

34th Annual

**ELECTRIC  
UTILITY  
CHEMISTRY  
WORKSHOP**

June 3–5, 2014



**EXTENDING THE LIFE AND RELIABILITY OF POWER PLANT  
EQUIPMENT THROUGH IMPROVED CHEMICAL CONTROL**

Hawthorn Suites by Wyndham Champaign  
Champaign, Illinois

[www.conferences.illinois.edu/eucw](http://www.conferences.illinois.edu/eucw)

Sponsored by the University of Illinois at Urbana-Champaign  
Center for Innovation in Teaching & Learning  
Prairie Research Institute—Illinois State Water Survey



# About the Workshop

Now in its 34th year, this comprehensive program features state-of-the-art information on controlling corrosion and improving operation efficiency for fossil- and nuclear-fueled power plants. This year's program is geared toward improved training and continuing education of personnel responsible for electric utility chemistry.

More than 3,500 chemists, consultants, and power plant administrators have attended the workshop since its inception in 1981. The 2014 program was developed by a committee of representatives from Midwestern electric utilities, the Illinois State Water Survey, the University of Illinois at Urbana-Champaign, and consultants serving the power industry.

Some of the most popular features of the workshop are the Utility Experience presentations, in which seasoned profes-

sionals from utility companies discuss their experiences on a range of topics. The entire workshop has been structured to encourage participation from attendees.

A USB memory stick containing copies and/or outlines of papers presented, current water treatment papers, and reports is included in the registration fee.

## WHO SHOULD ATTEND ■

This workshop is specifically designed for personnel involved in day-to-day decisions affecting the performance of electric utility generation in fossil-fueled and nuclear power plants. The program applies equally to power plant chemists and engineers, as well as power plant designers and consultants, industrial and institutional plant engineers, managers, and operators.

## CONTINUING EDUCATION UNITS ■

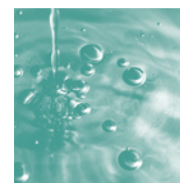
Each participant completing the workshop is eligible for 1.4 Continuing Education Units (CEUs) from the University of Illinois at Urbana-Champaign. The CEUs are nationally recognized units of achievement, which may be used as evidence of increased performance capabilities and for professional advancement. If your position requires CEUs for certification renewal, please inquire at the registration desk when you arrive for the workshop.

Approval is pending for this program to apply to requirements for Wastewater Treatment Plant Operators.

This workshop also offers Professional Development Hours (PDHs) for professional engineers.

## Pre-Workshop Seminar

TUESDAY, JUNE 3, 2014 ■ 8:00-11:30 AM



## THE BASICS OF AIR & WATER ENVIRONMENTAL TREATMENT PROCESSES FOR POWER PLANTS

The Electric Utility Chemistry Workshop will feature an optional pre-workshop seminar on the basics of an important aspect of power plant water treatment. This half-day training seminar will provide fundamental information regarding air and water environmental treatment processes. The seminar will be taught by Brad Buecker, Kiewit Power Engineers, and Bill Willersdorf, Veolia Water.

The Environmental Protection Agency's "war on coal" has kept much attention focused on air emissions, including those of the greenhouse gas, carbon dioxide. However, liquid emissions from all plants, not just coal-fired units, are coming under increased regulation. The 2014 pre-conference seminar will focus upon emerging and evolving liquid effluent emissions guidelines, and will examine technologies to allow plant owners, operators, engineers, and chemists to meet new requirements. Equipment selection, additions, or modifica-

tions may influence not only wastewater treatment but other aspects of plant operation such as makeup and cooling water treatment. In some cases, zero liquid discharge (ZLD) may be the only viable wastewater treatment option. All of these issues will be examined in the seminar.

The seminar will include a hard copy of the PowerPoint slides so that attendees can take notes throughout the presentation. The format will be informal, with questions allowed during the presentations. The seminar will be held from 8:00 to 11:30 AM at the Hawthorn Suites. Use the registration form to sign up. The pre-workshop seminar registration fee includes all seminar materials and a morning break. If received on or before May 20, the fee is \$50. After May 20, the fee will be \$75. Attendance at the Electric Utility Chemistry Workshop is not required to attend this seminar.

