UNDERGROUND TRANSMISSION CONFERENCE 2020
New Challenges Faced Going Underground

January 23-24, 2020
Hyatt Regency Boston
Boston, MA

“EUCI is authorized by IACET to offer 0.9 CEUs for the conference and 0.7 CEUs for the workshop.

PRE-CONFERENCE WORKSHOP
Underground Transmission 101
WEDNESDAY, JANUARY 22, 2020

“The EUCI UG conference is a great tool to introduce new UG affiliates to the field as well as expand the knowledge of the most senior affiliates.”

Transmission Engineer, Dominion Power

HOST UTILITY
EVERSOURCE ENERGY

SPONSORS
OVERVIEW

Going underground with transmission has traditionally been a transmission owner’s last resort because the cost of underground transmission is many times the cost of overhead transmission and maintenance and repair has proved costly and difficult. However, advanced cable technologies have been developed, installation techniques have expanded in terms of options and efficiency while cost factors have improved giving transmission owners more realistic options. Operators and owners that have existing underground transmission know of some of the challenges they face efficiently operating underground systems regarding maintenance, repairs, leak detection and outage times.

This 14th Annual Underground Transmission Conference hosted by Eversource Energy will engage attendees in examples of recent underground projects as well as those challenges to take-on with operating existing systems. Replacement of cable types as well as restoration after leaks and developing plans for maintenance streamlining including leak detection are some of the additional topics discussed.

LEARNING OUTCOMES

• Review Eversource Energy’s projects and their unique challenges and new installation methods
• Detail American Electric Power’s lessons learned from projects across multiple states
• Discuss National Grid’s strategies and methods used to engage stakeholders in the public engagement of underground projects
• Highlight the challenges and installation methods considered by Eversource Energy for a submarine cable running across Little Bay
• Delve into National Grid’s procedures and lessons learned from the response to leaks
• Engage in a panel discussion of engineers and contractors on the challenges facing underground transmission
• Review LADWP’s case study of the construction on their Sylmar ground return system-ocean electrode project
• Discuss options for reconductoring of both HPFF and HPGF circuits
• Expand on what to look for in construction/installation of underground transmission circuits as a utility staff person overseeing the project

WHO SHOULD ATTEND

• Transmission planners
• Transmission engineers
• Transmission Project managers
• Regulators and regulatory staff
• Utility construction contractors and engineering companies
• HV cable engineers

“Excellent opportunity to learn and meet professionals from different utilities.”

Sr. Electrical Engineer, ENMAX Power Corporation

“The conference was a good opportunity for networking and making new contacts.”

President, Power Delivery Solutions
AGENDA

THURSDAY, JANUARY 23, 2020

8:00 – 8:30 am  Registration and Continental Breakfast

8:30 – 9:00 am  Welcome and Opening Comments
   Doug Foley, Vice President Electric Field Operations, Eversource Energy

9:00 – 10:00 am  Recent Experiences with New UG Transmission Technologies and Installation Methods
   Eversource has a wide variety of UG transmission projects that are currently taking place or have recently taken place. These projects include installation of submarine cable, XLPE Cable, and HPFF Cable. Unique challenges have come up on all these projects and Eversource would like to discuss some of these challenges and new installation methods for completing these projects.
   Mike Falco, Transmission Engineer, Eversource Energy
   Allie Klein, Transmission Engineer, Eversource Energy

10:00 – 10:30 am  Networking Break

10:30 – 11:15 am  Challenges and Lesson Learned on Underground Circuits in Multi-States
   American Electric Power has a variety of underground circuits throughout its multi-state territory and has faced varying challenges from them. This presentation will review those challenges and share detailed lessons that were learned from coordinating these multiple projects.
   Jared T Jajack, Senior Transmission Engineer, American Electric Power

11:15 am – 12:00 pm  Public Engagement for Underground Transmission Projects
   Underground transmission projects require a balance be struck between the need for additional energy development and landowner priorities, environmental impact considerations and regulatory compliance. A comprehensive strategic public engagement process is a key tenet to the success of a project. Stakeholders must be engaged throughout the process, using a wide variety of communication and engagement techniques that are tailored to the needs of each stakeholder. The strategies and methods they use to positively engage stakeholders, build trust with the community, and overcome project obstacles will be discussed.
   Marc Lucas, Director of Major Permits and Stakeholder Management, National Grid

12:00 – 1:00 pm  Group Luncheon

“Knowing very little about underground transmission, this conference peaked an interest to learn more.”
   Engineer 2, Pepco

“This was well worth the travel and time commitment. The vendor interactions made my trip so worthwhile.”
   Lead Engineer, Duke Energy
THURSDAY, JANUARY 23, 2020 (CONTINUED)

1:00 – 1:50 pm    Installation of Submarine Cable Across Little Bay
This presentation will review the complex installation of this 115-kV submarine cable in the bay and which installation method would have the least disruption on area residents and properties, the lowest cost, as well as the shortest schedule, and would be the most appropriate method.

