

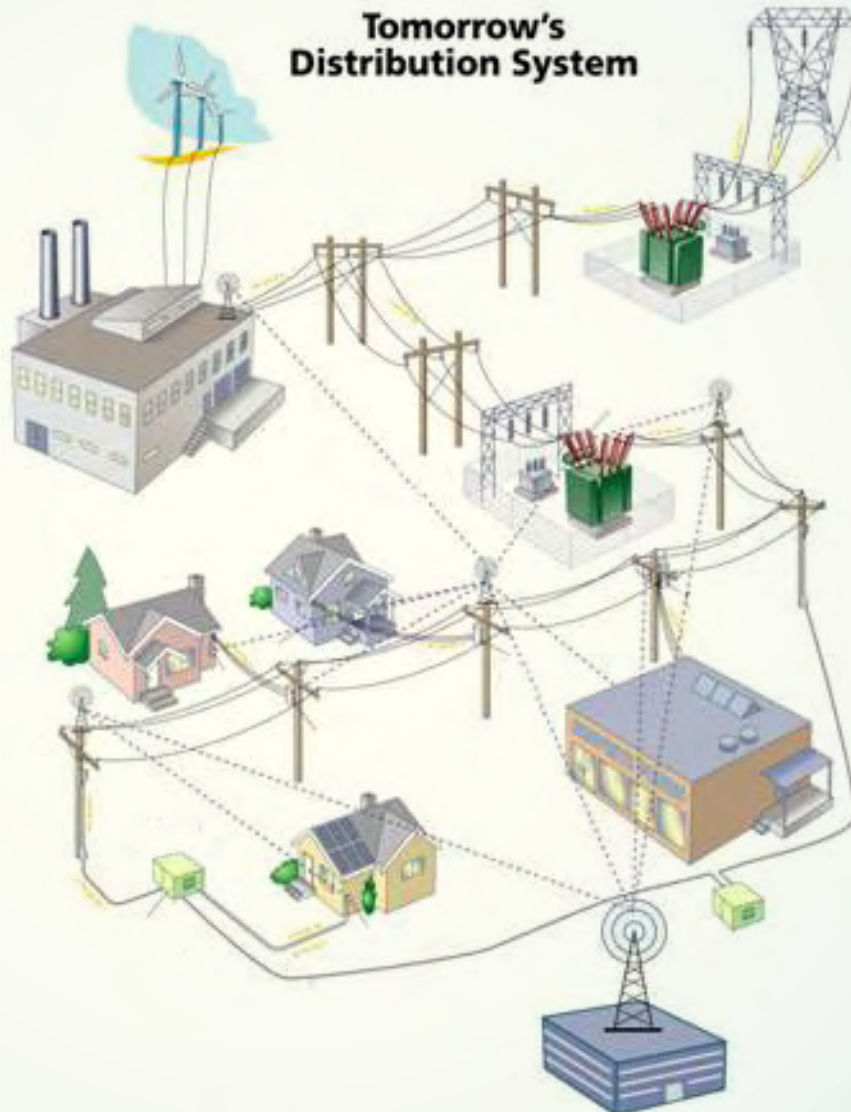
EUCI Presents Web Conferences on:

## FUNDAMENTALS OF VOLT/VAR CONTROL

MARCH 16, 2010  
12:00 – 1:30PM EASTERN TIME

## IMPLEMENTING VOLT/VAR CONTROL IN XCEL ENERGY'S SMART CITY

MARCH 18, 2010  
12:00 – 1:30PM EASTERN TIME



EUCI is authorized by IACET to offer 0.1 CEU for each program.

## FUNDAMENTALS OF VOLT/VAR CONTROL

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### OVERVIEW

Volt/VAR control facilities have been a fundamental requirement for all electric distribution feeders. The control facilities maintain acceptable voltage at all points along the distribution feeder and also maintain a high power factor. Recent efforts by electric distribution utilities to improve overall efficiency, reduce demand, and achieve better asset utilization have indicated the importance of Volt/VAR control and optimization to help accomplish these objectives. The recent influx of the Department of Energy's (DOE) Economic Stimulus grants has provided funding to enable some electric utilities to deploy Volt/VAR control systems that help accomplish these Smart Grid objectives. Implementing a successful Volt/VAR control system can be a highly technical and complex project that impacts distribution operations, engineering, IT, communication technology, and other areas of your organization. This webinar will supply practical information that will enable you to identify and avoid the potential pitfalls during implementation by sharing lessons learned by other utilities, and will separate facts from myth about Volt/VAR control.

