

WEDNESDAY, MARCH 7

8:00 a.m. - 12:00 p.m.	Code Requirements for the Layout and Design of Fire Alarm Systems	Timothy G. Pool, PE, RCDD, ESI 7011, Director of Electrical Engineering, Principal, Tec Inc.	4 credits / OCILB, PDH (Code)
	Fire Alarm system technology has advanced over the past several years and now includes addressable microprocessor based technology which can perform self testing and remote reporting. This course will cover specific code requirements of fire alarm systems in various occupancies and is tailored for engineers and contractors who design or install Fire Alarm Systems.	Pool has more than 25 years experience as an Electrical Engineer designing electrical systems, information technology systems and industrial/process design. In his role as Director, he manages the electrical engineering staff, serves as a technical resources providing design guidance as needed, and is actively involved in completing the engineering of power distribution, lighting and control systems. A Registered Communications Distribution Designer, Pool has designed technology infrastructures for libraries, educational institutions and healthcare facilities. Furthermore, he is a licensed Electrical Safety Inspector with the State of Ohio and a subject matter expert in National Electrical Codes and National Fire Codes. When not in the office, he is often presenting as an instructor with the Electrical League of Ohio.	
8:00 a.m. - 11:00 a.m.	Update of Changes for the 2018 NFPA 70E	Steve Abbott - Stark Safety Consultants	3 credits / OCILB, PDH (Code)
	NFPA 70E for work practices is designed to help workers avoid injury from a release of electrical energy, and prevent or minimize exposure to all widely recognized electrical hazards. This course covers the expected changes to the 2018 edition, and is designed be used as a planning tool for preparing your electrical safety program for the highly anticipated upcoming edition.	Steve Abbott is an electrical safety trainer, Arc flash study project coordinator/manager and provides electrical safety audits, training, policy and procedure writing and related electrical safety consulting services to clients. He a member of the Joint Electrical Apprenticeship Committee NFPA 70E Train the Trainer courses, NJATC NFPA 70E National Advisory Committee and NECA NFPA 70E Incident Energy Task Group, American Society of Safety Engineers and National Safety Council. Abbott has B.A. from Muskingum College.	
8:00 a.m. 10:00 a.m.	Professional Ethics in Engineering	John F. Greenhalge, State of Ohio	2 credits / PDH
	This presentation will cover Ohio's Code of Ethics for Professional Engineers and Surveyors [Ohio Administrative Code 4733-35] and discuss some of the most common ethical violations investigated by the Board. This program will fulfill the newly enacted requirement in House Bill 236 requiring that professional engineers and surveyors complete at least two hours of continuing professional development on professional ethics or rules relevant to the practice of engineering or surveying each biennial renewal period.	John F. Greenhalge is the Executive Director of the Ohio State Board of Registration for Professional Engineers and Surveyors. He has been with the Board since 1998, previously serving as the Board's Enforcement Supervisor and as the Assistant Executive Director. Prior to joining the Board, he worked as an investigator for the Franklin County Prosecuting Attorney's office and as a loss prevention and human resources investigator for Sears Roebuck & Co. John has a Bachelor of Science degree in Business Administration and a Master's of Business Administration degree from Ashland University. Greenhagle has served on numerous national committees for the National Council of Examiners for Engineering and Surveying (NCEES) including the Committee on Law Enforcement, the NCEES Leadership Task Force and the Member Board Administrators Committee. He is a recipient of the NCEES Distinguished Service Award for outstanding service to the Central Zone, NCEES and the engineering and surveying profession.	
9:00 a.m. - 10:00 p.m.	Managing LED Luminaire Costs: Correct Specification Can Reduce Your Cost	Kristen E Mallardi, LC, MIES, Specification Solutions Manager for Acuity Brands	1 AIA, LU HSW
	The general perception in today's marketplace is that the LED luminaire costs are high. This session will examine the reasons behind this perception and discuss how some of those costs can be mitigated through well-written specifications and what one might expect in specification.	Kristen E Mallardi, LC, MIES, Specification Solutions Manager for Acuity Brands is a 10-year industry veteran. She has spent 6 years in leadership roles in the IES Cleveland Section and currently serves as IES District 8 Chair. Kristen is a member of the joint IES/NALMCO Maintenance Committee and is also a member of the newly formed IES Rules Committee.	
