



# Engineers Joint Committee of Long Island

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

## ENGINEERS WEEK SEMINAR SERIES

*Thursday, February 13, 2020*

*(Snow Date: Monday, February 24, 2020)*

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

<b>Program:</b>	<b>8:00 am – 9:00 am</b>	<b>Registration &amp; Continental Breakfast</b>
	<b>9:00 am – 11:00 am</b>	<b>Morning Seminars</b>
	<b>11:00 am – 11:15 am</b>	<b>Break</b>
	<b>11:15 am – 12:15 pm</b>	<b>Morning Seminars Cont'd.</b>
	<b>12:15 pm – 1:15 pm</b>	<b>Lunch</b>
	<b>1:15 pm – 3:15 pm</b>	<b>Afternoon Seminars</b>
	<b>3:15 pm – 3:30 pm</b>	<b>Break</b>
	<b>3:30 pm – 4:30 pm</b>	<b>Afternoon Seminars Cont'd.</b>

### Seminars & Descriptions

**“Nuclear Energy: Alternative Energy Source?” (2 PDH)**  
**Presented by: Lev Neymotin, PhD – SONAD, Inc.**

**9:00 am – 11:00 am**

After more than 50 years of existence, nuclear electrical power generation is gaining considerable attention in the U.S. and in other countries as one of the sources of electricity both for industrial and domestic consumption. The general tendency is to use it for augmenting such sources as coal, gas, and oil – the major producers of CO<sub>2</sub>, and environmental pollution. The presentation, in its two parts, reviews basic properties of nuclear fission materials and their uses for production of electric power and nuclear weapons. Risks vs. benefits of both uses are presented in juxtaposition. Three accidents are reviewed: Three Mile Island, Chernobyl and Fukushima, and lessons learned presented. A brief review of recent nuclear nonproliferation programs sponsored by the U.S. DOE is also given.

**“Entertainment Engineering:**

**What It Takes to Create the Shows You Love” (1 PDH)**

**11:15 am – 12:15 pm**

**Presented by: Stephen Sywak, P.E., Sr. Mechanical Design Engineer – Tait Towers**

A discussion of how engineering, art, and entertainment intersect. This presentation includes a discussion of specifications created by various international governing agencies in the entertainment industry, major corporate players within that industry, and specifications and handbooks created by more general agencies that have been adopted by the entertainment industry to allow us to create safe and reliable environments. Finally, a few examples will be presented and discussed in detail which highlight the high level of design, analysis, and technology involved in some of the more complicated shows and their "gags."

***“The ABC’s of VFD’s and Electrical Harmonics”* (2 PDH)                      1:15 pm – 3:15 pm**  
**Presented by: Larry R. Stanley, BSEET, Sr. Business Development Engineer – ABB**

Although Variable Frequency Drives (VFDs) are common in water and wastewater treatment plants for collection and distribution systems, the value they provide and how to properly select and use them are often not fully understood. This presentation will demystify VFDs, providing a better understanding as to where and why you would use them. The second part of this seminar focuses on electrical harmonics. Electrical Harmonics are a form of electrical litter or contamination within your distribution system. In many instances they are misunderstood, feared or ignored. With a basic understanding of how the harmonic currents are generated, the level at which they become a concern and the resolutions for abatement the industrial or municipal user can continue to apply and use non-linear power device with confidence.

***“The Paradigm Shift in Building Design: Focusing on Indoor Environmental Quality, Performance, and Accountability to Create Great Spaces”* (1 PDH)                      3:30 pm – 4:30 pm**  
**Presented by: Bill Artis BCxP, BEMP, BEAP, LEED AP, Managing Partner – Energy Project Consulting**

In order to design buildings that are comfortable spaces for occupants that are also energy efficient, we need to change how we view designing buildings. To do this, we need to view buildings as environments, and not simply a combination of systems selected based on prescriptive requirements. In this seminar, we will focus on discussing design approaches that use the Owner’s Project Requirements to establish goals for form, function, cost, and performance, evaluate strategies for reducing building energy use, and maintaining accountability for building performance from design through occupancy.

***“20 Years of Wireless Instrumentation and Automation”* (2 PDH)                      9:00 am – 11:00 am**  
**Presented by: Shane Filer, General Manager – Neal Systems, Inc.**

The goal of this presentation is for the attendee to understand the early uses of wireless, see how it evolved over time, and evaluate industrial automation technology solutions available today that makes plants smarter / faster / more efficient / and safer.

***“Single Ply Membranes Exposed: The Myths & the Facts”* (1 PDH)                      11:15 am – 12:15 pm**  
**Presented by: John Dulisse – Zacharia Associates**

Single-ply membranes, along with their installation methodologies, have evolved to best meet the roofing needs of today’s low-slope commercial buildings. Past and present systems will be presented with a focus on today’s most prevalent membranes. Discussion will include the challenges surrounding single ply usage from a building science perspective — particularly the relationship between white membranes and condensation. Recent arguments regarding a white membrane’s effect on overall building energy efficiency will also be challenged. Finally, future trends will be outlined emphasizing the roof system as part of an integrated building envelope, not a discrete component as traditional perspectives have suggested.

