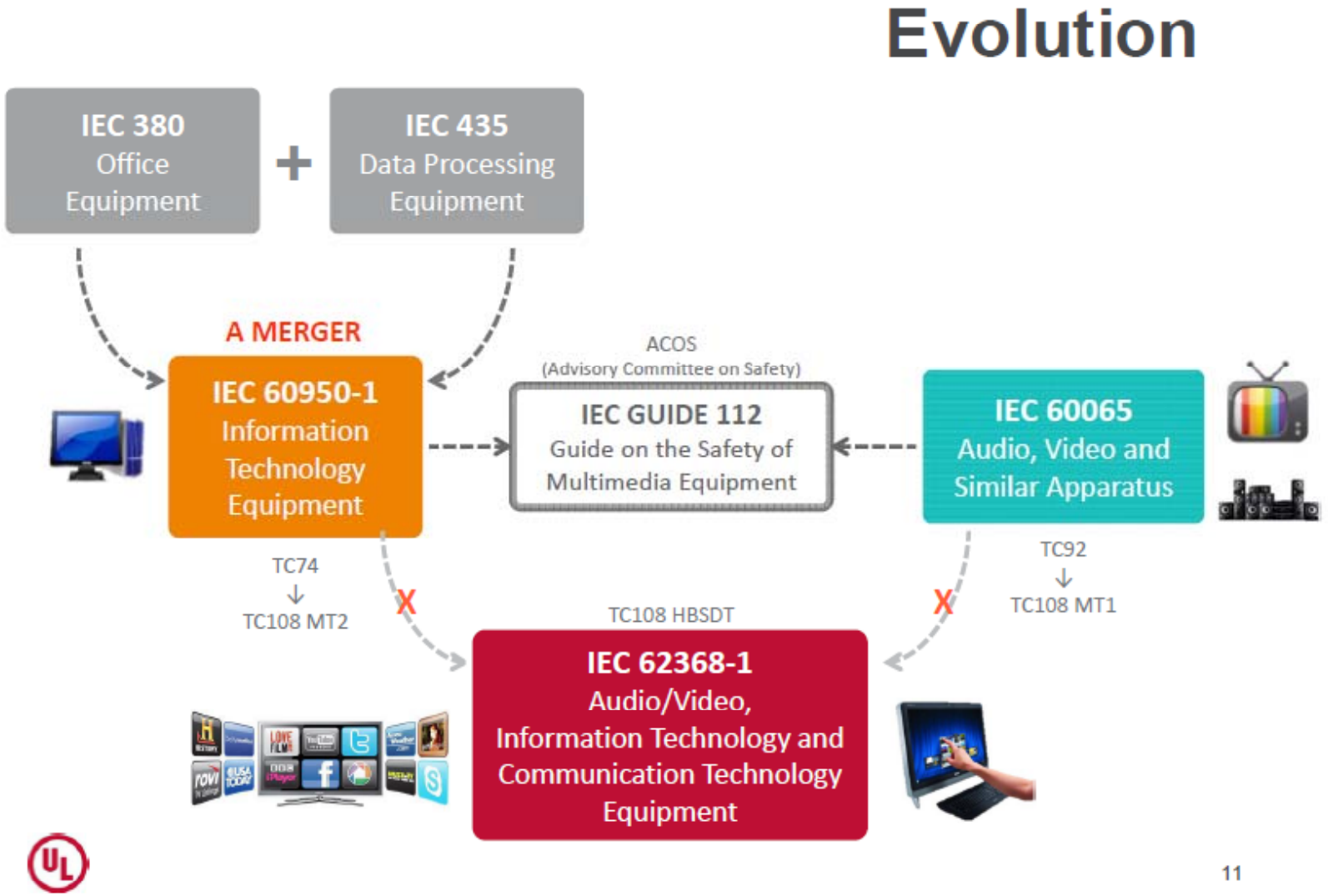
Edition No. 1

- IEC 62368-1, Ed. 1: January 2010
- EU: Ed. 1 not adopted.
- *CAN/US: CSA/UL 62368-1, Ed 1: February 2012*

Edition No. 2

- IEC 62368-1, Ed. 2: February 2014
- *EU: EN 62368-1, Ed 2: August 2014*
- *CAN/US: CSA/UL 62368-1, Ed 2: December 2014*

UL update on IEC 62368-2



11

UL update on IEC 62368-3

Clause 9 - Thermal-burn injury (cont.)

9.2.6 Touch temperature levels

Table 38 – Touch temperature limits for accessible parts

	Accessible parts [a]	Maximum temperature (T_{max}) °C			
		Metal [f]	Glass, porcelain and vitreous material	Plastic and rubber	Wood
TS1	Handles, knobs, grips, etc., and external surfaces either held, touched or worn against the body in normal use (> 1 min) [b, e]	48	48	48	48
	Handles, knobs, grips, etc., and external surfaces held for short periods of time or touched occasionally (> 10 s and < 1 min) [c]	51	56	60	60
	Handle, knobs, grips etc., and external surfaces touched occasionally for very short periods (>1 s and < 10 s) [c]	60	71	77	107
	External surfaces that need not be touched to operate the equipment (<1 s) [c]	70 [d]	80 [d]	94 [d]	140
TS2	Handles, knobs, grips, etc., and external surfaces held in normal use (> 1 min) [c]	58	66	68	68
	Handles, knobs, grips, etc., and external surfaces held for short periods of time or touched occasionally (> 10 s and < 1 min) [d]	61	66	70	70
	Handle, knobs, grips etc., and external surfaces touched occasionally for very short periods (> 1 s and < 10 s) [d]	70	81	87	117
	External surfaces that need not be touched to operate the equipment (< 1 s) [d]	80 (100) [e]	90 (100) [e]	104	150
TS3	Higher than the TS2 limits				

Typically lower than allowed by 60950-1, but temps taken @ 25 C ambient, with no Tma (per IEC Guide 117 research basis) …

Typical metal encased SMPS …

UL update on IEC 62368-4

Ed. No. 3 of IEC 62368-1: Anticipated Changes

- **IEC 60950-21** (RFT) requirements being incorporated into new ***IEC 62368-3, DC power transfer through communication cables or ports***, with expansion to cover both **RFT** & **USB/PoE/etc** interfaces…

Thank you

Jim Spangler
jim.spangler@ieee.org
847-961-8588