9:00 a.m. - 4:00 p.m.	BICSI North Central Regional Meeting	Chris Scharrer, RCDD, NTS, OSP - BICSI U.S. North-Central Region Director	5 BICSI CECs
	Presentations on the newest technologies in the low voltage systems market. Lunch and manufacturers on hand to teach about products.	Various speakers will present throughout the day.	\$35 Fee

10:30 a.m. - 12:00 p.m.	The Effect of Light on Health and Well Being: Basics and Applications	Mariana Figueiro PhD., Director - The Lighting Institute Research Center (LRC) and Professor of Architecture at Rensselaer Polytechnic Institute	1 AIA, LU HSW, PDH
	Biological rhythms that repeat approximately every 24 hours are called circadian rhythms. Light is the main stimulus that helps the circadian clock, and thus circadian rhythms, to synchronize with the 24-hour day. If lack of synchrony or circadian disruption occurs, we may experience decrements in physiological functions, neurobehavioral performance, and sleep. Lighting for the circadian system employs lighting design objectives that differ from those typically used in traditional architectural lighting design, and therefore, requires metrics that differ from those currently used by lighting designers. In this presentation, the limitations of current lighting metrics (e.g., CCT, lux) in specifying light for the circadian system will be discussed. Practical design solutions to increase the potential for circadian light exposure in buildings and new field data investigating the health effects of light will be discussed. The goal of this presentation is to provide attendees with new tools and metrics that will help them specify and apply effective lighting to improve our lighting in our living environments.	Mariana G. Figueiro, Ph.D., is Light and Health Program Director at the Lighting Research Center and Professor of Architecture at Rensselaer Polytechnic Institute. She conducts research on the effect of light on human health, circadian photobiology, and lighting for older adults. She is the author of more than 70 scientific articles in her field of research, along with the AARP-sponsored publication, <i>Lighting the Way: a Key to Independence</i> , which provides guidelines on lighting for older adults.	
12:00 p.m. - 9:00 p.m.	Electro Expo 2018 Trade Show	Visit the Trade Show for 3 hours, following the sign-in and sign-out process/	(Technology)
11:00 a.m. - 12:00 p.m.	Arc Quenching Technology and UL2748	Dan Hrcir, PE - Eaton Corp.	1 credit/ OCILB, PDH (Code)
	This presentation will cover the high level overview of industry standards; discuss what is Arc Quenching and its evolution; overview of UL2748 and UL2748A and implementation of Arc Quenching. The presenter will over an opportunity for questions and discussion.	Dan Hrcir manages the New Product Development team for Eaton's Low Voltage Switchgear Assemblies business. Hrcir has 20 years of experience in the design and manufacturing of electrical distribution equipment. He is an IEEE Senior member and has been the chairman of several C37 series standard revisions. Hrcir currently is a member of the Standard Technical Panel (STP) for UL2748, UL2748A, and UL1558 and has several US Patents, all in the field of electrical distribution equipment. Hrcir holds a BS in Mechanical Engineering from Texas Tech University.	
