



Engineers Joint Committee of Long Island

Anthony Cacioppo, P.E., Chair
Paul Lanzillotta, P.E., Vice-Chair

ENGINEERS WEEK SEMINAR SERIES

Thursday, February 15, 2018

Place: *Holiday Inn Plainview - 215 Sunnyside Boulevard, Plainview, NY 11803*
516-349-7400 (Front Desk)

Program:	8:00 am – 9:00 am	Registration & Continental Breakfast
	9:00 am – 10:00 am	Morning Seminars
	10:00 am – 10:15 am	Break
	10:15 am – 12:15 pm	Morning Seminars Cont'd.
	12:15 pm – 1:15 pm	Lunch
	1:15 pm – 2:15 pm	Afternoon Seminars
	2:15 pm – 2:30 pm	Break
	2:30 pm – 4:30 pm	Afternoon Seminars Cont'd.

Seminars & Descriptions

“Basic Control Valve Sizing and Selection” (1 PDH) 9:00 am – 10:00 am
Presented by: Terry Ingram, President – Allagash International

This seminar will discuss Design and Application of Control valves used in industry. The course will cover the different types of valves used in processes: Design and selection of control valves, valve sizing, ratings, materials of construction and design specifics, such as valve seats; properties of flow, flow characteristics and fluid behavior as influenced by type of trim designs inside control valves; other attributes including pressure drop, cavitation, noise and vibration which have an inherent risk of equipment damage; and actuators & accessories that are available to create an automatic control valve.

“Ultrasonic Clamp-on Flow and Thermal Energy - BTU Metering” (2 PDH) 10:15 am – 12:15 p
Presented by: Israel Rivera, Co-Founder – Flexim Americas

The cost of Thermal Energy in buildings is one of the major operating costs. Unfortunately, many building owners and building operating engineers, as well as HVAC Design engineers, do not consider all aspects of monitoring thermal energy of the huge quantities of water, steam and gas used in today's facilities. Flexim Americas, formally Flexim Instruments, a leader in Ultrasonic flow meters will present the technical and economic issues regarding Thermal Energy measurement. Proper selection of pipe location, transducer frequencies and attendant temperature compensation will be discussed, providing a “Best Practices” understanding of Thermal Energy metering and “Sum-metering.”

“How Components and Controllers Form a BAS Control System” (1 PDH) **1:15 pm – 2:15 pm**
Presented by: Jeff Hodges, Business Development Manager – Siemens BT

Basic overview of Building Automation Systems (BAS) or Building Management Systems (BMS). This presentation includes material on what a BAS point is, identification of various BAS components, and how components and controllers form a BAS Control System. Discussion will also include: network architecture, controllers, and open loops vs. closed control loops.

“Lab Control Strategy including Energy Optimization” (1 PDH) **2:15 pm – 3:15 pm**
Presented by: Paul Fuson, National Business Devel. Mgr. – Life Science Center of Competence

Laboratories are notoriously high energy consumers. In this presentation we cover several energy efficiency strategies as well as address standards, technologies and industry trends that are changing the way we approach the design and operation of these facilities. Learning Objectives will include: learn fundamental requirements of a laboratory airflow control system; understand how energy usage in labs compares to non-lab spaces; learn about various Facility Improvement Measures (FIMs) for laboratories; understand the importance of laboratory services relative to safety and compliance.

“VFD Harmonics & Mitigation” (1 PDH) **3:30 pm – 4:30 pm**
Presented by: Joseph Passetti, NE Regional Sales Manager – MTE

The topics discussed will be the causes of harmonics and their effect on the power system. The discussion on IEEE 519 2014 covering goals for the design of electrical systems that include both linear and nonlinear loads will include the changes from the previous version including definition of terms. The way that various connected devices, including variable speed drives, induce noise and harmonics on a facility power system will be discussed, including the effects and significance of the different order harmonics. Finally, we will discuss the various technologies used to mitigate the harmonics including DC chokes & line reactors, trap and broadband passive filters, 18 pulse drives, active front end drives and also active filters, as well as how these devices protect drives and the connected motor.