  **Joseph Sperry, P.E., Senior Engineer, Eversource Energy**
  **Todd Goyette, Senior Project Engineer, POWER Engineers**

1:50 – 2:30 pm   Comparison of Response to Two High Pressure Cable Fluid Leaks
This presentation will delve into the details of National Grid’s response to two separate leak incidents. The procedures and results of each will be discussed and compared while looking overall at the lessons learned from the response to these leak situations.

  **David Campilii, Consulting Engineer, National Grid**

2:30 – 3:00 pm   Networking Break

3:00 – 3:45 pm   Critical 69kV Industrial Cable System Replacement Challenges and Lessons Learned
Alliant Energy decided to replace an aging 69kV cable system feeding large industrial power customer. This presentation details the lessons learned during construction, a factory comparable partial discharge test identifying substandard accessory performance, subsequent repairs, and suspect infrared measurements under operating conditions.

  **Darrin Lamos, Manager Distribution Engineering, Alliant Energy**
  **Ben Lanz, Director, Applications Engineering, IMCORP**

3:45 – 5:00 pm   Panel Discussion on the Challenges Facing Underground Transmission Projects from Engineers, Contractors and Manufacturer’s Perspectives
Moderator: Cory Liu, Manager, Underground Transmission Line Engineering, Eversource

  **Dennis Johnson, Senior Project Engineer, POWER Engineers**
  **Matthew Braunwart, COO, Hawkeye**
  **Dennis O’Reilly, Senior Manager, Sargent & Lundy LLC**
  **Jim McNulty, Director, Northeast Region, WA Chester**
  **Bill Crawford, Vice President, Engineering, The Okonite Company**
  **Abhi Huli, Senior Engineer, Haley & Aldrich**

5:00 – 6:00 pm   Networking Reception

“**The EUCI Underground Transmission conference has given me the opportunity to expand my network with other professionals in the industry and has elevated my motivation to engineer for the future.**”

  Engineer, Arizona Public Service

“**This is a great opportunity for everyone who is interested in underground transmission lines and related issues. Clearly a snapshot of the industry at this moment. Attend with limited knowledge and be able to understand the industry vision and wide range practices around the world.**”

  Sr. Transmission Lines Engineer, AltaLink
AGENDA
FRIDAY, JANUARY 24, 2020

8:00 – 8:30 am  Continental Breakfast

8:30 – 9:15 am  Sylmar Ground Return System-Ocean Electrode
The presentation highlights the construction activities of this LADWP project. The Sylmar Ground Return System, or SGRS is an important part of the Pacific Direct Current Intertie System, referred to as PDCI. The PDCI is a bi-directional direct current transmission system that connects the Pacific Northwest to the Southern California region.

Maryam Mousavi, PE, Supervisor - Underground Transmission Engineering,
Los Angeles Department of Water and Power

9:15 – 10:00 am  Composite Reinforcement Solutions for High-Pressure Piping Systems
Traditional repair methods for identified defects in high-pressure, fluid filled feeder lines include welding a larger diameter pipe around the defect. In order to provide a long-term life extension to defects in their feeder system, Consolidated Edison turned to modern composite reinforcement technologies. High strength carbon fiber reinforcement provides a permanent solution, creating a fully structural repair applied to the feeder pipe online without any welding.

Russell Giudici, President, Advanced FRP Systems
Carlos Barrientos, Director of Special Projects, Advanced FRP Systems
M. John Constable, Senior Engineer, Consolidated Edison of NY

10:00 – 10:20 am  Networking Break

10:20 – 11:05 am  Existing Options for Reconductoring of Both HPFF and HPGF Circuits
WA Chester and Onstream have collaborated on MFL inspections through existing empty pipe, which details pipe wall integrity, paving the way for both standard pipe type cable & XLPE reconductoring. This presentation will review options and learned lessons for these reconductoring projects.

