



Water/Wastewater Industry Division

Setting the Standard for Automation™

Calendar of WWID Events

Jun 28-Jul 1, 2014 **ISA Spring Leaders Meeting**
Raleigh, North Carolina, USA

Aug 5-7, 2014 **2014 ISA Water/Wastewater and Automatic Controls Symposium**
Crowne Plaza Orlando-Universal Hotel
Orlando, Florida, USA

Nov 8-11, 2014 **Fall Leaders Meeting**
Kansas City, Missouri, USA

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Winter 2014 Newsletter

Director's Welcome



Welcome to the Winter 2014 issue of our quarterly ISA Water/Wastewater Division newsletter. In this issue you learn more about our upcoming 2014 symposium, hear about the special session we put on at WEFTEC this past fall, and enjoy a technical article about cybersecurity.

In this issue you will also find information about our 2014 ISA WWID Student Scholarship Program. The scholarship has up to \$2000 available for students who are in a post-secondary technical or engineering program, with the goal of encouraging students to work in our sector. Applications are due January 31, 2014. See the application form in this newsletter for more information.

Our 2014 symposium will be taking place August 5-7, 2014 in Orlando, Florida, USA at the Crowne Plaza Orlando-Universal Hotel. In these pages you will find a wealth of information about the symposium as well as the Call for Abstracts. Our symposium chair, Kevin Patel, has been hard at work with putting together the committee for this year's conference. I invite you to get in touch with him if you would be interested in being a speaker and/or getting involved. He has assembled a great team this year, but more hands always make for less

work. Don't forget to read his Symposium Planning update on page 5 in this newsletter.

As I mentioned, the Call for Abstracts is still available for our 2014 Symposium. We welcome both seasoned and first-time presenters at our peer-reviewed symposium. The call for abstracts can be found on page 3. Don't delay – abstracts (250 word proposals about what you would like to present) are due on January 31, 2014.

The year 2014 will be another exciting year for us. This is the third year of our re-invigorated symposium and the second year of our new scholarship program. We are also hard at work strengthening our ties with other water-oriented organizations such as the Water Environment Federation (WEF), American Water Works Association (AWWA) and the Instrument Testing Association (ITA).

I encourage you to get involved in our ISA water/wastewater division. From our conference, newsletter and networking opportunities, there are many ways to get involved and benefit your career.

Warmest Regards,

Graham Nasby, P.Eng., PMP
Director
ISA Water/Wastewater Division

Message from your Director-Elect



The Winter season is one of my favorites. Not only do we get a break from the heat in the Texas area, but we have the holidays. The holidays not only bring an opportunity to visit family and look back on the past year's accomplishments, but it also allows us to ring in the new year with personal goals in mind. One of my personal goals is to continue remaining active in ISA and in particular being a part of a successful 2014 ISA WWAC Symposium. This success from this event is only as good as the team that helps put it together. We have assembled a veteran group of volunteers to help mold the program and ensure that all the activities planned throughout the week are beneficial for our members.

It seems like it was just yesterday that the 2013 ISA WWAC Symposium was taking place, but in reality it was nearly 5 months ago and we are deep in the preparations of the 2014 ISA WWAC Symposium. We have received a lot of good feedback on how informative and focused the event was in 2013. We are hoping to pick back up right where we left off last year. We have some exciting new ideas and presentations that the program committee has helped put together. I would encourage all WWID members to stay up-to-date on symposium happenings on the website at www.isawwsymposium.com.

I encourage you to read in this newsletter about our upcoming 2014 WWAC Symposium that is scheduled for Aug 5-7, 2014 in Orlando, Florida, which I truly feel has been getting better each and every year. I also encourage you to submit an abstract for our call for abstracts which will be closing at the end of January. The symposium is a great time to meet new professionals in our industry and share knowledge that will help you become better throughout your career. I hope to see you there!

As a final note, I want to say that what we are seeing is that the water/wastewater market is continuously evolving and automation is playing a bigger and bigger part of this evolution. It is great to be involved in an industry that is continuously in demand. As part of the symposium we plan to take a look at where the water/wastewater sector has been and where our industry experts believe it will be in the future and how automation will essentially be the glue that makes the future a reality.

It's an exciting time of the year with a fresh new beginning with lots to look forward to. Make sure you keep up with all the latest water/wastewater and automation news at our website and by attending the symposium.

Respectfully,

Kevin Patel, PE, MBA
WWID Director-Elect

2014 WWAC Symposium Announced

We are pleased to announce that our 2014 symposium will be taking place August 5-7, 2014 at the Crowne Plaza Orlando-Universal hotel in Orlando, Florida, USA.

2014 CALL FOR ABSTRACTS NOW AVAILABLE


250-word abstracts are due **January 31, 2014**.
Authors can present a 30 minute presentation,
6-12 page paper, or a large format poster.
See www.isawwsymposium.com for more info

The August 5-7, 2014 timeslot has been chosen so that we don't conflict with the major AWWA and WEF conferences. Keep in mind the ISA WWAC Symposium is the only conference that is focused solely on instrumentation, automation, and SCADA in the water/wastewater sector. We look forward to seeing you in 2014!

- ACE14: American Water Works Association (AWWA)
June 8-12, 2014 – Boston, Massachusetts USA
- **2014 ISA Water/Wastewater and Automatic Controls Symposium** - Crowne Plaza Orlando-Universal Hotel
August 5-7, 2014 - Orlando, Florida, USA
- WEFTEC 2014: Water Environment Federation (WEF)
Sept 27 – Oct 1, 2014 – New Orleans, Louisiana, USA





We have selected the August timeslot for several reasons. First of all this is "low season" for the area which translates into better airline and hotel rates – we know that many of our attendees come from public utilities where every training dollar counts.

We also selected the August timeslot so that participants can bring their families – in August school is out and Walt Disney World is just around the corner.

**ISA Water/Wastewater and Automatic Controls Symposium**
AUGUST 5 -7, 2014
Crowne Plaza Orlando - Universal Hotel • Orlando, FL **SAVE THE DATE**

Call for Abstracts Now Available:	Highlights:
• 250 Word Submissions	• 2.5 Day Symposium
• Due January 31, 2014	• Short courses on Cybersecurity and
• Speaker Registration Rate \$125	• Troubleshooting Instrumentation & Control Systems
<small>See Website for Complete Details</small>	• Attendee Registration Rate \$425
	<small>Discounts for ISA, AWWA and WEF members</small>

Presented by the ISA Water and Wastewater Industries Division, in collaboration with WEF Automation and Info Tech Committee, the Florida AWWA Section, Florida Water Environment Association, the ISA Tampa Bay Section, and the Instrumentation Testing Association, the WWAC Symposium helps professionals in the water and wastewater sectors understand how to use instrumentation, SCADA (supervisory control and data acquisition), and automatic control applications for purification, distribution, collection, and treatment of water and wastewater.

