

The Minnesota Chapter IAEI will hold its Annual Meeting at 4:30 January 3rd in conjunction with the 2018 Annual Institute for Building Officials.



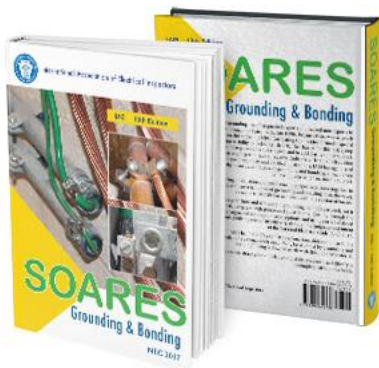
UNIVERSITY OF MINNESOTA
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COLLEGE OF CONTINUING EDUCATION

The Electrical Section of the Annual Institute for Building Officials January 3 and 4, 2018

The Annual Institute for Building Officials provides continuing education opportunities for code officials and inspectors from the building, electrical, fire, housing, mechanical, elevator, and plumbing fields as well as permit technicians. Institute sessions offer opportunities to learn about:

- Minnesota Administrative Rules
- National codes and amendments
- useful approaches for inspections
- best practices for code administration
- innovative products in the marketplace
- professional development skill enhancement



On **Day One** of the Electrical Section, Keith Lofland, frequent speaker at the AIBO, offers an 8-hour presentation according to the Soares Book on Grounding. Registration fee includes parking, breaks and meals as well as a copy of the 2017 Soares Book (a \$65 value).

Cutting through the confusion of industry jargon and common misconceptions, and using correct defined terminology, Keith will use the book to guide attendees through the language and intent of the National Electrical Code, NEC-2017. In accordance with IAEI's hallmark of systematic explanations, the Soares contains detailed illustrations and photos of actual installations enhance each topic.

As chief author of the 2017 edition, Keith will explain how and why certain grounding methods are used, balancing his presentation with photos and illustrations.

Day Two of the Electrical Section includes:

- *"Code Considerations for Energy Storage Systems"* presented by Jeff Fecteau
- *"POE: Combining Electric Power with Data"* presented by Tim McClintock
- *"Understanding Electric Shock Drowning"* presented by Ed Lethert
- *"Insights on Variable Frequency Drive Technologies"* presented by Todd Olmshank



L. Keith Lofland is the Director of Education, Codes, and Standards for IAEI. He represents IAEI as the Chair of Code-Making Panel 9 for the National Electrical Code. He serves on NFPA's Electrical Section Executive Committee and is a member of UL's Electrical Council. He is the principal contributor to several IAEI publications including Analysis of Changes, Soares Grounding and Bonding, and One- and Two-Family Dwelling Electrical Systems. In his position with the International Office of IAEI, Keith spent 16 years with the City of Garland (Texas) serving as their chief electrical inspector during a 21-year career as an electrical inspector. Keith holds a master electrician license from the State of Texas. He served as chairman of the Texas Chapter of IAEI and as the secretary/treasurer for the Texas Chapter-IAEI for 10 years.



8:00 to 9:45 Jeff Fecteau (18158 W Campbell Ave, Goodyear AZ 85395 (952) 838-5453) is the technical lead within UL Regulatory Services responsible for alternative energy systems as well as a licensed building official, electrician, inspector and nationally recognized code expert. Jeff has been in the electrical industry for more than 28 and has provided training to inspector and contractor organizations, including 8 years as an adjunct faculty instructor at two community colleges. He is involved with the Interstate Renewable Energy Council and teaches solar PV installation for the International Association of Electrical Inspectors. Jeff has authored several technical papers on PV equipment such as inverters and rapid shutdown methods. Jeff

is an approved CEU instructor in Arizona, Texas, Minnesota, Louisiana, Michigan, Florida, South Carolina, and North Carolina.

With the growth of alternative energy, the quest for viable and efficient energy storage systems is evolving at an accelerated pace. This course provides the ability to recognize the installation and code requirements of these new technologies and delivers a better understanding of NEC Article 706, “Energy Storage Systems”.

10:00 to 11:45 Tim McClintock is an expert in the electrical industry. Prior to joining the technical staff at NFPA, he served as the Chief Building Official and Electrical Inspector for the Wayne County Building Department in Wooster, Ohio for 16 years. Before that, he worked for nine years as an electrician for McClintock Electric Incorporated. McClintock is actively involved with the International Association of Electrical Inspectors (IAEI), where he currently serves as the Membership Chair for the Western Section and International Membership Committee of IAEI. He also served as Chair of NFPA’s Technical Committee on Electrical Equipment Evaluation, which is responsible for NFPA 790, *Standard for Competency of Third-Party Field Evaluation Bodies* and NFPA 791, *Recommended Practice and Procedure for Unlabeled Electrical Equipment*.



This program explores power-over ethernet (POE), a technique which allows a single cable to provide both data connection and power to wireless access points, IP cameras, VoIP phones, etc. The IEEE Standards body is currently looking at ways of increasing the amount of power transmitted and will soon recognize Type 3 with power up to 55 watts, and Type 4 with power limitations of up to 100 watts. This expansion of the technology for these systems involves numerous National Electrical Code concerns for the contractor, installer, and electrical inspector.



12:30 to 2:15 Ed Lethert has more than 57 years of experience working with electrical and electronic systems. Now retired, Ed describes himself as an Electric Shock Drowning Safety Specialist. He is actively involved with the Electric Shock Drowning Prevention Association promoting awareness of ESD, and encouraging proactive mitigation of the conditions that cause ESD. He is also helping marina operators in Minnesota and Wisconsin address ESD-related issues associated with the use of electricity in their facilities, and is the author of the paper, "Marina Ground Fault Leakage Current and the NEC" that was featured in Mike Holt's newsletter this past year.

Ed is a member of the United States Power Squadrons and the Minnetonka Power Squadron, and has received commander's awards at both the squadron and district level for his work on electric shock drowning issues.

This presentation covers the science of Electric Shock Drowning (ESD) and examines the new requirements for marinas in the 2017 National Electrical Code. Because ESD is a fresh-water phenomenon, our lakes and rivers which are predisposed to these conditions, knowledge of these circumstances is especially applicable. Ed explains why ES) requires proactive mitigation of the conditions that cause ESD.



2:30 to 4:00 Todd Olmshank started as an apprentice electrician following trade school, became a licensed journeyman in 1991 and got his class A master electrician license in 1992. Todd worked for IBEW Local 292 for 17 years, the last 10 years concentrating on variable frequency drives and controls.

In 2004, he accepted a position as a product rep for a frequency drive manufacturer where he specialized in the HVAC market. He recently joined a water/wastewater treatment firm where he works with engineers on projects in the municipal market, providing solutions to complex situations.

Variable Frequency Drives can be mysterious and a challenge to properly install and inspect. This program illustrates how to accurately read and interpret a motor nameplate to select a suitable VFD and the examines the electrical code considerations for installers, contractors, and inspectors.