12:00 p.m. - 4:00 p.m.	NEC 2017 Comprehensive Presentation of Changes and Updates	Paul Wilson Abernathy PE, Manager of Codes and Standards for Encore Wire	4 credits / OCILB, PDH (Code)
	This course will provide the most significant changes that have taken place to the 2017 National Electrical Code by Paul W. Abernathy, a code panel member of NFPA 70 (NEC) panels #5 and # 17. The main objective is to help educate electricians to the latest changes to the 2017 NEC and to help expand the attendees understanding and knowledge of the National Electrical Code.	Paul Wilson Abernathy graduated from the Charlottesville-Albemarle Technical Education Center with the distinct honor of being named the #1 student in the institutions history. Paul later earned the title of Virginia's youngest licensed electrician at the age of 18 and went on to become a Licensed Master Electrician. Paul also holds a BS in Engineering and Business Management and MS in Engineering. Paul has served as electrical engineer II for the City of Richmond, Virginia as well as code supervisor for the City of Alexandria, Virginia. He also served as the southern region electrical technical expert and manufacturers representative for the National Electrical Manufacturers Association (NEMA) in Arlington, Virginia. Paul is currently the Manager of Codes and Standards for Encore Wire where he serves as the technical expert on all electrically related subjects, such as wire and cable development, testing and code compliance education and the development of Encore Wire University. Paul is the author of the book "How to perform electrical inspections" along with many other industry publications and articles on the National Electrical Code, he served as a subject mater expert to the State of Texas from July 2014 to Feb 2017 on the development and creation of their various electrical licensing exams. Paul also serves on the National Fire Protection Associations (NFPA) Code Making Panel 5 and 17 for the development of the National Electrical Code [NEC]. Paul has held ICC Certifications as an electrical inspector; electrical plans examiner and commercial electrical inspector, building inspector, plumbing inspector and mechanical inspector along with being one of the first in the national to be awarded the title of Certified Master Inspector by the Certified Master Inspectors Board in Boulder, Co. Paul is the CEO & President of Electrical Code Academy, Inc. A corporation dedicated to providing electrical inspector training, electrician education, electrical consulting and expert knowledge of the National Electrical Code as well as serving the electrical industry as an industry expert for the wire and cable industry. Lastly, Paul has a long history of electrical education and develops his own training material, both written and graphics, as well as helping develop the corporate university concept at Encore Wire.	

1:00 - 3:00 p.m.	Power Quality: Making the Most of Your Energy	Mario Teti, Schneider Electric	2 credits / OCILB, PDH (Code)
	Upon completion of this presentation, attendees should be able to: Identify harmonics and how they are created on systems; Identify the effects of harmonics in electrical systems; Identify IEEE 519 standards; Identify conventional harmonic mitigation methods; Identify harmonics and how they are created on systems; Identify the effects of harmonics in electrical systems; Identify IEEE 519 standards and Identify conventional harmonic mitigation methods.	Mario Teti, Business Development Manager for Schneider Electric's Power Quality Power Solutions Group. Mario has worked for Schneider Electric for 18 years in the Power Quality field and over 25 years in the electrical industry. The Power Solutions group's main focus is North America for all Power Quality products including Power Factor Correction, Voltage Regulation and Harmonic Filtering.	
1:00 p.m. - 2:00 p.m.	ASHRAE 90.1-2010 Energy Standard for Buildings Except Low Rise Residential Buildings	Matt Priebe, Karpinski Engineering	1 credit / OCILB, PDH (Code)
	Ohio has officially approved adoption of ASHRAE 90.1-2010 starting January 1, 2017. This course will review the power and lighting updates now required in the 2010 version to properly comply with Ohio building energy use guidelines. To aid those in attendance, pictures and sketches will be presented using a PowerPoint presentation format. This class is intended to give contractors, engineers and designers an overview of the requirements of protection and grounding as contained in the articles of the National Electrical Code.	Matt Priebe is a senior project engineer at Karpinski Engineering, where he provides electrical team leadership. Priebe is one of Karpinski Engineering's K-12 schools experts. Among his projects are the recently-completed Lorain High School, the LEED-Gold certified Orrville High School, and the in-progress Cleveland Heights-University Heights High School. Matt also contributed to Cuyahoga County's new headquarters and Goodyear's new Global and North American Headquarters, both LEED-Gold certified. Having participated on several projects that used the 2010 edition of ASHRAE 90.1, he has had the opportunity to familiarize himself with the Standard and design to its requirements. Matt earned his Bachelor of Electrical Engineering from Cleveland State University. He joined Karpinski Engineering in 2006.	