 Technical co-sponsor	 Technical co-sponsor	 Technical co-sponsor	 Technical co-sponsor
--------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------

www.isawwsymposium.com

2014 ISA Water/Wastewater and Automatic Controls Symposium

August 5 to 7, 2014.....Crowne Plaza Orlando-Universal Hotel.....Orlando, Florida, USA

Presented by the ISA Water/Wastewater Industries Division – www.isawwsymposium.com

Technical co-sponsors: Florida AWWA Section, the WEF Automation and Info Tech Committee , Florida Water Environment Association, Instrumentation Testing Association, and ISA Tampa Bay Section



Call for Abstracts

Presented by the ISA Water/Wastewater Industries Division, in collaboration with the Florida Section of the AWWA (FSAWWA), the Florida Water Environment Association (FWEA), the WEF Automation and Info Tech Committee, and the Instrumentation Testing Association (ITA), the WWAC Symposium helps professionals in the water and wastewater industries understand how instrumentation, SCADA (supervisory control and data acquisition), and automatic control applications are vital to the treatment and distribution of water, and the collection and treatment of wastewater. The symposium also provides an excellent opportunity to gain valuable technical information, networking, professional development, and continuing education credits (CEUs and PDHs).

This 3-day symposium is focused on the challenges associated with automation and instrumentation in the water and wastewater sector. It features: 2 full days of presentations, a tour of a local water/wastewater facility, a general reception, networking events, a poster session, and a supplier showcase. The first day begins with registration, an optional full-day short course on a current SCADA/automation related topic, and a plant tour. The second day kicks off with a keynote speaker, followed by presentations on general topics such as instrumentation; system integration, automation, plant case studies, new technologies and process optimization/automation. The third day starts with an invited speaker on effective plant automation techniques, and is focused on SCADA in the Workplace with topics geared towards SCADA, PLC, HMI, Expert Systems, Data Modelling, and Alarm Management. The Tuesday-Thursday timeslot has been selected so that families can easily take their kids to Disney World, both during and before/after the symposium. Proceedings will be published and made available to water/wastewater division members, and papers will be considered for publication in the ISA's technical journal, ISA Transactions (www.isa.org/isatrans/).

Guidelines for Submission

- All authors/speakers must pay the speaker registration fee (\$125)
 - The speaker registration fee is a discounted conference rate (regular \$425)
- 250 word (max 300 words) abstract in US English shall be submitted electronically
- Authors must indicate what format they wish to present in:
 - 30 minute presentation (no paper)
 - 6-12 page paper and 30-minute presentation
 - Large format 3 foot wide x 4 foot high poster
- Final presentations must be on the supplied symposium PowerPoint template
- Final papers must be submitted in MS Word using supplied symposium template
- Papers/presentations/posters accepted for presentation and/or publication will require completion of ISA Rights and Responsibilities form
- Student papers and posters are welcome
- The lead author is the main contact

Submissions

Submit your abstract via email in MS Word format to:

abstracts@isawwsymposium.com AND provenzano2@comcast.net

Deadlines

Abstracts Due January 31, 2014

Notification of Acceptance February 21, 2014

First Draft Due March 23, 2014

Final Draft Due..... May 15, 2014

A full author information package, along with sample abstracts, templates and a list of topic ideas can be found at www.isawwsymposium.com

For additional information, contact:

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Topics include but are not limited to:

Speaking Track 1 – General Topics

Instrumentation: New Technologies and Applications

SCADA Security, ISA99, CSET, and Mitigating Risks

Control System Redundancy and Robust Design

Wireless Technologies

System Integration

Automation Techniques for Existing Plants

New Control System Technologies

Plant Case Studies

➤ Plant Upgrades & New Facilities

➤ Control System Upgrades & Replacements

➤ Lessons Learned

Process Optimization

Automated Control Techniques

Project Management Lessons for Integration Projects

Specific Water and Wastewater Challenges

Speaking Track 2 – SCADA in the Workplace

SCADA – Supervisory Control and Data Acquisition

Modelling Non-revenue water & collection networks

Energy use modelling and Optimization with SCADA

Capturing and Evaluating Stakeholder Needs

HMI Design for Operator Effectiveness

Effective Use of Multiple HMI Screens

Human Factors and Control Room Design

Intelligent & Expert Systems

Alarm Management & Alarm Rationalization

Implementing of ISA, EEMUA, WEF & AWWA Standards

Call-Out Alarm Rationalization and Techniques

Data Reporting & Presentation Techniques / Strategies

Data Management, Historians, and Data Retrieval

SCADA and the Current Regulatory Environment

Mobile HMIs, Tablets, Remote Access, and Dashboards

WWAC2014_call-for-abstracts_rev2013-07-26.doc

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Symposium Planning Update

By Kevin Patel, General Symposium Chair

The symposium committee has been hard at work since I last wrote to you in our Fall 2013 newsletter. Our program committee has taken shape, and I look forward to introducing them to you soon. We also have a strong organizing committee this year with both familiar faces and several new members. There have been several abstracts submitted for the symposium but we are still looking for several more. If you haven't already, please submit your abstract by January 31, 2014 to abstracts@isawwsymposium.com.

While our program committee is working on finalizing our other invited speakers, we are pleased to announce one of our speakers. He is:

Tom Sigmund, Executive Director of Green Bay Metropolitan Sewerage District, will deliver a talk about how automation will affect the Water Resources Utility of the Future and help attendees understand where our utilities currently are and where they need to be for the future.

I'm also pleased to say that the optional ISA training courses that are being offered in conjunction with the symposium have also been finalized and will share the details about each one. Read on in this newsletter for more details.

Call for Abstracts – Last Call

By Joe Provenzano, Program Committee Chair

Interested in presenting? There is still time to submit your 250 word abstract. Abstracts must be submitted electronically via email to the program committee.

See the Call for Abstracts on page 3

Or visit www.isawwsymposium.com

I personally invite anyone who is involved with the automation, instrumentation, system integration, operation, maintenance, management and/or construction of facilities the water/wastewater sector to submit an abstract this year.

There are three ways you can present your work:

- 30 minute PowerPoint presentation (no paper)
- 6-12 page paper and a 30 minute PowerPoint presentation
- Large format 3'x4' poster

This year's symposium also has two speaking tracks:

- Track 1 – Instrumentation, System Integration, Automation, Plant Case Studies, New Technologies
- Track 2 – SCADA in the Workplace, HMI, Human Factors, Alarm Management, Plant Optimization

In both speaking tracks, we welcome both technical and "case-study" submissions. Case studies can showcase new plants, plant upgrades, plant optimizations and/or the implementation of new technologies. Lessons-learned talks are also welcome.

Looking for some ideas on what to present? Visit the symposium website at www.isawwsymposium.com for a list of over 200 topic ideas under the "Call for Abstracts" link.

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Details about 2014 WWAC Symposium

By the Symposium Committee

We are pleased to announce the dates and conference details of the 2014 ISA Water/Wastewater and Automatic Controls Symposium, which will take place 5-7 August 2014 at the Crowne Plaza Orlando-Universal Hotel in Orlando, Florida, USA. Now in its ninth year, the annual symposium offers a unique opportunity for automation, instrumentation and SCADA (supervisory control and data acquisition) professionals in the water and wastewater sectors to share ideas, network, and earn continuing education credits.