“NY State Fire Alarm Code Requirements” (4 PDH) **9:00 am – 12:15 pm & 1:15 pm – 2:15 p**
Presented by: James M. Mundy, Jr., President – Asset Protection Associates, Ltd.

This seminar targets the progression of NFPA 72 from inception in 1990 thru to current code requirements of NFPA 72 – 2013 Edition as adopted by the State of New York. Deficiencies are common in both design and field application. This four-hour segment walks the attendee thru development and significant changes made largely in the Fire Alarm and signaling standard. Code referenced suggestions are made to provide specific recommendations which, when adopted, provide positive outcomes.

“Fire-Resistive Construction Requirements of the IBC” (2 PDH)
Presented by: Bruce Johnson, Senior Regulatory Engineer – UL

2:15 pm – 4:30 pm

This class will provide students with an overview of the 2015 International Building Code (IBC) Chapter 7 requirements for fire resistance-rated construction. This will include requirements for fire-resistant assemblies and fire-protection ratings for opening requirements. The class will provide students with insight on how walls, ceilings, structural elements and opening protectives are tested to achieve fire-resistance or fire-protection ratings. Students will receive useful tips for conducting plan review and field inspections to ensure code compliance with IBC Chapter 7 requirements.

“Data Center Cooling with Outside Air” (1 PDH)
Presented by: Mike Herwald, North America Sales Manager – Munters

9:00 am – 10:00 am

As data center temperatures have risen over the last decade, cooling data centers with an economizer type system has become popular for owners trying to improve system efficiency. There are two main types of economizers that will be presented, Direct Air Side Economizer (DASE) and Indirect Air Side Economizer (IASE). DASE systems modulate outside air with return air in order to achieve target supply temperature required to cool the data center. Often, Direct Evaporative Cooling (DEC) is used to boost cooling on hotter days. IASE systems use a heat transfer device to isolate the data center from ambient conditions, but harness cooling potential. By using a heat exchanger to harness the cooling potential, the data center is removed from pollution and humidity extremes. The presentation is a comparison of the DASE and IASE concept with focus on critical IASE efficiency parameters, including a comparison of IASE methods.

“Application of Modern Absorption Chiller and Case Study” (2 PDH)
Presented by: Bin Li, Ph.D., Engineer – Broad USA
Yongjian Gu, Ph.D., P.E., Assistant Professor, US Merchant Marine Academy

10:15 am – 12:15 pm

This is a comprehensive presentation about the development, working principle, application and case studies of modern absorption technology. The development of absorption chillers is first described from its invention to the commercialization and mass production. Emphasis is given on that the absorption market has made significant advancements in the last a couple of decades with the advantages of absorption technology in energy input variety – solar, waste heat, hot water, and steam, etc. and application flexibilities – cooling, heating, and power generation (CHP). Then, the presentation illustrates the deployment of thermally driven absorption chillers for the application of combined cooling, heating and power generation (CCHP), particularly in North America. In the presentation, an overview of absorption working principle is introduced with the explanation of key components. As a global manufacturer of modern absorption chiller, BROAD’s unique technologies are highlighted in the presentation. Finally, case studies of applications using board products are displayed in the areas of micro-grids, CHP, cogeneration, renewable energy project design, low carbon greenhouse project design, and industrial heat recovery design. The results of these applications have shown effective energy savings and are environmental friendly.

“Dedicated Outside Air Equipment” (2 PDH) **1:15 pm – 3:15 pm**

Presented by: Bill Artis, LEED AP BD+C, Business Development Specialist, VRF – Trane

In this seminar, participants will learn design and control considerations and best practices for dedicated outside air systems, as well as distribution and integration with other HVAC systems, and will review the various types of equipment used for dedicated outside air conditioning.

“New Hydronic Systems and Components” (1 PDH) **3:30 pm – 4:30 pm**

Presented by: John Knowles, Senior VP of Application Engineered Design – Wales-Darby, Inc.