## TUESDAY

### NOON REGISTRATION

#### 1:30 PM WELCOME

K. Anthony Selby, Workshop Chair, and Elaine Wolff, University of Illinois at Urbana-Champaign

### OPENING SESSION

#### The Use of Anodamine™ to Eliminate Oxygen Scavenger in a Mixed Alloy System

Bill Boyd, Arizona Public Service

#### Maintaining Drum Chemistry in "Phosphate Continuum" Box—Practical Aspects

Nisso Fazliddinova, Florida Power and Light

#### Best Practices for the Measurement of pH in Ultrapure Water

Fred Kohlmann, Endress+Hauser

#### Case Study of Full-Length Tube Coating and Condenser Life Extension

Keith Pearson and Larry Hill, Luminant, and Michael J. Horn and James E. Mitchell, Plastocor

#### Achieving Excellence in Cycle Chemistry

Randy Turner, Swan Analytical

#### Optimizing Water Use and Minimizing Wastewater Generation within the Power Plant

Colleen M. Layman and Josh Prusakiewicz, HDR Engineering, Inc.

#### Review of Boiler Tube Corrosion Gouging Mechanisms

Mel J. Esmacher and K. Michael Adeosun, GE Power & Water, Water & Process Technologies

### 5:30 PM RECEPTION AND VENDOR DISPLAY

Vendors in the industry will have displays of their latest products and services for participants to view during the reception. Check the Web site, [www.conferences.illinois.edu/eucw](http://www.conferences.illinois.edu/eucw), for a list of vendors.

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Tuesday

“Offers the best value for training for the money.”

## WEDNESDAY

### 7:30 AM REGISTRATION

### 8:00 AM MORNING SESSION

#### Biocide Treatment Startup On a Once-Through Water Cooling System

Dwayne Crouse, Florida Power & Light Cape Canaveral Energy Center, and Luis J. Diaz, Florida Power & Light

#### Surrogate On-line Monitoring: Finding the "Other Stuff in the Water" Using Non-Traditional Methods

Kenneth Kuruc and Denton Slovacek, Hach Company

#### Wet Scrubber Operations

Scott D. Miller, Advatech LLC / URS Corporation

#### MATS and Monitoring for Mercury Emission Compliance

Craig Myers, NIPSCO

#### Steps Taken to Reduce Future HP Turbine Deposition at the Rush Island Energy Center

Chris Taylor, Ameren Missouri

#### The Environmental Avalanche Continues—Part 3

Bert C. Valenkamph, NIPSCO

#### The Problems with HRSG's

Joseph E. Schroeder, J.E.Schroeder Consulting LLC

### LUNCH (PROVIDED)

### 1:00 PM AFTERNOON SESSION

#### Optical Dissolved Oxygen Measurement Rapid Response and Reliability

Peggy Banarhall, Mettler Toledo Process Analytics

#### Antiscalant Reduces Bottom Ash Dewatering System Maintenance and Overall Plant Total Cost of Operations

Kevin Boudreaux, Nalco

#### Use of Filming Amines in Power Plant Boiler Systems

Daniel Cicero, Nalco

#### Commissioning of Combined Cycle Plants—Chemistry Program Aspects from Construction through Year One of Operation

Nicole Grant, FPL—Power Generation Division, NextEra Energy

#### Cathodic Protection—A Tutorial for Power Plant Chemists

George J. Licina, Structural Integrity Associates

#### Phosphate Hideout at Labadie Energy Center Following Chemical Cleanings

Chuck Roberts, Ameren Missouri

#### Sample Panel Modifications—A Practical Diagnostic Guide

Ben Toon, Sentry Equipment

#### Startup of a Flue Gas Desulfurization (FGD) Wastewater Treatment System While Addressing Regulatory Uncertainties Within Proposed Effluent Limitation Guidelines

Cathy Ortiz-Wiegele, Northern Indiana Public Service Company

### 5:30 PM ADJOURN

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Wednesday

## THURSDAY

### 7:30 AM REGISTRATION

### 8:00 AM CLOSING SESSION

#### X-Ray Fluorescence Spectroscopy (XRF)—Applications for Strong Base Anion Resins

Debbie Schroeder, Dave Moyer and Greg Bachman, Siemens Water Technologies, and Matthew Branham, Duke Energy