The 2014 ISA WWAC Symposium is a three-day event that focuses on the challenges associated with providing reliable, secure and cost-efficient automation for the world's municipal water/wastewater infrastructure. The gathering features two full days of technical speakers/presentations, networking events, a poster session, and a supplier showcase. This year's program also includes an optional tour of a local water treatment facility, and two optional short courses on SCADA cyber security and flow meter section/sizing. More information is available at www.isawwsymposium.com.

Invited Speakers

This year's symposium will feature several prominent speakers who will present on pertinent industry topics. Tom Sigmund, Executive Director of Green Bay Metropolitan Sewerage District, will deliver a talk about the Water Resources Utility of the Future to understand where our utilities currently are and where they need to be for the future.

Call for Abstracts

The complete technical program for the symposium will feature speakers presenting on a variety of automation, instrumentation and SCADA topics unique to the water/wastewater sector. There are still a few speaking slots left in the technical program.

The symposium program committee extends an open invitation for potential speakers to submit 250-word abstracts for a 30-minute talk, and a 6-12 page paper and/or poster. More information, along with the official call for abstracts, can be found at www.isawwsymposium.com/call-for-abstracts/. Abstracts are due by 31 January 2014.

Partnerships with WEF, the Florida AWWA and NRWA

The WWAC Symposium is experiencing a new-found growth in popularity thanks to continued alliances with the Water Environment Federation (WEF), the Florida Section of the American Water Works Association (FSAWWA) and the Instrument Testing Association (ITA). By forming strong partnerships with other associations, the symposium has been able to reach a broader cross-section of water and wastewater professionals across the industry. For members of these associations, the symposium provides targeted professional

development and training opportunities otherwise inaccessible.

“This collaboration aligns with WEF's Strategic Direction, connecting water professionals to leverage knowledge and promote innovation,” says WEF Automation and Info Tech Committee Chair Tom DeLaura. “I am very much looking forward to continuing WEF's technical co-sponsorship of the 2014 WWAC Symposium. It has been a pleasure to be part of the team that brought ISA and WEF together for this symposium, as well as on several other initiatives. The power of such collaboration is uplifting.”

Cost-Effective Continuing Education Credits

The 2014 ISA WWAC Symposium offers a cost-effective way for operators and engineers who work in the municipal water and wastewater sectors to gain valuable continuing education credits. Thanks to partnerships with local organizations, and the ISA's own role as an education provider, attendees are able to receive both PDHs (professional development hours) and CEUs (continuing education units) for the time they spend at the symposium, and during the symposium's two optional training courses on cyber security and instrumentation and controls hands-on SCADA troubleshooting.

Registration for the 2.5 day symposium costs only \$425, and discounts are available for AWWA, WEF and ISA members. A special discounted hotel rate of \$92/night has been arranged for symposium attendees.

Symposium Preview Brochure

Registration for the symposium is now open. Interested parties can find out more about the 2014 ISA WWAC Symposium via the symposium website at www.isawwsymposium.com or by viewing the four-page full color “conference preview” brochure, which is also available on the website. Both paper-based and online sign-up methods are outlined on the symposium website, as is information about the two optional training courses on cyber security and instrumentation and controls hands-on SCADA troubleshooting that are being offered in conjunction with the symposium.

A copy of the 2014 WWAC Symposium preview brochure can be found attached to this newsletter.

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2014 WWAC Symposium Program Schedule Preview

Presented by the Water and Wastewater Division of ISA, our symposium helps in the water and wastewater industry understand how instrumentation, SCADA (supervisory control and data acquisition), and automatic control applications are vital to the treatment and distribution of water; the collection and treatment of wastewater; and the management of storm water. The preliminary program schedule is as follows:

Monday – Tuesday, August 4-5, 2014

- Optional 2-day course: Instrumentation and Control Hands-On SCADA Troubleshooting
- Optional 1-day course: SCADA Cybersecurity (Tuesday)
- Symposium Registration
- Local Water Treatment Plant Tour (Tues afternoon)

Wednesday, August 6, 2014

- Keynote speaker
- Invited Speakers
- Presentations and Papers
- Light Breakfast, Coffee Breaks and Buffet Lunch Provided
- Supplier Showcase & Vendor Presentations
- Evening Reception

Thursday, August 7, 2014

- Invited & Guest Speakers
- Presentations and Papers
- Light Breakfast, Coffee Breaks and Buffet Lunch Provided
- Poster Session
- Supplier Showcase

Attendees at the symposium can earn up to 20 PDHs (professional development hours).



Provider
#1001262

ISA 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; (703) 506-3275. In obtaining this approval, ISA has demonstrated that it complies with the ANSI/IACET 1-2007 Standard which is widely recognized as a standard of good practice internationally. As a result of their Authorized Provider membership status, ISA is authorized to offer IACET CEUs for its programs that qualify under the ANSI/IACET 1-2007 Standard.

Earning CEUs and PDHs Continuing Education Credits at the Symposium

At the 2014 WWAC Symposium, attendees can earn Continuing Education Units (CEUs) and Professional Development Hours (PDHs) for attending the sessions and ISA training courses. Engaging in continuing education and professional development is an ongoing requirement for many professional designations, certifications and licenses. By attending the WWAC Symposium, you can help satisfy your personal professional development and continuing education requirements.

The number of PDHs and CEUs for this year are:

- Symposium attendees will receive 20 PDHs / 2.0 CEUs
- I&C: Hands on SCADA Troubleshooting Course attendees 1.4 CEUs
- Intro to Cyber Security Course attendees: 0.7 CEUs

As an IACET authorized education provider, the ISA can issue PDHs/CEUs for symposium and training course participation.

Additionally, the ISA has also partnered with the Florida Section of the AWWA and the Water Environment Federation (WEF) to certify training credits for use for state-licensed water and wastewater operators, and for state-registered professional engineers. For the 2014 symposium, this certification process is currently in progress. An announcement will be made once this process is complete.

As part of the 2014 symposium, all attendees will have the benefit of receiving approved CEUs/PDHs for the hours spent in the training course and symposium towards their water/wastewater operator and PE license continuing education requirements. We will be doing the same this year.



About the Symposium Hotel

The 2014 ISA Water/Wastewater Symposium will be held at Crowne Plaza Orlando-Universal Hotel in Orlando, Florida, USA. This boutique hotel offers luxury accommodations and is only steps from International Drive’s world-famous shopping, dining and entertainment. It is also situated close to both Walt Disney World Resort and the Universal Studio’s theme parks. We have negotiated a special \$92/night hotel rate for attendees. This rate is good from August 4 to 8, and is available for symposium attendees, speakers, exhibitors, and training course participants.

Crowne Plaza Orlando-Universal Hotel

7800 Universal Blvd., Orlando Florida 32819

www.cporlando.com

reservations@cporlando.com

Reservations: 1 888-233-9527 (toll free)

Local: 1 407-355-0550

Fax: 1 407-355-0504

Symposium Hotel Rate: \$92 per night

The hotel is approximately 13 miles from [Orlando International Airport](#) (airport code: MCO).

