



EUCI Presents a Web Conference on:

# THE ROLE OF UNCERTAINTY IN MANAGING AGING ASSETS IN ELECTRIC UTILITY SYSTEMS

February 24, 2010



2:30 – 4:00 PM Eastern Time



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

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## OVERVIEW

The purpose of this webinar is to discuss the three fundamental uncertainties that are present in the problem of managing aging assets in electric utility systems. The three fundamental uncertainties are (1) asset failure, which is an uncertain event; (2) asset condition, which is an uncertain description of the asset at any point in time (such as *Excellent*, *Satisfactory* or *Critical*); (3) asset test accuracy, which is a consequence of the fact that tests aimed at revealing the true condition of an asset are not perfect.

Each uncertainty can be described, represented mathematically, characterized by data, measured, and hence managed. However, in many instances, these uncertainties are neither measured nor managed. The consequences of not treating these uncertainties correctly are described in this webinar.

The main consequences are (1) likelihood of asset failure is not correctly specified; (2) how asset failure likelihood changes over time and with use is not correctly specified; (3) test results are not interpreted correctly; (4) utilities and asset managers do not assess the risk associated with operating aging assets correctly. The main result of these errors is that utilities and asset managers are typically operating at greater risk than they believe they are and therefore are expected to incur greater costs than they believe they are incurring. This webinar provides a methodology for measuring these uncertainties and managing them correctly.

## LEARNING OBJECTIVES

- Characterize asset management as a problem in managing uncertainty
- Define the three fundamental uncertainties in asset management
- Identify how best to measure each of the uncertainties in asset management
- Review how to manage the uncertainties in asset management
- Measure the consequences of not managing or failing to specify the uncertainties in asset management

## AGENDA

1. The Asset Management Problem
  - a. Problem statement
  - b. Problem importance–strategic questions
  - c. Management objective
2. Solving the Asset Management Problem
  - a. Methodology–structure
  - b. Methodology–outputs
  - c. Role of uncertainty–three kinds of uncertainties in management of aging assets
3. Uncertainties in Asset Management
  - a. Asset failure
  - b. Asset condition
  - c. Test results and condition updating
4. Measuring Uncertainties; Risks in Asset Management
  - a. Condition-dependent hazard rates; analysis traps (how not to use data)
  - b. Expected value criterion
  - c. Use of information and updating asset condition specification
5. Consequences of Uncertainties in Asset Management
  - a. Optimal management policy
  - b. Replacement age
  - c. Measurement of outage risk; minimizing total expected cost
6. Data Requirements
7. Summary and Conclusions; Further Discussion

## IACET



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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.

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## INSTRUCTORS

**Charles D. Feinstein** is **Associate Professor of Operations and Management Information Systems** at the **Leavey School of Business, Santa Clara University**. Dr. Feinstein is Co-Founder of VMN Group LLC, a quantitative consulting company. He also teaches in the Department of Management Science and Engineering at Stanford University and in the Department of Industrial Engineering and Operations Research at the University of California, Berkeley. Dr. Feinstein has over 25 years of experience in research, teaching and application of mathematical methods and modeling. His areas of expertise include optimization, decision analysis, system dynamics, and systems analysis. His previous employment includes positions as a Senior Decision Analyst at Applied Decision Analysis, Inc. and as a Research Engineer at Xerox Palo Alto Research Center (PARC). He has been active in the academic and professional communities and has published more than fifty technical papers and reports (including several EPRI reports) as well as presented many lectures on both theoretical and applied research. His current interests include investment planning and risk analysis, with particular application to the electric power industry. He has written and presented extensively on managing aging infrastructure, project prioritization methodologies, and electric power distribution system risk analysis.

## 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 (303) 770.8800.

Start Time: 2:30 PM Eastern Time

United States Regional Start Times:

11:30 AM Pacific :: 12:30 PM Mountain :: 1:30 PM Central :: 2:30 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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## REGISTRATION INFORMATION

Mail or fax this form along with payment. You will receive a confirmation and/or invoice within 48 hours. Make checks payable to EUCI.

### MAIL DIRECTLY TO:

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## REFUND / CANCELLATION POLICY

All cancellations received prior to February 5, 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 5, 2010 in any case. In case of conference cancellation, EUCI's liability is limited to refund of the conference registration fee only.

## PLEASE REGISTER THE FOLLOWING

- Both The Role of Uncertainty in Managing Aging Assets in Electric Utility Systems, February 24, 2010 Managing Aging Assets in Electric Utility Systems, February 17, 2010 Web Conferences, Single Site Connection: US \$600  
**Early Bird on or Before February 16, 2010: US \$550**

- The Role of Uncertainty in Managing Aging Assets in Electric Utility Systems, February 24, 2010, Single Site Connection: US \$345  
**Early Bird on or Before February 23, 2010: US \$295**

- Additional Connection: US \$245,  
**Early Bird on or Before February 23, 2010: US \$195 each**  
Number of additional connections: \_\_\_\_\_

### 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.*

- Principles of Managing Aging Assets in Electric Utility Systems CD  
 The Role of Uncertainty in Managing Aging Assets in Electric Utility Systems CD

### ENERGIZE WEEKLY

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- Sign me up for "Energize Weekly"

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(Direct email, Colleague, Speaker(s), etc.)

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