#### Trouble Shooting an Ion Exchange Mixed Bed Unit—Part 2: What Are the Resin Problems?

Don Downey, Purolite

#### Silica Leakage in Demineralizer Operation—Practical Solutions in Troubleshooting

Scott Holloway, Buckman North America

#### Advances in On-site Sodium Hypochlorite Generation Technology

Thom Tackman, Microchlor

#### Improving Safety and Reliability in a Steam and Water Sampling System

David Webster, Solutions, Inc., and Troy Tallent and Greg Gray, American Electric Power Southwestern Station

#### Reduction in Condenser Biofouling and Backpressure Using Proprietary Halogen-Based Biocide

Robert Mitzel, Dynegy

### 12:00 PM ADJOURN

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Thursday

“The workshop provides great opportunities to talk with other professionals in my field.”

# General Information

## REGISTRATION ■

The full-meeting registration fee includes all conference materials, Tuesday reception, Wednesday lunch, and morning and afternoon breaks. If received on or before May 20, the fee is \$400. After May 20, the fee will be \$450.

Single-day registration is also available. The registration fee of \$225 includes meals or breaks served on the day you attend, speaker handouts for that day, and a participant roster.

The pre-workshop seminar registration fee includes all seminar materials and morning break. If received on or before May 20, the fee is \$50. After May 20, the fee will be \$75.

Payment in full is expected upon registration. Please use the registration form as your invoice. Phone or fax registrations must have a credit card number. Payment by cash, check, or credit card must accompany all on-site registrations.

## LOCATION ■

All program sessions will be held at the Hawthorn Suites by Wyndham Champaign, 101 Trade Centre Drive, Champaign, Illinois 61820. Phone: 217-398-3400.

Workshop Schedule: Registration for the regular workshop begins Tuesday, June 3 at noon, followed by the Opening Session from 1:30 to 5:30 PM. A social hour from 5:30 to 8:00 PM gives participants the opportunity to talk with colleagues, vendors, and speakers. The workshop adjourns at noon on Thursday, June 5.

## VENDOR DISPLAYS ■

Companies who work with the Electric Utility Chemistry industry are encouraged to participate with a display during the conference. Invitations will be sent to past exhibitors around mid-March. Space is limited, so new companies must contact Tony Selby at 303-679-0080 or e-mail [tselby@comcast.net](mailto:tselby@comcast.net) if they are interested in being a vendor.

Cancellations: If you register and find you cannot attend, a refund, less a \$50 processing fee, will be made if you notify the CITL Conference Services office (217-244-9687 or [wolff1@illinois.edu](mailto:wolff1@illinois.edu)) by May 27, 2014. No refunds will be issued after May 27. You may send someone in your place.

## LODGING ■

Reservations should be made directly with the hotel. Be sure to mention that you are attending the "Electric Utility Chemistry Workshop," as a block of rooms has been reserved at special conference rates. Make your reservations early—after May 4, 2014, the rooms will be available on a first-come, first-served basis.

Hawthorn Suites by Wyndham Champaign  
101 Trade Centre Drive  
Champaign, IL 61820  
217-398-3400  
Conference Rate: \$74.99, Single or Double

## TRANSPORTATION ■

The Champaign (Willard) Airport offers daily flights to and from Chicago O'Hare and Dallas (by American Eagle). Amtrak service is also available. Champaign-Urbana is accessible from interstates 72, 74, and 57; it is 135 miles south of Chicago and 120 miles west of Indianapolis.