There are several ways to get to the hotel. If you are driving to the symposium, the hotel is not far from Interstate 4, the Florida 528 Highway, and the Florida Turnpike. For those traveling by air, the airport has a large number of [rental car agencies](#).

Shuttle bus and taxi service from the airport is available via Mears Transportation by visiting online at www.mearstransportation.com or by calling 1-800-223-3868. A one-way taxi trip from the airport to the hotel typically costs around \$35 USD.



2014 WWAC Symposium Hotel – The Crowne Plaza

Symposium Registration

Registration for the symposium is now open! Attendees can register online or using the provided PDF registration form.

www.isawwsymposium.com/register

Symposium Registration (Aug 5-7, 2014) includes:

- 2 full days of papers and presentations
- poster session
- networking events
- tour of a local water/wastewater facility late-afternoon of Tues, Aug 5
- admission to supplier showcase
- light breakfasts on Aug 6 and Aug 7
- full buffet lunches on Aug 6 and Aug 7
- evening reception on Wednesday, Aug 6 with cash bar and 2 free drink tickets
- name badge
- list of attendees with contact information
- printed onsite program booklet
- printed copy of symposium proceedings
- There are also two optional training courses (additional course fees applies)

Full Symposium registration

List Price.....	\$425
ISA Members:	\$325
AWWA / FSAWWA members	\$375
WEF / FWEA members:	\$375
Students:	\$125
Authors/Speakers:.....	\$125

Optional Training Courses (Aug 4-5):

2-day I&C Hands-On SCADA Troubleshooting...	\$1305
1-day Intro to SCADA Cyber Security (Aug 5)	\$535



Photo from WWAC 2012 in Orlando, Florida

Optional Symposium Training Course
SCADA Cyber Security (course: IC32C)

August 5, 2014

Instructor: John Cusimano, CFSE, CISSP

Credits: 0.7 CEUs / 7 PDHs

Course Fee: \$685 List Price; \$535 ISA Members

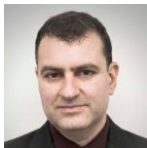
Understanding how to secure factory automation, process control, and Supervisory Control and Data Acquisition (SCADA) networks is critical if you want to protect them from viruses, hackers, spies, and saboteurs. This seminar teaches you the basics of the ANSI/ISA99 Security for Industrial Automation and Control Systems standards and how these can be applied in the typical factory or plant. In this seminar, you will be introduced to the terminology, concepts, and models of ANSI/ISA99 Cyber Security. As well, the elements of creating a Cyber Security management system will be explained along with how these should be applied to industrial automation and control systems.

You will be able to:

- Discuss why improving industrial security is necessary to protect people, property, and profits
- Define the terminology, concepts, and models for electronic security in the industrial automation and control systems environment
- Define the elements of the of ISA99 Part 2: Establishing an Industrial Automation and Control Systems Security Program
- Define the core concepts of risk and vulnerability analysis methodologies
- Define the concepts of defense in depth and the zone/conduit models of security
- Explain the basic principles behind the policy development and key risk mitigation techniques
- Explain why improving industrial security will be necessary to protect people, property, and profits

About the Instructor

John Cusimano, CFSE, CISSP is director of exida's security services division. A process automation safety, security and reliability expert with more than twenty years of experience, John leads a team devoted to improving the security of control systems for companies worldwide. He has conducted or supervised numerous cyber security assessments of control system products, systems, sites and corporations.



John is chairman of ISA 99 WG4 TG2 Zones & Conduits committee and co-chair of ISA 99 WG4 TG6 Product Development committee. He is a voting member on the ISA-99 standards committee on control system security and the ISA Security Compliance Institute's Technical Steering Committee. John is also active in a variety of other ISA S99, ISA S84, and ICSJWG working groups. John is also a qualified Achilles™ communication robustness test engineer.

Optional Symposium Training Course
I&C Troubleshooting (course: TC10)

August 4-5, 2014 (2 day course)

Instructor: Don Lovell, Senior ISA Member

Credits: 1.4 CEUs / 14 PDHs

Course Fee: \$1630 List Price; \$1305 ISA Members

This course presents a systematic approach to troubleshooting and start-up of single and multi-loop control loops. You'll see how pressure, level, flow, and temperature loops operate to maintain good process control systems. A basic knowledge of instrumentation and control is assumed.

You will be able to:

- Develop a systematic approach to troubleshooting
- Identify why a systematic approach to troubleshooting is most effective
- Follow specified procedures for proper loop check-out
- Verify, locate, and identify performance problems and the causes of the problems
- Take or recommend appropriate follow-up procedures to minimize problem recurrence
- Identify the common causes of sensor, transmitter, controller, and final control element problems
- Troubleshoot control systems
- Apply distributed control system (DCS) functions for troubleshooting
- Interpret pneumatic and electronic loops
- Apply safety practices for start-up
- Check and utilize control loop documentation
- Discuss applications and procedures to troubleshoot conventional analog control systems
- State the general operation features of a HART™ control system
- State the general operations features of a FIELDBUS control system
- Compare general troubleshooting procedures for conventional, FIELDBUS, and HART systems

About the Instructor

Don Lovell is currently an automation consultant assisting customers in defining their automation road map to meet their business objectives. Don has been involved in the process automation field for 40 years with experience in batch and continuous applications. Industries included beverage, cement, fine chemical, food, paper and industrial boilers. Employer history includes Honeywell, ITT Education Services, Kellogg, Invensys and Rockwell Automation



Visit the 2014 WWAC Symposium website

Visit our newly updated 2014 WWAC symposium website at:
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- Attendee Information
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Now is the time to consider sponsoring or exhibiting for WWAC 2014. Exhibitor booths are priced at \$875 and include 2 full vendor passes with full access to the symposium. For additional onsite, pre-event, and post event exposure, sponsorship are available at the \$500, \$1500 and \$300 levels.

Contact our general symposium chair via email at knpatel@sig-auto.com for more information.

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- additional vendor passes can be purchased for \$200/each
- breakfasts, coffee breaks, and lunches on Aug. 6 & 7
- admission to the general reception with cash bar on the evening of Wednesday, August 6
- exhibits room hours: Aug 6 & 7 (8:00am-5:00pm), and during Aug. 6th evening reception
- exhibit setup: Aug 5 (6:00pm-9:00pm);
- exhibit take down Aug. 7 (4:00pm-7:00pm)

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For more information on how to exhibit at the symposium please refer to our 4-page full-color sponsorship and exhibitor opportunities brochure: www.isawwsymposium.com/exhibit-sponsor/. Now is also a good time to start thinking about our upcoming 2014 symposium. Reserve your spot today!

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ISA Water/Wastewater Division Hosts Special Technical Session at WEFTEC

Thanks to our partnership with WEF, this year's WEFTEC 2013 show in Chicago featured a special session entitled "Highlights from the 2013 ISA Water/Wastewater and Automatic Controls Symposium." The session took place Wednesday, October 9, 2013 from 9:00am to 10:30am at the McCormick Place convention centre.