1:00 p.m. - 2:00 p.m.	Interconnection Requirements for Wind Turbines and Solar Panels	Justin Price PE, Supervisor of Distribution System Planning and Protection. The Illuminating Company/FirstEnergy	1 credit / OCILB, PDH (Technology)
	Define the FirstEnergy policy, process, and technical requirements for the interconnection of generators to the FirstEnergy distribution system – emphasis on Ohio requirements. Details on the size and type of interconnection will be given as well as address issues that could develop on the distribution system for generators not properly interfaced. Review of the Distributed Generation Interconnection Application process for FirstEnergy's Ohio operating companies.	Justin Price is a Supervisor of Distribution Planning & Protection at FirstEnergy. He is responsible for corporate technical support and guidance for distribution circuit protection, power quality, var support, volt-var control, and distributed generation. He worked on the operations side as engineering support within the Toledo Edison Distribution Control Center for two years. Price was a Distribution Planning Engineer and Lead Power Quality Engineer for Toledo Edison for two years. Following that, he transitioned into his current group. Price holds a BS in Electrical Engineering from Purdue University and a MBA from the University of Toledo, received in 2006 and 2011 respectively. He is a registered professional engineer in the state of Ohio.	
2:00 p.m. - 3:00 p.m.	NEC: Protecting Critical Circuits from Fire and Life Safety Circuits	Mark, Hall, Pentair Thermal Management, Sr. Sales Manager, North America, Commercial Fire Rated Wiring Products	1 credit / OCILB, PDH (Code)
	This presentation will offer a discussion of applications for protecting critical circuits from fire; discussion of relevant NEC code articles – 517, 695, 700, 708, 728 (new in 2014), 760 and NFPA-72; review the options available for the protection of critical circuits (full explanation); learn the UL fire testing explanation for listing fire rated cables (UL 2196); discussion and update on the UL delisting of fire rated cables – Who's now approved and what are those manufactures listings limitations and full discussion on MI type fire rated cable (which is fully listed by UL).	Mark has developed his expertise with NEC Codes and Fire Rated Applications with 18 years as an Application Engineer at Emerson Electric, and 10 years with Pentair Thermal Management. Mark has spent the last 10 years at Pentair Thermal Management specializing in Pentair's Pyrotenax and Raychem brands for commercial applications, offering assistance in application design for top engineering/architects and design build firms. His cumulative experience and expertise allows him to understand the entire construction process from conceptual design, through construction, and ending with project turnover. Mark has designed projects of all sizes and applications while maintaining focus on constructability and ease of maintenance. The right design can minimize installation errors and wasted man hours while improving the overall reliability of the system for the end user.	
2:00 p.m. - 3:00 p.m.	Industrial Lighting Fundamentals	Chris Thompson, Acuity	1 AIA, LU HSW
	An overview of the basic lighting concepts that are important when designing industrial spaces. Including how we see detail and color, how lighting can impact task performance, measurement of horizontal and vertical light levels and lighting quality.		