### WHO SHOULD ATTEND

- Utility distribution directors, planners, engineers and technicians
- Utility reliability directors and engineers
- Utility personnel charged with technology innovations and Smart Grid implementations
- Budget managers of utilities
- Manufacturing technicians and engineers
- Power systems operators
- Suppliers in the electrical distribution industry
- Consultants and researchers in renewable energy
- Public utility regulators
- Utility communication professionals

### LEARNING OUTCOMES

- Identify the fundamental concepts of modern Volt/VAR control
- Analyze the benefits of Volt/VAR optimization
- List the alternative approaches for performing Volt/VAR control
- Recognize the latest vendor offerings
- Discuss the practical implementation strategies and lessons learned by other utilities

### PROGRAM AGENDA

- Fundamental concepts of modern Volt/VAR control
  - o How it works
  - o How it differs from traditional voltage control and VAR control strategies, etc.
- Benefits of Volt/VAR optimization
- Alternative approaches for performing Volt/VAR control
- Latest vendor offerings
- Practical implementation strategies and lessons learned by other utilities

### IACET



EUCI has been approved as an

Authorized Provider by the International Association for Continuing Education and Training (IACET), 1760 Old Meadow Road, Suite 500, McLean, VA 22102. In obtaining this approval, EUCI has demonstrated that it complies with the ANSI/IACET Standards which are widely recognized as standards of good practice internationally.

As a result of their Authorized Provider membership status, EUCI is authorized to offer IACET CEUs for its programs that qualify under the ANSI/IACET Standards.

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#### Requirements for Successful Completion of Program

Participants must be logged in to the web conference for its entirety to receive continuing education credit.

#### Instructional Methods

Web based PowerPoint presentation and on-line interactive question/answer session.

*(Fundamentals of VOLT/VAR Control Continued)*

## INSTRUCTOR

**Bob Uluski** of **Quanta Technology** has over 35 years of electric utility experience. He has advised a large number of North American and international electrical utilities on a wide range of issues pertaining to the planning and implementation of Distribution Automation and Substation Automation. Bob is currently serving as Subject Matter Expert (SME) for BC Hydro's Distribution Management System (DMS), which includes an advanced Volt/VAR optimization (VVO) application. In the past, Bob helped MB Hydro develop a strategy for Distribution Operation and Automation. He has authored dozens of technical papers on the topic of T&D automation and conducts the "Utility University" course on DA at DistribuTECH. He is also the principal author of *Down Line Automation – A Guidebook for Electric Distribution Cooperatives* published by NRECA's Co-operative Research Network. Bob currently serves as the Secretary of the IEEE Power Engineering Society's Working Group on Distribution Automation (DAWG), serves as an officer for the recently formed DAWG task force on Volt/VAR control, and is an active member of the group's DMS interest group.

# IMPLEMENTING VOLT/VAR CONTROL IN XCEL ENERGY'S SMART CITY

MARCH 18, 2010 :: 12:00 – 1:30 PM EASTERN TIME

## OVERVIEW

Utilities continually face system losses from reactive load, or "VAR", created by large customer load devices such as washing machines, air conditioning units, etc. To address these losses, utilities are implementing methods to regulate and reduce the amount of VAR on their systems through "Volt/VAR control" -- an all-encompassing term for many different approaches to regulating voltage and VAR on distribution feeders. By optimizing voltage and VAR control through voltage reduction, power factor optimization and conservation voltage reduction, great efficiencies can be realized on the distribution system.

Xcel Energy is very familiar with the typical Volt/VAR control approaches, but has been searching for ways to improve system performance and reliability. In addition to gains on distribution power factors, Xcel desires the ability to dispatch the line capacitors for transmission VAR support. Another interest is to evaluate the energy savings through conservation voltage reduction. As a result, Xcel Energy and CURRENT Group have teamed up to deploy a two-way centralized Volt/VAR control solution in Boulder as part of the SmartGridCity project. This presentation will discuss two-way centralized Volt/VAR control, as implemented in Boulder, and how it allows Xcel Energy to optimally regulate VARs while maintaining voltages.

## WHO SHOULD ATTEND

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- Utility reliability directors and engineers
- Utility personnel charged with technology innovations and smart grid implementations
- Suppliers in the electrical distribution industry
- Budget managers of utilities
- Manufacturing technicians and engineers
- Power systems operators
- Consultants and researchers in renewable energy
- Public utility regulators
- Information technology and communication professionals

*(Implementing VOLT/VAR Control in Xcel Energy's Smart City Continued)*

## LEARNING OUTCOMES

- Attendees of this web conference will be able to:
- Describe the Smart Grid value chain
  - Identify solutions to minimize technical losses and reduce overall load without requiring a change in customer behavior
  - List the traditional approaches to VAR
  - Analyze what problems those approaches create
  - Recognize the benefits of two way centralized control
  - Discuss the solution deployed at Xcel
  - Define the key benefits for utilities that implement Volt/VAR control

## PROGRAM AGENDA

- Introduction to the Smart Grid value chain and the intelligent distribution solution space
- Solutions to address technical losses, voltage profile challenges, and load reduction
- Traditional approaches to Volt/VAR
- Issues with traditional approaches
- Benefits of two-way centralized control
- Solution deployed at Xcel
- Volt/VAR software features

## INSTRUCTOR

**Brian Deaver** is **Vice President of Product Management** for **CURRENT Group**. Mr. Deaver brings over 24 years of experience in the electric transmission and distribution industry with extensive experience in substation and distribution automation, reliability improvement, electric distribution planning, and advanced real time control systems.