A record number of 22,589 registrants and 971 companies using 297,400 net square feet of exhibit space has designated WEFTEC 2013—the Water Environment Federation's (WEF's) 86th Annual Technical Exhibition and Conference—as the largest in the organization's 86-year history. The symposium committee is pleased to announce that three of the top speakers at this year's 2013 ISA Water/Wastewater and Automatic Controls Symposium presented their talks at [WEFTEC 2013](#).

Thanks to our partnership with the WEF Automation and Info Tech committee, the following ISA speakers presented at WEFTEC this year:

Speaker #1:

Too Many Alarms: Where do I begin?"

- Kevin Patel, Signature Automation

Speaker #2:

Implementation of Solids Retention Time (SRT) Control in Wastewater Treatment

- Robert Smith, Xylem Inc.: YSI Incorporated, Sarah Elger and Scott Mleziva, Xylem Inc.: Sanitaire Products

Speaker #3:

Migrating Guelph Wastewater's Data Monitoring Program To A Web-Based Reporting System

- David Chamberlin, Eramosa Engineering

Session Description:

The special technical session showcased three of the top speakers from the 2013 ISA Water/Wastewater and Automatic Controls Symposium, which was held August 6-8, 2013. The WEF Automation and Information Technology Committee has partnered with the ISA to present this niche ISA symposium which takes place during the first week of August each year. This WEFTEC feature session provided WEFTEC attendees the opportunity to listen to three of the best speakers from this joint ISA-WEF event.

The session was moderated by:

- Tom DeLaura, Chair, WEF Automation and Info Tech Committee
- Kevin Patel, Director-elect, ISA Water/Wastewater Division

Here are some photos from the WWAC Symposium feature session at WEFTEC 2013



Setting up for the Technical Session



ISA's Automation Island pavillion at WEFTEC



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*Source: #1 Supplier of Industrial Wireless Solutions for Water & Wastewater, ARC Advisory Group 2012 Wireless Devices for Process Manufacturing Worldwide Outlook.

Announcing the 2014 ISA Water/Wastewater Division Student Scholarships

By Michael Fedenyszen, 2014 Scholarship Chair

The ISA water/wastewater industry division (WWID) is pleased to announce the 2014 ISA WWID Student Scholarship Program. Eligible students can win up to \$2000 in scholarship to money to help them pursue higher education.

Students can apply by filling out the application form, accompanied by:

- 200-word essay on why they should win
- a copy of their academic transcript
- confirmation of enrollment form/letter

The application deadline is January 31, 2014.

The division is pleased to continue to providing up to \$2000 of scholarship money to encourage WWID members and their sons/daughters to pursue higher education. In addition, winners will receive a complementary 2-year student ISA membership.

Applications are due by postal mail or email by January 31, 2014. Winners will be notified by February 28, 2014 via telephone and email, and will be required to provide a photo and short biography that can be used for publicity reasons. Scholarship money will be distributed by check and mailed after the winner is contacted and has supplied the required photo/bio.

Scholarships will be awarded at the sole discretion of the WWID scholarship committee, with preference being given to students enrolled in technical programs that lead to careers in the water/wastewater sector.

Download and view the student scholarship application form at www.isa.org/wwid.

Please email completed application form, along with 200 word essay, confirmation of enrollment and copy of academic transcript to:

scholarship@isawwsymposium.com

AND

mfedenyszen@vanderweil.com

We strongly encourage students to **send in their applications by email** (PDF scans of documents) as this is preferred over postal mail.



**Water/Wastewater
Industry Division**

WWID Student Scholarship Last Year's 2013 Recipients

The ISA Water/Wastewater Industries Division is pleased to announce the winners of the 2013 WWID Student Scholarships. Open to college and university students, the water/wastewater division's scholarships are given out to promote higher learning. The 2013 recipients are Jennifer Holmes-Smith and Ben Lueders. Each will receive a \$1000 USD scholarship to help defray the costs of their education.



Photo credit:
Jennifer Hartman.

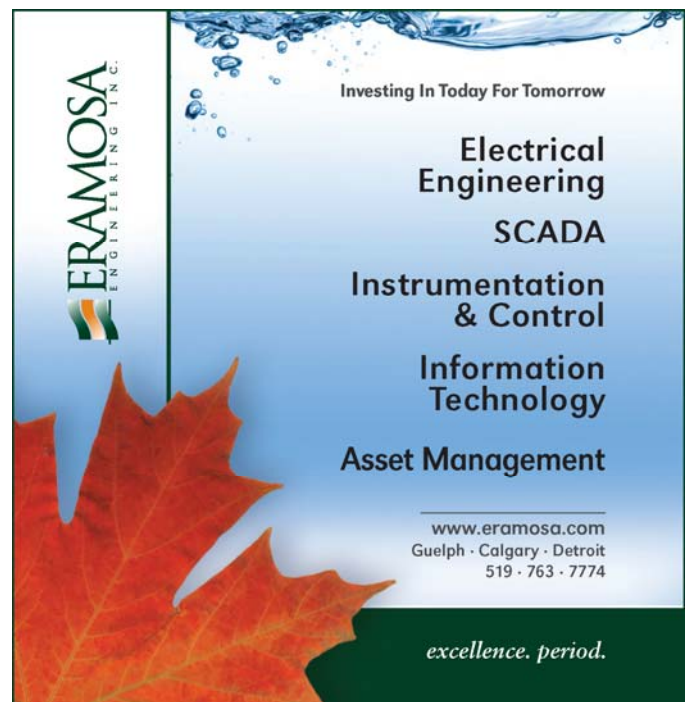
2013 ISA Water/Wastewater Industries Division Student Scholarship winner
Awarded: \$1000

Jennifer Holmes-Smith
University of Arkansas
Fayetteville, Arkansas, USA



2013 ISA Water/Wastewater Industries Division Student Scholarship winner
Awarded: \$1000

Ben Lueders
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2014 WWID Student Scholarship

APPLICATION FORM

The ISA Water/Wastewater Division (WWID) is pleased to award up to \$2000 of scholarship money to encourage WWID members and their sons/daughters to pursue higher education. In addition, winners will receive a complementary 2 year student ISA membership, which includes a print subscription to ISA InTech magazine. Applications are due by postal mail or email by January 31, 2014. Winners will be notified by February 28, 2014 via telephone and email, and will be required to provide a digital photo, a 3-4 sentence biography, and a 1-2 sentence "thank-you quote" that can be used for publicity reasons. Scholarship money will be distributed by check and mailed after the winner is contacted and has supplied the required photo/bio/quote. Scholarships will be awarded at the sole discretion of the WWID scholarship committee, with preference being given to students enrolled in technical programs that lead to careers in the water/wastewater sector.