5:30 p.m. - 7:00 p.m.	NAED New Member and Prospective Member Meet Up		

THURSDAY, MARCH 8

9:00 a.m. - 11:00 a.m.	<p>Understanding the Scope of an Arc Flash Study</p>	<p>Steve Abbott, Stark Safety Consultants</p>	<p>3 credits / OCILB, PDH (Code)</p>
	<p>This course provides an overview of the different components in incident energy analysis process. One of the hardest parts of having an arc flash study done for your facility is getting the proposal scope outlined. The more and descriptive it can be the easier it will be to ensure you are getting it done correctly and providing information to your workers to ensure they are able to protect themselves appropriately. The details of this information are critical to any qualified electrical worker who is exposed to electrical hazards.</p>	<p>Steve Abbott is an electrical safety trainer, Arc flash study project coordinator/manager and provides electrical safety audits, training, policy and procedure writing and related electrical safety consulting services to clients. He a member of the Joint Electrical Apprenticeship Committee NFPA 70E Train the Trainer courses, NJATC NFPA 70E National Advisory Committee and NECA NFPA 70E Incident Energy Task Group, American Society of Safety Engineers and National Safety Council. Abbott has B.A. from Muskingum College.</p>	
9:00 a.m. - 10:00 a.m.	<p>Enabling the Internet of Things through Digital Lighting</p>	<p>John McBride, Acuity</p>	<p>1 AIA, LU HSW</p>
9:00 a.m. - 10:00 a.m.	<p>Physical Security at the Infrastructure Layer</p>	<p>Scott W. Ware, Great Lakes Case & Cabinet</p>	<p>1 BICSI AIA</p>
	<p>As the value of data and equipment in a data center continues to grow, the number of people with access to the data center also grows. This increased access results in a higher risk of internal and external threats against the data enclosures and the physical assets within the facility. The detrimental nature of recent cyberattacks and attacks against physical assets has prompted increased attention to standards compliance that govern how data should be properly protected. In response to more stringent standards, improved security is required at the enclosure layer, including: modular cage panels that are able to create a complete "room"; high-quality enclosures that specifically address possible points of penetration; and various levels of access control solutions ranging from mechanical handles to RFID, PIN, and biometrics. Used in conjunction with each other, these security measures at the enclosure level are able to effectively detect, delay, and deter breaches within the data center.</p>		
10:00 a.m. - 11:00 a.m.	<p>HDBaseT Deep Dive Technology Exploration</p>	<p>Joseph Cornwall, Legrand</p>	<p>1 BICSI</p>
	<p>HDBaseT has had a profound impact on the AV community. Introduced in 2010, this technology, based on a Valens chip set, empowers plug-and-play connectivity between HD video sources and remote displays. Delivering a 5Play feature set that includes uncompressed high definition video, audio, 100BaseT Ethernet, various control signals, and up to 100w of power (PoH), HDBaseT is at the technology that powers sophisticated products from the AV industry's most advanced manufacturers. This important presentation will take you beyond the features and benefits of typical marketing messages and will explore the science and technology behind IEEE standard P1911.3. This is not a features-and-benefits product course, nor is it a how-to-install-it lab. Instead the HDBaseT Deep Dive Technology Exploration will provide a detailed and useful description of the technology behind the fastest growing digital video transport system in the industry today!</p>	<p>A dynamic presenter, award-winning author and widely recognized industry professional, Joe Cornwall has been a member of the commercial AV industry for nearly three decades. He's held management and technical positions in broadcast, residential and commercial market sectors. Cornwall is an InfoComm International Faculty member and InfoComm's 2014 Educator of the Year. He is a frequent presenter at international industry events. A graduate of the University of Cincinnati, Cornwall holds CTS-D, CTS-I, LEED GA, ISF-C, FOI and DSCE industry certifications. Joe Cornwall is the Technology Evangelist for Legrand N. A., where he is responsible for predicting the future, and making it happen.</p>	
10:00 a.m. - 12:00 p.m.	<p>NEC: Top Ten 2017 Changes, Top Ten 2020 Proposed Changes, Codes & Submissions</p>	<p>Tim McClintock, NFPA Regional Electrical Code Specialist, National Fire Protection Association</p>	<p>2 credits / OCILB, PDH (Code)</p>