Jim McNulty, Director, Northeast Region, WA Chester
Joe Chan, Director of Business Development, Onstream

11:05 – 11:50 am  Insights from Installing Multiple Underground Circuits
This presentation will highlight multiple installation projects for utilities and will detail the items that utility staff and engineers should know about these complicated projects. This sharing of information and what to look for in construction/installation is a valuable addition for a utility employee’s knowledge of underground transmission circuits.

Matthew Braunwart, COO, Hawkeye

11:50 am  Conference Adjourns

“Information on a Journeyman level.”

Project Manager, New River Electrical Corp.

“A great conference that introduces attendees to other professionals in the field.”

Project Engineer, Electrical Consultants Inc.
PRE-CONFERENCE WORKSHOP

Underground Transmission 101

WEDNESDAY, JANUARY 22, 2020

8:00 – 8:30 am  Registration and Continental Breakfast
8:30 am – 5:00 pm  Workshop Timing
12:00 – 1:00 pm  Group Luncheon

OVERVIEW

Underground transmission is a costly and complicated option for transmission projects. This workshop will provide an in-depth overview of underground systems, technology, construction, and installation. This is the ideal workshop for engineers new to underground transmission projects, regulatory staff that needs an overview to evaluate project options and vendors and contractors that support utilities as they build new transmission.

LEARNING OUTCOMES

• Review underground transmission technology and systems
• Examine the basics of underground design and construction
• Discuss the components and types of cable design & manufacturing
• Examine the design factors, considerations and components of cable system ampacity

AGENDA

WEDNESDAY, JANUARY 22, 2020

8:00 – 8:30 am  Registration and Continental Breakfast
8:30 am – 5:00 pm  Course Timing
  • Underground Transmission Technology Overview
    o Available Technology
    o Drivers
10:00 – 10:15 am  Networking Break
  • Basics of Underground Design
    o Preliminary Design Considerations
    o Route Selection
    o Design Considerations
    o Installation Considerations
12:00 – 1:00 pm  Group Luncheon
WORKSHOP AGENDA (CONTINUED)

WEDNESDAY, JANUARY 22, 2020 (CONTINUED)

- Cable Design & Manufacturing
  - Conductor Materials & Design
  - Insulation Materials, Thicknesses and Electrical Stress
  - Shielding Materials and Design
  - Jacket Materials

2:30 – 2:45 pm  Networking Break

- Cable System Ampacity
  - Problem Statement
  - Thermal Circuit Model
  - Temperature Limitations (Conductor, Soil)
  - Grounding & Bonding Considerations
  - Backfills
  - Emergency Calculations

WORKSHOP INSTRUCTORS

Dennis Johnson
Senior Project Engineer, POWER Engineers

Dennis Johnson has more than 30 years of experience in the design and construction of underground transmission and distribution systems. He has served as a design and project engineer on numerous underground transmission projects at voltages ranging from 69 kV to 500 kV. Mr. Johnson is an active voting member of the IEEE Insulated Conductors Committee (ICC). He is a member of various ICC subcommittees that are developing guides and standards for high voltage underground cable systems.

Todd Goyette
Senior Project Engineer, POWER Engineers

Todd Goyette joined POWER Engineers in November of 2012 and is a senior project engineer in the underground transmission group. He has over 23 years of experience in many aspects of high voltage and extra high voltage underground cable projects including design, permitting & licensing, construction and operation & maintenance. He has experience with self-contained fluid filled, high pressure fluid filled, high pressure gas filled and extruded dielectric cable systems. Prior to joining POWER, Todd worked for National Grid, a large investor-based utility, for 18 years performing similar functions. He serves on several working group committees for the IEEE Insulated Conductors Committee. He holds a Bachelor of Science and Master of Science degree in Electrical Engineering from Worcester Polytechnic Institute and is a registered Professional Engineer in several New England states.

"EUCI workshops are always an outstanding way to learn and share knowledge about current trends in the energy sectors."

Environmental Specialist, Ecology & Environment Inc.
INSTRUCTIONAL METHODS

This conference will use case studies and PowerPoint presentations.

REQUIREMENTS FOR SUCCESSFUL COMPLETION

Participants must sign in/out each day and be in attendance for the entirety of the conference to be eligible for continuing education credit.