Eligibility (check one)

- ISA WWID member, ISA Member # _____
- ISA WWID student member, ISA Member # _____
- Parent/Guardian ISA WWID member, Their Name: _____ & ISA Member # _____

Other criteria (check off each one)

- Currently attending 2-4 year university/college program
- Confirmation of enrollment letter (or scan of student card) attached
- 200 word essay about "why I should win the scholarship" attached
- Copy of previous year's academic transcript attached

Applicant's Name: _____
 Program of Study: _____
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 Institute Address: _____
 Dean of Admissions Name: _____
 Institute Phone: _____

Address while at School

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 State: _____
 ZIP: _____ Country: _____
 Phone: _____
 Email: _____

Home Address

Street: _____ Apt. _____
 City: _____
 State: _____
 ZIP: _____ Country: _____
 Phone: _____
 Email: _____

Applications can be either sent by mail or emailed. Submission of applications by email (as scanned PDFs) is preferred.

Mail completed application to:
 Michael Fedenyszen
 WWID Scholarship Chairman
 60 Whittier Street
 Haverhill, Massachusetts, 01830, USA

OR **Email completed application as scanned PDFs to:**
scholarship@isawwsymposium.com
 AND
mfedenyszen@vanderweil.com

APPLICATIONS MUST BE RECEIVED BY JANUARY 31, 2014

www.isa.org/wwid

ISA introduces cybersecurity certificate program based on ISA99/IEC 62443

News release from ISA's headquarters

Our friends at ISA headquarters have set up a new certificate program for cybersecurity. Drawing on its internationally recognized leadership and expertise in industrial automation and control systems security, the International Society of Automation (ISA) has developed a knowledge-based industrial cybersecurity certificate program.

Through the work of the ISA Committee on Security for Industrial Automation & Control Systems (ISA99), ISA has developed the [ANSI/ISA99, Industrial Automation and Control Systems Security standards](#) (known internationally as ISA99/IEC 62443).

ISA's new certificate program, the [ISA99/IEC 62443 Cybersecurity Fundamentals Specialist Certificate](#), is designed to help professionals involved in IT and control systems security improve their understanding of ISA99/IEC 62443 principles and acquire a command of industrial cybersecurity terminology.

Developed by a cross-section of international cybersecurity subject-matter experts from industry, government and academia, the series of ISA99/IEC 62443 standards apply to all key industry sectors and critical infrastructure, providing the flexibility to address and mitigate current and future vulnerabilities in industrial automation and control systems.

The ISA99/IEC 62443 Cybersecurity Fundamentals Specialist Certificate will be awarded to those who successfully complete a designated, two-day ISA classroom training course, [Using the ANSI/ISA99 \(IEC 62443\) Standards to Secure Your Industrial Control System \(IC32\)](#), and pass a 75-question, multiple-choice exam.

While there are no required prerequisites to register for the certificate program and an application is not required to take the exam, it is helpful if interested professionals possess at least three to five years of experience in the IT cybersecurity field, with at least two of those years in a process control engineering environment in an industrial setting.

“Our new cybersecurity certificate program is another step forward in ISA's development as a global leader in industrial cybersecurity standards, training and education, and in building on our commitment to meeting the needs of industrial control systems professionals throughout the world,” says Dalton Wilson, ISA's Manager of Education Services.

Throughout 2013, both ISA and its sister organization, the Automation Federation, have played prominent roles in helping the US government develop a national Cybersecurity Framework designed to thwart a potentially devastating cyber-attack on critical infrastructure, such as a power plants, water treatment facilities and transportation grids.

The exam

The paper/pencil-formatted version of the ISA99/IEC 62443 Cybersecurity Fundamentals Certificate Program exam is available now. The electronic version will be available through the Prometric global network of testing centers during the first quarter of 2014.

In order to sit for the exam, applicants must register for both the aforementioned ISA course ([IC32](#)) and exam, and successfully complete the course.

The exam will cover the following areas:

- Understanding the Current Industrial Security Environment
- How Cyber Attacks Happen
- Creating a Security Program
- Risk Analysis
- Addressing Risk with Security Policy, Organization, and Awareness
- Addressing Risk with Selected Security Counter Measures
- Addressing Risk with Implementation Measures
- Monitoring and Improving the CSMS
- Designing/Validating Secure Systems

Certificate renewal requirements

Because the ISA99/IEC 62443 Cybersecurity Fundamentals Certificate Program is a *certificate* and not a *certification*, certificate holders are not required to renew the ISA99/IEC 62443 Certificate.

However, once obtained, the certificate will only be considered current for three years. After the three-year expiration date, a certificate holder will no longer be able to claim that he or she holds a current/active ISA99/IEC 62443 certificate. In order to extend the current status of an expired certificate, a certificate holder must register for and take the related ISA99/IEC 62443 Certificate Knowledge Review. A score of 70% or higher is required to extend the current status of a certificate.

More information

For more information on ISA99/IEC 62443 Cybersecurity Specialist Certificate program, visit the website at www.isa.org/PR14/ISA99Cert, or email info@isa.org or call +1 919-549-8411.

Some of the Benefits of WWID Membership

- **Quarterly Newsletter** - the division publishes a quarterly electronic newsletter. Members also have the opportunity to write articles for the newsletter.
- **Annual Symposium** - Attend and participate in the annual WWAC symposium which spans all automation aspects of water and wastewater
- **Networking Opportunities** - A chance to meet, and form relationships with, peers involved with automation in your industry
- **Online Resources** - get access to papers and presentations from prior division symposia via the division and ISA websites
- **Industry Knowledge** - Be part of an active group that enhances your knowledge and professionalism on Water and Wastewater topics by obtaining valuable technical information and training in the traditional areas of measurements/sensors, instrumentation systems, data and advanced system/sensor technology.
- **Targeted Training** - at its annual symposia, the WWID offers ISA training courses for which are targeted towards areas of specific interest for the water/wastewater automation professional.
- **LinkedIn Discussion List & Email Discussion List** - the WWID maintains a LinkedIn Group and Listserv Email mailing list for its members.

Is it time to join a committee?

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TECHNICAL ARTICLE

Protecting Critical Infrastructure and Cyber Assets in Municipal Water Systems

Edited by Steve Batson, Rockwell Automation

Introduction

The North American water supply and distribution network faces increasing threats from forces both inside and outside their distribution systems. Some enemies have already struck. In 2006, a foreign hacker used the Internet to plant malicious software in a water-filtering plant in Pennsylvania. The next year, a former employee of a canal authority in Northern California was charged with damaging the computer used to divert river water to farmers' fields.

Not all security breaches are malicious. When a large Southern California water system recently hired a professional hacker to probe the vulnerabilities of its computer networks, he needed just one day to seize control of the equipment used to chemically treat drinking water for millions of people. The hacker got in through a gaping security hole: County employees had been logging into the network through their home computers without using a firewall or secure router.

Fortunately, none of these cyber incidents caused cascading problems. But experts are warning that security surrounding the nation's vital water systems must be substantially tightened to help prevent bioterrorism and other potential disasters.

The experts agree that the industrial control systems (ICS) currently used by most municipal and private systems have left the water sector vulnerable to cyber criminals and accidental threats.

"Today's industrial control systems are incredibly complex assemblages of technology, processes and people," the American Water Works Association noted in a 2008 report on water-system weaknesses. "Increasing connectivity, the proliferation of access points, escalating system complexity, and wider use of common operating systems and platforms have all contributed to heightened security risks."