Previously, Mr. Deaver was Principal Engineer of System Control for Baltimore Gas and Electric, a wholly-owned subsidiary of Constellation Energy, which delivers power to more than 1.2 million electric customers in Central Maryland. At BGE, Mr. Deaver was responsible for substation SCADA, substation automation, distribution automation, volt/VAR regulation and was the lead engineer on BGE's comprehensive Electric System ReDesign Program. Mr. Deaver earned a Bachelor of Science in Electrical Engineering from the University of Maryland at College Park, and has been a Registered Professional Engineer in the State of Maryland since 1994.

## LOGGING IN TO THE WEB CONFERENCE

After registration, each registrant will receive a confirmation of payment or an invoice, depending on method of payment. Each registrant will also receive an e-mail with appropriate login information and more information regarding the event 24 hours prior to the start of the event. To log on, you will need a broadband connection and audio system.

### WHAT IS A SINGLE SITE CONNECTION?

A site connection allows a single connection to the web conference. That connection is open to any number of users in a collaborative setting. Because there are no travel expenses and only a single registration fee is required, each additional participant lowers the cost per participant significantly.

By purchasing a site connection, you can invite as many people as you would like to view and participate in the session from a single location. Set up the session in a conference room and project the presentation and chat on a large screen. You also have rights to distribute copies of the presentation materials to everyone involved. Please note that audio is received via the computer sound system and must be broadcast to your group.

If for any reason a relevant stakeholder cannot co-locate for the session, we encourage you to include that person by purchasing an additional connection at the reduced fee of US \$195 per session. This will ensure that every member of a team receives the same relevant, timely information in the most efficient way.

if you have any technical or purchasing questions, please contact us at (201) 871-0474.

Start Time: 12:00 PM Eastern Time

United States Regional Start Times:

9:00 AM Pacific :: 10:00 AM Mountain :: 11:00 AM Central :: 12:00 PM Eastern

Use the time zone converter (<http://www.timezoneconverter.com/cgi-bin/tzc.tzc>) to find your correct start time.

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## FIVE EASY WAYS TO REGISTER

**One: CALL**  
(201) 871-0474

**Two: FAX**  
(253) 663-7224

**THREE: E-MAIL**  
register@pmaconference.com

**FOUR: MAIL**  
PMA  
P.O. Box 2303  
Falls Church, VA 22042

**Five: WEB SITE**  
www.pmaconference.com

## REFUND / CANCELLATION POLICY

All cancellations received prior to February 26, 2010 will be subject to a US \$50 processing fee per web conference per registrant. Written cancellations received after this date will create a partial credit of the tuition good toward any other EUCI conference, publication or web conference. This credit will be valid for six months. No refunds will be given after February 26, 2010 in any case. In case of conference cancellation, EUCIs' liability is limited to refund of the conference registration fee only.

## PLEASE REGISTER THE FOLLOWING

- Both Fundamentals of VOLT/VAR Control and Implementing VOLT/VAR Control in Xcel Energy's Smart City Conferences, March 16 & 18, 2010, Single Site Connection: US \$600  
**Early Bird on or Before March 15, 2010: US \$550**
- Fundamentals of VOLT/VAR Control Conference, March 16, 2010, Single Site Connection: US \$345  
**Early Bird on or Before March 15, 2010: US \$295**
- Implementing VOLT/VAR Control in Xcel Energy's Smart City Conference, March 18, 2010, Single Site Connection: US \$345  
**Early Bird on or Before March 15, 2010: US \$295**
- Additional Connections: US \$245,  
**Early Bird on or Before March 15, 2010: US \$195 each**  
Number of additional connections: March 16th: \_\_\_\_\_ March 18th: \_\_\_\_\_
- Web Conference Presentations Available on CD:**  
CDs are available 48 hours after the web conference is complete. The cost per CD is US\$295 [add US\$50 for international shipments]. Upon receipt of order and payment the CD will be shipped to you.  
NOTE: All presentation CD sales are final and are non-refundable.

### ENERGIZE WEEKLY

When you sign up for "Energize Weekly" you will receive a new conference presentation each week via email on a relevant industry topic. The presentations are selected from a massive library of over 1000 current presentations that EUCI has gathered during its 22 years organizing conferences.

**Sign me up for "Energize Weekly"**

How did you hear about this event?  
(Direct email, Colleague, Speaker(s), etc.)  
\_\_\_\_\_

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## PAYMENT METHOD

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