IACET CREDITS

EUCI has been accredited as an Authorized Provider by the International Association for Continuing Education and Training (IACET). In obtaining this accreditation, EUCI has demonstrated that it complies with the ANSI/IACET Standard which is recognized internationally as a standard of good practice. As a result of their Authorized Provider status, EUCI is authorized to offer IACET CEUs for its programs that qualify under the ANSI/IACET Standard.

EUCI is authorized by IACET to offer 0.9 CEUs for the conference and 0.7 CEUs for the workshop.

REGISTER 3, SEND THE 4TH FREE

Any organization wishing to send multiple attendees to this event may send 1 FREE for every 3 delegates registered. Please note that all registrations must be made at the same time to qualify.

EVENT LOCATION

The event is located at the Hyatt Regency Boston, One Avenue Lafayette Boston, MA 02111. A room block has been reserved for the nights of January 22-23, 2020. Room rates are US $179. Call 1-617-521-6333 or visit the website for reservations. Mention the EUCI event to get the group rate. The cutoff date to receive the group rate is January 6, 2020 but as there are a limited number of rooms available at this rate, the room block may close sooner. Please make your reservations early.

SPONSORSHIP OPPORTUNITIES

Do you want to drive new business through this event’s powerful audience? Becoming a sponsor or exhibitor is an excellent opportunity to raise your profile before a manageably sized group of executives who make the key purchasing decisions for their businesses. There is a wide range of sponsorship opportunities available that can be customized to fit your budget and marketing objectives, including: Platinum, Gold, or VIP sponsor, Reception host, Networking break host, Tabletop exhibit, Workshop sponsor, Lanyard sponsor, Luncheon host and Breakfast host.

Please contact Keith Clark at kclark@euci.com or 720-988-1238 for more information.
Substitutions & Cancellations

Your registration may be transferred to a member of your organization up to 24 hours in advance of the event. Cancellations must be received on or before December 20, 2019 in order to be refunded and will be subject to a US $195.00 processing fee per registrant. No refunds will be made after this date. Cancellations received after this date will create a credit of the tuition (less processing fee) good toward any other EUCI event. This credit will be good for six months from the cancellation date. In the event of non-attendance, all registration fees will be forfeited. In case of course cancellation, EUCI’s liability is limited to refund of the event registration fee only. For more information regarding administrative policies, such as complaints and refunds, please contact our offices at 303-770-8800.

EUCI reserves the right to alter this program without prior notice.

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ENERGIZE WEEKLY

Energize Weekly is EUCI’s free weekly newsletter, delivered to your inbox every Wednesday. We provide you with the latest industry news as well as in-depth analysis from our own team of experts. Subscribers also receive free downloadable presentations from our past events.

Sign me up for Energize Weekly

REGISTRATION INFORMATION

Mail Directly To:
EUCI
6400 S Fiddlers Green Cir., Suite 1620
Greenwood Village, CO 80111
OR, scan and email to: conferences@euci.com

PLEASE SELECT

- **BUNDLE PRICE: UNDERGROUND TRANSMISSION CONFERENCE 2020**
  - Early bird on or before January 10, 2020: US $1995

- **UNDERGROUND TRANSMISSION CONFERENCE 2020 ONLY**
  - JANUARY 23-24, 2020: US $1395
  - Early bird on or before January 10, 2020: US $1195

- **PRE-CONFERENCE WORKSHOP ONLY: UNDERGROUND TRANSMISSION 101**
  - WEDNESDAY, JANUARY 22, 2020: US $995
  - Early bird on or before January 10, 2020: US $895

- **I'M SORRY I CANNOT ATTEND, BUT PLEASE EMAIL ME A LINK TO THE CONFERENCE PROCEEDINGS FOR US $395**

How did you hear about this event? (direct e-mail, colleague, speaker(s), etc.)

Print Name

Job Title

Company

What name do you prefer on your name badge?

Address

City

State/Province

Zip/Postal Code

Country

Phone

Email

List any dietary or accessibility needs here

CREDIT CARD INFORMATION

Name on Card

Billing Address

Account Number

Billing City

Exp. Date

Billing State

Security Code (last 3 digits on the back of Visa and MC or 4 digits on front of AmEx)

Billing Zip Code/Postal Code

OR Enclosed is a check for $ to cover __________ registrations.

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