This paper examines the nature and extent of those risks, and provides an overview of industrial security and regulatory trends affecting the water industry. This document also explains how systematic implementation of control and information-system technology can enhance security of critical water-system infrastructure. Specifically, this document describes various possible technical solutions to help municipalities and others in the water sector protect their operations – and their customers – from the dangers posed by ever-expanding security threats.

The Evolution of Risk

To take advantage of digital advances, water-process control systems – like those in other major industries – have changed

dramatically in the last two decades. Once isolated and proprietary, most water-control systems today are part of a converged network that connects plant operations to the administrative environment. The migration from single-purpose supervisory control and data acquisition (SCADA) systems to industry standard, network-based systems provided numerous benefits. Among them: Increased information-sharing across the operation, and remote (Internet and wireless) access to control systems.

But those advances also created security gaps. By connecting to the larger web of networks, water-control systems are exposed to the myriad threats that lurk in cyber space, including viruses, worms and Trojans. Poor control-system architecture, unfettered user access, and lax oversight of security policies and procedures have all combined to heighten the risk.

Meanwhile, manuals and training videos on ICS are publicly available, and many hacker tools can be downloaded or purchased on the Internet. Cyber criminals need little systems knowledge to infiltrate ICS operations.

For all these reasons, the number of control-system cyber-security incidents in the water/wastewater industry has escalated sharply, according to the Repository of Industrial Security Incidents (RISI), which reported a 300 percent increase in reported events between 2004 and 2009. RISI is a subscription-only database that collects, analyzes and shares information regarding cyber-security incidents that directly affect SCADA and process control systems.

According to RISI, almost half of all cyber incidents across all industries during that five-year period were caused by malware, including viruses, worms and Trojans. But unauthorized access or sabotage by internal sources – such as disgruntled workers or contractors using access privileges to cause harm – rose considerably at the same time. Network anomalies also triggered failures in control-system equipment, RISI said.

The threats to water systems extend well beyond technology. Most municipal systems include miles and miles of pipes that carry water from the main plant to homes and businesses. Along the way are pumping stations and numerous other essential apparatus. If left unsecured, these physical components could provide access for anyone with the motive and the means to contaminate the water or otherwise sabotage the system.

The Regulatory Environment

The water industry is far from the first to face major operational threats. Major elements of the North American economy and infrastructure have been attacked on the ground or from cyberspace, with often costly and sometimes devastating results. Hackers regularly rob consumers' user-names, passwords, credit card numbers and other personal information from financial, health care and other institutions.

Industrial espionage, once limited to dark corners and alleyways of the business world, is becoming more commonplace with frequent job-hopping and personnel changes. Digital information is a currency to be used for good or for bad. Broad-scale information availability, lax controls of sensitive, secret and mission-critical data and inadequate protection of network-enabled assets carries far-reaching implications for the nation's public infrastructure. Stuxnet, a worm created to circumvent and penetrate Microsoft Windows defenses, is the first known malware that spied on, subverted and attacked highly-engineered industrial control systems. It's also the first malware to include a programmable logic controller (PLC) rootkit, which masked the malware in the system and allowed it to stealthily achieve its pre-programmed goal.

In today's world where social-engineering and savvy reconnaissance are easily combined with state-of-the-art cyber technology, new threats are being created to prey on human nature and curiosity and ever-present weaknesses or oversights in control system design. The contemporary, wired-world must anticipate new threats like a Stuxnet 2.0. Furthermore, threats and potential attacks from both inside and outside the six walls of a facility must be considered and mitigated in order to help assure safety and operational integrity of the systems on which so many rely.

Experts agree that cyber terrorists and their malicious methods will become far more sophisticated in the years to come – just as they have since the United States federal government established the Critical Infrastructure Protection (CIP) program in 1998. The program, which was updated with the establishment of the Homeland Security Department in 2003, defines those physical and virtual systems that are “so vital to the United States that the incapacity or destruction of such systems and assets would have a debilitating impact on security, national economic security, national public health or safety.”

Among the entities covered by CIP are those involved with transportation, communications, law enforcement and municipal services – including water systems. So far, the major effect on the water sector has been the federal requirement that system operators assess their vulnerabilities to both physical and cyber-attacks.

But the water industry can expect more regulatory pressures, especially if a high-profile event occurs, such as a cyber-failure that presents a risk to society or leads to a major disruption of service. That's what happened to the bulk power industry in 2003, after a blackout struck New York City and large areas of the Northeast. By waiting for more regulations to force the deployment of cyber safeguards, the water sector runs the risk of experiencing the same surprise impacts that hit the bulk electric sector.

Lessons from NERC CIP

In the wake of the 2003 Northeast blackout, the federal government enacted the Energy Policy Act of 2005. That act authorized the Federal Energy Regulatory Commission (FERC) to enforce operating standards in the bulk power sector. In 2006, FERC certified the existing North American Electric Reliability Corporation (NERC) to oversee power-system accreditation and operation in the United States.

Previously NERC's guidelines were just that – guidelines. Today, NERC enforces standards that must be followed by companies responsible for the reliability and availability of the Bulk Electric System in North America. The standards that specifically pertain to the identification and protection of cyber-critical assets are commonly called NERC CIP standards.

While NERC CIP standards do not currently apply to industries outside of power generation, the requirements do provide a migration model for the water industry to help mitigate the risks of malicious attacks and accidental incidents.

The primary objective of the NERC CIP standards is to help assess the reliability of each facet within the power infrastructure, evaluate power companies' preparedness in the face of an attack or unplanned interruption of operations, and to continue education and awareness for employees of these companies. As defined by NERC, CIP covers “the assets, systems and networks, whether physical or virtual, considered so vital to the United States that their incapacitation or destruction would have a debilitating effect on security, national economic security, public health or safety, or any combination thereof.”

Validating compliance with NERC CIP regulations can be challenging – and non-compliance can be costly. The silver lining is that regulations such as NERC CIP can notably reduce risks, and simultaneously help identify ways for asset-owners to sustain and improve operational efficiency.

The NERC CIP regulations are categorized into eight standards. While the NERC CIP regulations are specific to the power sector, they can serve as a helpful guide to the water sector in anticipation of future guidelines for their industry, as well.

Re-categorizing these eight standards into three distinct groups helps to greatly simplify the understanding of the requirements that are applicable to industrial control-systems.

1) Plan to protect your cyber critical assets. CIP-003-1, -007-1, -008-1, and -009-1 all offer guidance on how to secure individual assets within a system. These standards include requirements for identifying the owners of cyber critical assets and for documenting exceptions to those cyber critical assets. They also have requirements for applying standards that help protect the information associated with those assets and

similarly include an annual evaluation of managing these security controls. Maintaining these security standards is also defined within this set of four standards, as are guidelines for reporting and responding to a system threat and recovery recommendations in the event that a company loses access to an asset.