	<p>This presentation will include an overview of the top ten significant changes to 2017 NEC and review of the top ten proposed changes for the 2020 edition of the NEC . Review of new articles and revised requirements addressing industry trends in new technology and delivery and generation of electric power are key highlights included in the program.</p>	<p>Tim McClintock has 32 years experience in the electrical industry and is the Regional Electrical Code Specialist with the National Fire Protection Association (NFPA). In this role, he provides support to state and local jurisdictions with the adoption and use of the National Electrical Code® and other NFPA electrical codes and standards. This includes providing both pre- and post-adoption training on the most recently adopted edition of the NEC for several state jurisdictions. He was co-author of the NFPA 2014 and 2017 NEC® Pocket Guides to Electrical Installations books and provided technical material for the 2017 NEC® Handbook. Tim is actively involved with the International Association of Electrical Inspectors (IAEI), where he currently serves as the Membership Chair for the Western Section and Chair of the International Membership Committee of IAEI. Tim currently holds professional certification with the State of Ohio as an electrical safety inspector, electrical plan examiner, building official, residential building official, and building inspector. He served on Code Making Panel 12 for the 2008 and 2011 NEC code development cycle and 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.</p>	
10:00 a.m. - 11:00 a.m.	<p>The Future of the Lighting Industry</p> <p>The combination of LED, controls and sensors represent the future for lighting, offering features previously not possible with conventional approaches. However, unlike previous lighting advances, this combination will forever change how lighting is designed, specified, purchased, installed and used? What skill-sets will be required of tomorrow's lighting practitioners? What will tomorrow's customers be looking for from their "lighting" systems? Which companies will "own the ceiling" in tomorrow's lighting world? This presentation will examine that future including how health, sensors and "Big Data" will play a critical role.</p>	<p>Dr. Jack Curran, LED Transformations</p> <p>John W. (Jack) Curran, PhD has spent over 30 years in the area of product development. His executive experience includes senior positions managing the R&D efforts of a number of industrial high technology businesses. With 34 patents issued, Dr. Curran has been responsible for a wide range of products. Currently he is President of LED Transformations, LLC, a South Carolina based technology consulting company specializing in providing guidance to companies entering the solid-state lighting field. He is a member of the SPIE International Society for Optical Engineering; IESNA; the Optical Society of America and the Acoustic Society of America. He is regularly asked to provide presentations for the lighting community on the correct use of LED technology and since 2010 he has spoken to over 12,000 attendees, including numerous presentations on behalf of the US Department of Energy.</p>	1 AIA, LU HSW
11:00 a.m. - 12:00 p.m.	<p>New Generation of Medium Voltage Switchgear</p> <p>The learning objectives of this presentation is to describe what is Shielded Solid Insulation; list the differences between current and new switchgear designs; list the benefits of the new generation of medium voltage switchgear and how it addresses current market needs and describe how to design with new switchgear technology, and application considerations.</p>	<p>Joseph Richard, Schneider Electric</p> <p>Joe Richard is the US Launch Manager for Schneider Electric's Premset Switchgear. Richard graduated from the Georgia Institute of Technology with a BS degree in Electrical Engineering in 2007, and has been with Schneider Electric since 2008. He has worked in a variety of roles including Sales, Marketing, and Business Development. Joe's main focus has been Medium Voltage Distribution Switchgear and its applications. His professional interests include Power Distribution, Energy Efficiency, Power Protection and Automation, Energy Storage, and Renewable Energy.</p>	1 credit/ OCILB, PDH (Technology)
