

# HYDROPOWER 101

**September 11, 2017**  
**Embassy Suites**  
**Alexandria Old Town**  
**Washington, DC**

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**INTRODUCTION TO FERC HYDROPOWER**

September 12, 2017 | Washington, DC

**FERC HYDROPOWER LICENSING**

September 13, 2017 | Washington, DC

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0.8 CEUs for the  
course

## OVERVIEW

This course will present a basic overview of hydropower operations, including: how hydropower works, project types and definitions, and benefits and challenges associated with hydropower. Attendees will learn about hydropower development in North America and throughout the world. They will discuss the costs associated with hydropower. Our expert speaker will discuss engineering considerations, including: flood control, irrigation, navigation, fish passage, entrainment mortality, in-stream flows, water quality, ramping rate, recreation, and dam safety. Attendees will receive an overview of hydropower relicensing. They will discuss the EPA's Clean Power Plan.

The intent is that participants will be able to apply the information learned the first day they return to their jobs. Hands-on activities will be included throughout the day.

## LEARNING OUTCOMES

- Define water power
- Examine project types and definitions
- Discuss how hydropower works
- Identify the costs associated with hydropower
- Describe hydropower development in North America and throughout the world
- Examine the regulatory considerations
- Analyze the benefits and challenges of hydropower
- Review engineering considerations associated with hydropower, including: flood control, irrigation, navigation, fish passage and entrainment mortality, in-stream flows, water quality, ramping rate, recreation, dam safety
- Discuss hydropower relicensing
- Explain the value of hydropower in a changing electricity market
- Review EPA's Clean Power Plan



*“Very interesting discussions – not just a presentation.”*

IRC Manager, SNC Lavalin

REGISTER TODAY! CALL **303-770-8800** OR VISIT **WWW.EUCI.COM**

# AGENDA

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MONDAY, SEPTEMBER 11, 2017

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

**8:30 am – 5:00 pm**        **Course Timing**

**12:00 – 1:00 pm**        **Group Luncheon**

**Overview**

- Water Power - A Simple Definition
- Anatomy of a Hydropower Project
- Hydropower Project Types & Definitions

**How it All Works**

- Turbines
- Generators
- Electric Transmission

**Hydropower Costs**

- Power Calculations, Costs and Limitations
- Cost of Hydro vs. Other Electric Power Sources

**Hydropower Development**

- North America
- Global

**Regulatory**

- FERC: A Brief Introduction
- The Battle Between Federal Government and Conservationists
- Who Regulates Hydro and Who Builds the Projects

**The Effects of Hydropower**

- Benefits
- Concerns

**Hydropower Engineering**

- Flood Control
- Irrigation
- Navigation
- Fish Passage
- Entrainment Mortality
- In-Stream Flows
- Water Quality
- Ramping Rate
- Recreation
- Dam Safety

**Making Hydropower Sustainable Through Relicensing**

**Value of Hydro in a Changing Electricity Market**

**EPA's Clean Power Plan**

**Q&A**

# INSTRUCTORS



## Tom Russo

**Principal, Russo on Energy LLC**

Tom Russo is an Energy and Environmental expert with unique regulatory skills in siting energy infrastructure, markets and physical/cybersecurity.

Prior to founding Russo on Energy LLC in May 2015, Mr. Russo worked for over 30 years as a Manager and Sr. Energy Industry Analyst at the Federal Energy Regulatory Commission (FERC). During that time he amassed experience in hydropower licensing, NEPA environmental impact assessment of energy projects, business process reengineering, and natural gas and crude oil market oversight. Mr. Russo thoroughly understands the Natural Gas Act, Natural Gas Policy Act, Federal Power Act and Energy Policy Act as they apply to natural gas and hydroelectric projects. He also assisted FERC's new Energy Infrastructure Security Office with understanding physical and cybersecurity threats and vulnerabilities to natural gas, oil and gas-fired power projects and physical natural gas and related futures and swaps.

In FERC's Office of Enforcement, he managed and led efforts on the development and implementation of FERC Order 704 and FERC's Form 552 Annual Natural Gas Transaction Report program from 2008 to 2015. He also has helped numerous energy companies address FERC compliance issues in the natural gas, LNG, and hydropower area, as well as natural gas market participants in achieving compliance with transactional issues related to natural gas indices and index formation.