***“Solar-Assisted Combined Cooling, Heating & Power (SCCHP) Plant” (2 PDH) 1:15 pm – 3:15 pm***  
**Presented by: Yongjian Gu, Ph.D., P.E. – United States Merchant Marine Academy**

Renewable and sustainable energy has been getting attractive in recent years. Solar heat is a typical renewable and sustainable energy. A solar-assisted combined cooling, heating, and power (SCCHP) plant is the plant completely powered by solar heat energy to meet cooling, heating, and power requirement in buildings, factories, and communities, etc. In the presentation, the working mechanism of the SCCHP plant and its systems are presented. The plant is composed of a solar heating system including solar energy collectors and a high efficiency heat transfer fluid (HTF) heat exchanger, a steam turbine system including a steam turbine and a condenser, and a heating, ventilation, and air conditioning (HVAC) system including a chiller, a cooling tower, and an air handling unit (AHU). The sketches of the SCCHP plant and its subsystems are illustrated in the presentation. Major equipment used in the SCCHP plant and their alternatives are discussed, such as solar collector types, heat exchanger types, steam turbine types, and chiller types. For efficient operation of a SCCHP plant, application of proper equipment is important. The key calculation and analysis based on thermodynamics, fluid mechanics, and heat transfer for a SCCHP plant are also briefly described in the presentation for the purposes of design and operation.

***“Building Energy Efficiency and Roof Design” (1 PDH) 3:30 pm – 4:30 pm***  
**Presented by: Jonathan Parisi and Karl Luechau – GAF**

An improperly ventilated house is susceptible to a range of problems, from mold growth and structural damage to increased energy costs. This course discusses principles of proper ventilation in houses with steep-slope roofing – from the science behind moisture and airflow to the products used to assist ventilation through a structure.

***“IRC 2015 Code Compliant Wood Frame Residential Details” (2 PDH) 9:00 am – 11:00 am***  
**Presented by: Michael A. Otchy, District Sales Manager - MiTek® Builder Products Division**

This presentation is intended to provide designers, architects, builders and engineers with a practical assessment of wood framing construction practices and detailing. The presentation includes foundation to wall, wall construction, wall to roof and methods and device examples for solving wall bracing, sheer panels, and uplift conditions.

***“One & Two Family Dwelling Electrical” (4 PDH) 11:15 am – 4:30 pm***  
**Presented by: Salvatore Ferrara, Owner/Director – Electrical Training Center**

This seminar is based on the 2017 National Electrical Code. This four-hour seminar will go over important definitions as it pertains to NEC. This seminar will explain and describe the difference between service panels and sub panels. The student will be able to understand and explain the difference between grounding and bonding in a one- and two-family dwellings. This seminar will give detail of the requirements of GFCI and AFCI protection for one- and two-family dwellings. Lastly, this seminar will explain the truth and myths regarding aluminum wiring in a home.

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***\*PLEASE KEEP THIS PAGE FOR REFERENCE THROUGHOUT THE DAY\****

## SCHEDULE

	<b>Room A</b>	<b>Room B</b>	<b>Room C</b>
<b>9:00 - 11:00</b>	<i>Nuclear Energy: Alternative Energy Source?</i>	<i>20 Years of Wireless Instrumentation and Automation</i>	<i>IRC 2015 Code Compliant Wood Frame Residential Details</i>
<b>11:00 - 11:15</b>	<b>BREAK</b>		
<b>11:15 - 12:15</b>	<i>Entertainment Engineering: What It Takes to Create the Shows You Love</i>	<i>Single Ply Membranes Exposed: The Myths &amp; the Facts</i>	<i>One &amp; Two Family Dwelling Electrical*</i>
<b>12:15 - 1:15</b>	<b>LUNCH</b>		
<b>1:15 - 3:15</b>	<i>The ABC's of VFD's and Electrical Harmonics</i>	<i>Solar-Assisted Combined Cooling, Heating &amp; Power (SCCHP) Plant</i>	<i>One &amp; Two Family Dwelling Electrical Cont'd*</i>
<b>3:15 - 3:30</b>	<b>BREAK</b>		
<b>3:30 - 4:30</b>	<i>Building Design: Focusing on Indoor Environmental Quality, Performance, and Accountability</i>	<i>Building Energy Efficiency and Roof Design</i>	<i>One &amp; Two Family Dwelling Electrical Cont'd*</i>

**\* The Electrical course is a 4 PDH course; all 3 segments MUST be attended to receive credit**

**Note: PDH credits will be provided for all courses**

**Note: Seminars in Room C will also provide Training Credits for Code Enforcement Officials**

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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  
American Society for Engineering Education  
American Society for Quality  
US Merchant Marine Academy

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Thursday, February 13, 2020

Holiday Inn Plainview - 215 Sunnyside Boulevard, Plainview, NY 11803

To register, complete and return this form with payment by February 7, 2020 to:

Andrew S. Haimes, 172 Sherry Street, East Islip, NY 11730

Email questions to: ashaimes@optonline.net

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

**Fee:** \_\_\_\_\_ \$135 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 – 11:00am “Nuclear Energy: Alternative Energy Source?” (2 PDH)  
\_\_\_\_\_ 11:15am – 12:15pm “Entertainment Engineering: What It Takes to Create the Shows You Love” (1 PDH)  
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\_\_\_\_\_ 9:00am – 11:00am “IRC 2015 Code Compliant Wood Frame Residential Details” (2 PDH/2 Hr. CEO)  
\_\_\_\_\_ 11:15am – 4:30pm “One- & Two-Family Dwelling Electrical” (4 PDH/4 Hr. CEO)

**Total PDH** \_\_\_\_\_ **Total Amount Enclosed \$** \_\_\_\_\_

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

Name \_\_\_\_\_ Phone \_\_\_\_\_

Company \_\_\_\_\_ Check if Code Enforcement Official \_\_\_\_\_

Mailing Address \_\_\_\_\_

E-mail Address \_\_\_\_\_

**If using a credit card, fill out above & below and e-mail form to: ashaimes@optonline.net**

Credit Card Number \_\_\_\_\_ Billing Zip Code \_\_\_\_\_

CC Type (Circle One): MC, Visa, AE, Disc. Exp. Date \_\_\_\_\_ CCV Code \_\_\_\_\_