11:00 a.m. - 12:30 p.m.	<p>Evaluating Light Source Color Quality Using IES TM-30-15: IES Cleveland</p> <p>Light source spectrum is one component of lighting quality because different spectra render object colors in different ways. Spectrum influences the color appearance of objects, rendering them with more or less saturation, or hue-shifting, or some combination, including different color shifts for different object colors. This presentation will describe TM-30-15 IES Method for Evaluating Light Source Color Rendition as a framework for evaluating light source color quality, including the characterization of color fidelity, color gamut, object saturation, and hue shifts. Visual examples for numerous spectra will be presented. The audience will become knowledgeable in interpreting the numerical and graphical results from TM-30-15.</p>	<p>Dr. Kevin Houser, Professor of Architectural Engineering, Penn State University</p> <p>Kevin Houser (PhD, PE, FIES, LC) is a Professor of Architectural Engineering at Penn State and the editor-in-chief of LEUKOS, the journal of the Illuminating Engineering Society (IES). His journal publications have been recognized by IES with the 2005, 2011, and 2013 Taylor Technical Talent Award, and by CIBSE with the 2005 Leon Gaster Award. His recent research has focused on fundamental inquiries into human perceptual and biological responses to optical radiation and the application of that knowledge to the spectral design of light sources. He is one of four editors of the 10th edition IES Lighting Handbook, for which he and the other editors received 2011 IES Presidential Awards. He has published more than 45 papers in refereed journals, and has contributed to more than 100 other publications that include conference proceedings, editorials, trade magazine articles, IES technical documents, and contract reports.</p>	1 AIA, LU HSW
11:00 a.m. - 12:00 p.m.	<p>5 Steps to Building WiFi Networks</p>	<p>Jussi Kivineimi, Jerry Olla - Ekahau</p>	1 BISCO

	Discuss the 5 steps in building WiFi Networks: Defining the requirements; Designing the WiFi Network; Deploying WiFi Network; Diagnosing & Troubleshooting and Documenting Results.	Jussi Kivineimi is a senior vice president at Ekahau. Some days, you might find Jussi crafting the solution strategy of the company. The next day, he might be speaking at an international conference. Day after, he might be busy making coffee for his teammates, while trying hard not to micromanage them. Jerry Olla, is a Product Manager at Ekahau an all-around Wi-Fi enthusiast. He has experience designing Wi-Fi Networks for a variety of environments including large medical centers as well as warehousing and manufacturing spaces. He has also presented at multiple Wi-Fi conferences, including CWNP's Wi-Fi Trek, and Wireless LAN Professionals Conference.	
12:00 p.m. - 3:00 p.m.	How to Perform an Electrical Risk Assessment	Steve Abbott, Stark Safety Consultants	3 credits / OCILB, PDH (Code)
	Basic understanding of electrical risk assessments components/concepts; Identify risks of different related electrical tasks; Look at elements of risk assessments and how to use with electrical safe work practices; Understand the difference between hazard assessments and risk assessments; Understand the Arc flash risk assessment requirements of the 2018 NFPA 70E; Basic understanding of 2018 NFPA 70E Annex F; Determine when hazards and risk warrant PPE; Walk through examples of one possible template approach to an electrical risk assessment.	Steve Abbott is an electrical safety trainer, Arc flash study project coordinator/manager and provides electrical safety audits, training, policy and procedure writing and related electrical safety consulting services to clients. He a member of the Joint Electrical Apprenticeship Committee NFPA 70E Train the Trainer courses, NJATC NFPA 70E National Advisory Committee and NECA NFPA 70E Incident Energy Task Group, American Society of Safety Engineers and National Safety Council. Abbott has B.A. from Muskingum College.	
12:30 p.m. - 1:30 p.m.	Smart Grid with the Illuminating Company	Mark Vallo PE, Manager of Smart Grid, The Illuminating Company/FirstEnergy	1 credit / OCILB, PDH (Technology)
	In-depth discussion on the three Smart Grid Technologies: Smart Meters (AMI), Distribution Automation (DA) and Integrated VoltVAR control (IVVC). Presentation will include details on how these technologies work independently and together to provide customers a better electrical experience. Presenter will be available for questions.	Mark Vallo is Manager of Smart Grid Technology at FirstEnergy. He graduated with Bachelor of Electrical Engineering from Cleveland State University and began at Cleveland Electric Illuminating in 1984 and has 34 years with FirstEnergy. At FirstEnergy, his work experiences include; 18 years FE Generation, Power Plant Control Systems; years FE Sales & Marketing, Energy Engineer ; 12 years FE Utilities, Operations Center, Engineering, Smart Grid. Vallo's group provides Smart Grid conceptual development. He ensures that Smart Grid technology that is deployed achieves the expected results, including interactions and reports to applicable State Commissions.	