## PROGRAM PLANNING COMMITTEE ■

**Al Aschoff**, Consultant (emeritus member)  
**Bill Boyd**, Arizona Public Service  
**Brad Buecker**, Kiewit Power Engineers  
**Prentiss Carter**, Ameren  
**Chuck Curtiss**, Illinois State Water Survey  
**Steve Donner**, Donner Solutions LLC  
**Nisso Fazliddinova**, Florida Power and Light  
**Gregg Finigan**, Springfield City Water Light & Power  
**Warren Gilbert**, Consultant  
**Scott Glover**, Prairie State Generating Company  
**Ron Melton**, Western Farmers Electric Coop  
**Bob Mitzel**, Dynegy  
**Scott Reeves**, Dominion Energy  
**K. Anthony Selby**, Water Technology Consultants, Inc.  
**Chris Skates**, Electric Energy, Inc.  
**Dave Stamp**, Northern Indiana Public Service Company (NIPSCO)  
**Chris Taylor**, Ameren Missouri  
**Shane White**, Springfield City Water Light & Power  
**Ronald Wine**, Ronald D. Wine Consulting  
**Elaine Wolff**, University of Illinois at Urbana-Champaign

“My supervisor always approves my request to attend this workshop.”

**ewcw** 2014

**FOR MORE INFORMATION, CONTACT:**  
Center for Innovation in Teaching & Learning  
University of Illinois at Urbana-Champaign  
901 West University Avenue  
Urbana, IL 61801  
Phone: 217-244-9687  
Fax: 217-333-9561  
E-mail: [nsimp1@illinois.edu](mailto:nsimp1@illinois.edu)

## SESSIONS INCLUDE ■

- Critical aspects of the utility water cycle
- Tutorials given by internationally known experts
- Practical applications from electric utility experience

Format geared toward improved training and continuing education of personnel responsible for electric utility chemistry

2014 Training Session on The Basics of Air & Water Environmental Treatment Processes for Power Plants to be held on Tuesday morning (June 3)

# Registration Form

**Note: Payment in full is expected upon registration for the workshop. Please use the registration form as your invoice.**

For vendor exhibit registration, contact Nancy Simpson at 217-244-9687 or nsimp1@illinois.edu.

## 4 EASY WAYS TO REGISTER

1  
Online

[www.conferences.illinois.edu/eucw](http://www.conferences.illinois.edu/eucw)

2  
Fax

Fax your registration form to 217-333-9561.

3  
Phone

Call 217-244-9687 to register by phone.

4  
Mail

Complete the form and mail to:

Nancy Simpson  
Center for Innovation in Teaching & Learning  
University of Illinois at Urbana-Champaign  
901 West University Avenue, Suite 201  
Urbana, IL 61801 USA



Early Registration Discount through May 20

## CONTACT INFORMATION

Please type or print name exactly as it should appear on badge

First Name \_\_\_\_\_

Last Name \_\_\_\_\_

Organization \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_ Country \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_

E-mail\* \_\_\_\_\_

\*Your e-mail address will be used by the University of Illinois and will not be shared with others

Please check if attending your first Electric Utility Chemistry Workshop

## REGISTRATION FEES

The Basics of Air & Water Environmental Treatment Processes for Power Plants

\$50 (on or before May 20)  \$75 (after May 20)

Workshop Fee

\$400 (on or before May 20)  \$450 (after May 20)

One-Day Fee

\$225

Indicate which day you will attend  Tuesday  Wednesday  Thursday

Reference Materials Only

\$75 (each person with full registration receives these materials)

## METHOD OF PAYMENT

Check enclosed (make payable to the University of Illinois)

Please charge credit card  Visa  MasterCard  AmEx  Discover

Card # \_\_\_\_\_

Expiration Date \_\_\_\_\_ Security Code \_\_\_\_\_

Signature \_\_\_\_\_

The Security Code is a 3-digit, non-embossed number printed on the right upper corner of the signature panel on the back of Visa, MasterCard, and Discover cards. On American Express, the 4-digit number is printed above the account number on the front of the card. The Security Code is recorded as an additional security precaution.

## FOR OFFICE USE ONLY

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FEIN # 37-6000511 ■ TITLE: EUCW 2014 (FY14)

Cw  
Cooling Water

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Instrumentation

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Aq  
Air Quality

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Chemical Safety

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University of Illinois at Urbana-Champaign  
901 West University Avenue, Suite 201  
Urbana, IL 61801

**MAILROOM:**  
If the person on the label is no longer employed at your organization, please route this material to the replacement or department supervisor.

To receive additional information about the workshop: Call 217-244-9687 or e-mail [nsimp1@illinois.edu](mailto:nsimp1@illinois.edu).

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Air Quality

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Cw  
Cooling Water

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Instrumentation

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Aq



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