Mr. Russo is a native of Brooklyn, New York. He earned a credential as a Certified Information Systems Security Professional (CISSP) in 2010. He also graduated with a MBA in Finance from the George Washington University and a MS in Biology from the University of Alabama.



## Kelly R. Schaeffer

**NEPA Services Team Leader, Kleinschmidt Associates**

Kelly is the NEPA Services Team Leader at Kleinschmidt Associates with over 26 years of experience implementing NEPA and developing license applications for owners of non-federal hydroelectric projects. Her projects span the United States ranging from 25 kilowatts to over 1000 megawatts. Kelly also works on other energy projects for private clients as a NEPA third party contractor for federal agencies such as the U.S. Forest Service, Department of Energy, and EPA. Kelly specializes in developing public processes in NEPA and providing facilitation and negotiation support.

Kelly received her master's degree at the Pennsylvania State University and has served as an adjunct professor at George Mason University teaching sustainable ecotourism and leadership. Kelly currently serves as the Chair of USSD's Environment and Sustainability committee and previously served as NHA's Chair of the Regulatory Affairs Committee.

## INSTRUCTIONAL METHODS

Interactive group activities, case studies and PowerPoint presentations will be used in this program.

## REQUIREMENTS FOR SUCCESSFUL COMPLETION

Participants must sign in/out each day and be in attendance for a minimum of four hours to be eligible for any 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 0.8 CEUs for the course**

## EVENT LOCATION

A room block has been reserved at the Embassy Suites by Alexandria Old Town, 1900 Diagonal Rd, Alexandria, VA 22314, for the nights of September 10-12, 2017. Room rates are \$195 USD, plus applicable tax. Call **703-684-5900** or [click here](#) for reservations and mention the EUCI event to get the group rate. The cutoff date to receive the group rate is August 20, 2017 but as there are a limited number of rooms available at this rate, the room block may close sooner. ***Please make your reservations early.***

REGISTER TODAY! CALL **303-770-8800** OR VISIT **WWW.EUCI.COM**

# REGISTRATION INFORMATION

# EVENT LOCATION

## Mail Directly To:

Electric Utility Consultants, Inc. (EUCI)  
4601 DTC Blvd., Ste. 800, Denver, CO 80237  
OR, scan and email to: conferences@euci.com

**WWW.EUCI.COM**

**p: 303-770-8800**

**f: 303-741-0849**

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## PLEASE REGISTER

**SPECIAL PRICE FOR ALL 3 COURSES: HYDROPOWER 101, INTRODUCTION TO FERC HYDROPOWER AND FERC HYDROPOWER LICENSING:**  
SEPTEMBER 11-13, 2017 | WASHINGTON, DC: US \$2095,  
Early bird on or before August 25, 2017: US \$1895

**SPECIAL PRICE FOR 2 COURSES: (PLEASE SELECT)**

**HYDROPOWER 101 AND INTRO TO FERC HYDROPOWER COURSES:**  
SEPTEMBER 11-12, 2017 | WASHINGTON, DC: US \$1495,  
Early bird on or before August 25, 2017: US \$1295

**HYDROPOWER 101 AND FERC HYDROPOWER LICENSING COURSES:**  
SEPTEMBER 11-13, 2017 | WASHINGTON, DC: US \$1495,  
Early bird on or before August 25, 2017: US \$1295

**INTRO TO FERC HYDROPOWER AND FERC HYDROPOWER LICENSING COURSES:** SEPTEMBER 12-13, 2017 | WASHINGTON, DC: US \$1495,  
Early bird on or before August 25, 2017: US \$1295

**HYDROPOWER 101 COURSE ONLY:**  
SEPTEMBER 11, 2017 | WASHINGTON, DC: US \$795,  
Early bird on or before August 25, 2017: US \$695

## ENERGIZE WEEKLY

EUCI's Energize Weekly e-mail newsletter compiles and reports on the latest news and trends in the energy industry. Newsletter recipients also receive a different, complimentary course presentation every week on a relevant industry topic. The presentations are selected from a massive library of more than 1,000 current presentations that EUCI has gathered during its 30 years organizing courses.

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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 \_\_\_\_\_ Billing State \_\_\_\_\_

Exp. Date \_\_\_\_\_ 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.

### 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 August 11, 2017 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.