1:00 p.m. - 2:00 p.m.	Networked Lighting Control Made Simple – Vive by Lutron	Lutron	
	Introducing a simple lighting control solution for both new and existing commercial buildings. This interactive session will focus on understanding the controls required to meet today's Commercial Building codes as well as the data & energy management software facility managers want for their buildings. Attendees will have the opportunity to see first hand how a system is commissioned and how to utilize software to optimize system performance for enhanced energy savings		
1:00 - 2:00 p.m.	Standby Power Generator Systems: Design & Applications	Mike Sonnhalter, Application Engineer, Buckeye Power Sales	1 credit / OCILB, PDH (Code)
	Standby power generation systems require thorough planning and follow specific design criteria. This includes sizing, load analysis, prioritizing loads, stepping loads on/of, location considerations, interior, exterior, exhaust, noise, fuel types and applying the correct type and quantity of ATS (automatic transfer switches). Attendees will have a better understanding and general overview of the types of applications, specific loads to look at, and what is required to make a successful installation as a reliable backup power source.		
1:00p.m. - 2:00 p.m.	FirstEnergy Commercial and Industrial Incentive Programs	Chris Joss, Scott Meli, Karen Heater - Sodexo	1 credit / OCILB, PDH (Business)
	Sodexo is the management firm contracted by FirstEnergy to manage the Commercial and Industrial Incentive Programs to help customers manager their energy use and understand incentives.		
1:00 p.m. - 2:00 p.m.	Leviton Smart Home Automation Solutions Smart Yet Simple Residential Solutions!	Tom West, Northeast Regional Sales Management Energy Management, Controls & Automation – New Orleans, Leviton Manufacturing Co., Inc.	

	Enjoy a presentation as Leviton highlights the Samsung SmartThings and Leviton home automation bundle. As well as the latest in Homekit, and Wifi offerings! Now sold via electrical distribution. See how easy it is to connect to Amazon Echo and Google home. See how homeowners can integrate lights, HVAC, Locks and many other technologies into the simple automated home. Provide your customers with an affordable home automation option from Samsung and Leviton, or Leviton Wi-Fi with integration options from various manufacturers to expand the system at any time.	Mr. West has been in our industry for over 35 years, starting his career as an electrician in 1976. He moved into electrical distribution sales in 1979. His career with Leviton began in 1993. During his employment with Leviton, he has taught over 6000 students on various industry topics such as basic and advanced structured wiring, residential camera solutions, whole house distributed audio, home automation, power quality solutions as well as specialty lighting controls for commercial and residential system applications. He has been a featured speaker at many industry association meetings. He is currently the Northeast Regional Sales Manager for Energy Management, Controls & Automation.	
2:00 p.m. - 3:00 p.m.	<p>Lean for Design & Construction: Saying "No" to the Status Quo</p> <p>Do we have to keep accepting the status quo on our projects? Things like poor communication, budget overages, schedule overages, lost profits and finger pointing? Presenters, supported by their own experience and a growing amount of evidence say "NO"! In this session, they will introduce attendees to Lean for AEC professionals. Lean is one approach that the AEC community is taking to reject the status quo and pursue better project outcomes. Gallo and Francisco will explain how a Lean approach helps a project team deliver more value and eliminate waste. They will define common Lean tools that attendees might encounter on a project. They will give examples of how Lean principles can benefit the entire project team, including the owner, architect, engineer, CM and trades partners. And they will share why Lean offers project teams a way to produce better work and have more fun in the process.</p>	Rocco Gallo, Karpinski Engineering and Armando Francisco, Lake Erie Electric	1 credit / OCILB, PDH (Technology)
2:00 p.m. -3:00 p.m.	<p>Everything IP: In Three Short Years, Everything will Change. Is Your Network Ready?</p> <p>In just a few short years, the connected world will experience explosive growth in bandwidth demand, an evolution in wireless technology, and a threefold increase in the amount of power transmitted through IP networks. New technology currently in development will be needed to support future generations of devices and applications. Is your infrastructure designed and built with advanced technology that will hold up to these future demands?</p>	Troy Parvin, Berk-Tek LLC	1 BICSI, AIA

Colors indicate educational track, classes are open to all:

Clean Energy

Lighting

Low Voltage Systems

Power/Electrical