After completion of the course topic attendees will be able to justify or direct the proposing & designing of a hydronic system in lieu of an air system via pump energy usage versus fan energy usage comparison. Understand that while the comfort load required is the critical parameter, saving pump energy and pipe size by increasing system ΔT and correspondingly lowering system gpm does not compromise load...and it will increase boiler efficiencies and chiller efficiencies as well. Be knowledgeable that the design day comfort load is in play only for only a very small fraction of the time...and that part load provides opportunity (Pump Affinity Law #3) for saving pump energy with VFD's. Be aware of the idiosyncrasies of highly efficient, highly comfortable hydronic systems and the hydronic system components that enable performance and realize Return on Investment (ROI) as intended. Be aware that these new hydronic systems can have high initial costs, and be confident to offer alternatives and concepts regarding pipe material and installation labor savings such that energy efficient designs remain intact and are not “value engineered” out due to budgeting concerns.

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SCHEDULE

	Room A	Room B	Room C
9:00 - 10:00	<i>“Basic Control Valve Sizing & Selecting”</i>	<i>“NYS Fire Alarm Code”</i>	<i>“Data Center Cooling with Outside Air”</i>
10:00 – 10:15	BREAK		
10:15 - 12:15	<i>“Ultrasonic Clamp-on Flow and Thermal Energy – BTU Metering”</i>	<i>“NYS Fire Alarm Code” (cont’d.)</i>	<i>“Application of Modern Absorption Chiller and Case Study”</i>
12:15 - 1:15	LUNCH		
1:15 - 2:15	<i>“How Components & Controllers Form a BAS Control System”</i>	<i>“NYS Fire Alarm Code” (cont’d.)</i>	<i>“Dedicated Outside Air Equipment”</i>
2:15 - 3:15	<i>“Lab Control Strategy Including Energy Optimization”</i>	<i>“Fire-Resistive Construction Reqts. of the IBC”</i>	
3:15 – 3:30	BREAK		
3:30 - 4:30	<i>“VFD Harmonics & Mitigation”</i>	<i>“Fire-Resistive Construction Reqts. of the IBC” (cont’d.)</i>	<i>“New Hydronic Systems and Components”</i>

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MEMBER SOCIETIES

New York State Society of Professional Engineers
 -Long Island Chapter
 American Institute of Aeronautics & Astronautics
 Institute of Industrial and Systems Engineers
 American Society of Civil Engineers

Institute of Electrical & Electronic Engineers
 American Society of Heating Refrigeration
 & Air Conditioning Engineers
 American Society of Mechanical Engineers
 Society of Women Engineers
 Society of Manufacturing Engineers
 New York Institute of Technology – Old Westbury

Farmingdale State University
 Stony Brook University
 Hofstra University
 International Society for Automation
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To register, complete and return this form with payment by February 9, 2018 to:

Amanda J. Haimes, 172 Sherry St, East Islip, NY 11730

Email questions to: ajhaimes@gmail.com

**ALL FIELDS MUST BE COMPLETED. PRINT NEATLY.
CHECK ALL SEMINARS YOU WISH TO ATTEND.**

Fee: _____ \$125 for full day (4-6 PDH); includes lunch
_____ \$75 for half day (3 or fewer PDH); includes lunch

STUDENTS WITH A VALID ID MAY ATTEND AT NO COST (must submit form)

_____	9:00am – 10:00am	“Basic Control Valve Sizing & Selecting” (1 PDH)
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_____	3:30pm – 4:30pm	“New Hydronic Systems and Components” (1 PDH)

Total PDH _____ **Total Amount Enclosed \$** _____

*** Make check payable to: Engineers Joint Committee of LI**

Name _____ Phone _____

Company _____

Mailing Address _____

E-mail Address _____

If using a credit card, fill out above & below and e-mail form to: ajhaimes@gmail.com

Credit Card Number _____ Billing Zip Code _____

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