2) Know what you've got and where it is. With CIP-002-1 and -005-1, the most important step companies can take is to understand what critical assets exist within a system, and what cyber critical assets are essential to the operation of those critical assets. Examples can include systems and facilities at master and remote sites that provide monitoring and control, real-time power system modeling, and real-time inter-utility data exchange. With those assets identified, companies must then ensure and document that every cyber critical asset resides within an electronic security perimeter. This perimeter needs to include electronically monitored access control, as well as an annual review of the perimeter's cyber vulnerability.

3) Tend to the physical security of your assets. While many already have addressed physical security, CIP-004-1 and -006-1 standards direct companies how to create and maintain a physical security plan that complements the cyber security measures already in place, with requirements for documenting physical access controls. Additionally, these standards address the need to ensure that companies have proper screening processes in place for hiring personnel, and that all employees are aware of the security measures used and are trained on how to use them.

As is the case with many regulatory standards, compliance can be both a burden and a boon. Generally speaking, it's sound business sense to regularly evaluate your systems, identify potential weaknesses within those systems, and take steps to strengthen those areas. While avoiding fines may motivate some, there are other business benefits to consider. For example, while municipalities design their systems to optimize efficiencies and maintain continuous operations, these standards should reinforce a sound practice of regularly reviewing critical systems for any potential vulnerabilities. It is important to address any detected vulnerabilities before they create an interruption of service or are used as an inroad for some malicious act.

Technical Solutions

Security is most effective and least expensive when included in the basis of design. Having taken that critical first step in defining your cyber critical assets, look for the most efficient way to achieve and document your municipalities' compliance requirements and avoid risk.

One way to do this is to work with an expert who can help you protect your critical infrastructure by applying industry knowledge, technology, services and solutions. A number of vendors already offer products, solutions and services that help you fulfill the CIP compliance requirement. A full service

vendor will often have a Network and Security Services team that can provide industry experience and consultation services to help you assess, design, implement, audit and manage a combination of process control and information systems.

Field engineers and consultants can also collaborate with you to help manage the differences between process and IT enterprises and their associated risks. This can be done not only through technology, but also through policies, procedures and behavior – allowing you to achieve your production and business goals.

A well selected consultant can also help you assess where you are in your control system or security lifecycle, and develop a plan to help improve system reliability and increase overall equipment effectiveness. That plan can include everything from security-embedded hardware, to innovative software, to physical-site security.

From a product perspective: Well-selected products for your automation systems should be designed to exacting standards and follow a rigorous design-for-security philosophy throughout the product development lifecycle. Furthermore, as new threats emerge or vulnerabilities are identified, a good vendor will have a continuous improvement processes strive to mitigate risks to help you maintain safe and secure operation.

Also take a look at products to see if they have features to help you enhance the security of your control systems. Many products provide capabilities to help protect key intellectual property, such as custom control-system routines and production data. Many also can provide means to control user-access to restrict and log changes to mission-critical aspects of the system. New enhancements are being introduced to restrict tampering and validate authenticity of the software that drives products.

Although most of these product-level features have little effect on your reaching CIP compliance, these capabilities complement the goal of CIP compliance to help protect both the critical infrastructure and those who depend on its safe and secure operation.

From a system perspective: In addition to hardware, software can also be of particular help when meeting CIP requirements. Often a software suite that provides centralized role-based access-control can make deployments easier. Systems like this can provide many of the same capabilities of standard IT products (Like Windows Active Directory), plus additional features customized specifically for the needs of automation systems. It controls user access to applications and devices through user authentication and authorization. A well deployed software suite can help address several NERC CIP requirements and if desired, it can also interface with other IT systems to help facilitate enterprise-wide access control to key control system assets such as controllers, industrial PCs and human-machine interfaces (HMI). For example:

- **CIP-004-1 R4.2** calls for revoking access to cyber critical assets within 24 hours for personnel who have been terminated. With centralized security software an administrator can revoke access to software products and devices immediately.

- **CIP-007-1 R5** contains several requirements in the area of account management. Check these carefully when selecting security software.

Change management software can also provide you with a set of asset-centric focused tools to securely and centrally manage your factory and process automation production environments by tracking users' actions, managing asset-configuration files, and providing backup and recovery of operating asset configurations. With these capabilities, compliance with many CIP requirements is much easier.

- **CIP-003-1 R6** requires a comprehensive change control and configuration management process. A well-selected software application can do this plus have add-ons that support calibration management and process device configuration. The calibration management capability allows for a paperless calibration solution: managing calibration requirements, specifications, schedules, calibration results and reporting. Process device configuration allows you to access instrument parameters, aids in configuration and commissioning process devices and helps with diagnostics. Acting as a host system, or frame application, it gives you the ability to work with multiple vendors' instruments in one common platform.

- **CIP-009-1 R4** calls for a recovery plan to restore cyber critical assets to operation. Configuration backup and recovery is a core feature of many enterprise-level automation software packages, and can help make this plan much easier to execute. The application also provides control system backup that is integrated with source control to provide reliable and easy access to the latest control system configuration file.

- **CIP-007-1 R2** – When evaluating software packages, one needs to take note of the all the Network ports that software is supposed to be using (and not using). Make sure that your software and hardware suppliers can provide this information.”

- **CIP-007-1** – Pay careful attention to how software patches are supplied when selecting an automation vendor. Most vendors will have an online service of some sort that provides information on what patches are required over time. .”

Conclusion

The complexity and interconnection of water-industry control systems has increased dramatically in the digital age. While these advances carry many benefits, they have also heightened security risks surrounding life's most essential element – water.

ABOUT THE AUTHOR

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ISA100 Wireless Standard Receives Overwhelming Approval in IEC Technical Voting

From the ISA Standards "News" blog

ISA-100.11a-2011, "Wireless Systems for Industrial Automation: Process Control and Related Applications," has received approval from all 21 participating National Committees to the International Electrotechnical Commission (IEC) that voted on the IEC version in a recently completed Committee Draft for Vote (CDV) stage.

The CDV stage is the final in the IEC process in which technical comments may be considered. The standard, expected to be issued in early 2014 for a final IEC approval stage in which no technical comments may be submitted, will carry the designation IEC 62734 upon publication.

This follows previous approval of ISA-100.11a as an ISA and American National Standard. The latter confirmed that ISA's open consensus standards development procedures as accredited by the American National Standards Institute (ANSI), which require participation not only of suppliers but of all key interest categories, were followed properly in developing ISA-100.11a.

ISA's ANSI-accredited procedures provide for direct participation and voting by experts from end-user companies, ensuring consideration of the views and requirements of those who will actually be deploying wireless systems in real-world industrial applications. That end-user input is now evident in the growing worldwide application of ISA-100.11a technology in processes including oil and gas, liquefied natural gas (LNG), refining, petrochemicals, chemicals, power, biopharmaceuticals, thermal processing, and water treatment.

In a presentation at the 2013 ARC Forum, for example, C. B. Chakradhaar of RasGas described the highly cost-effective application of ISA-100.11a compliant wireless temperature transmitters to monitor a critical component in LNG production. Based on that success, he indicated, ISA-100.11a has been adopted as a plant-wide standard for all future wireless applications.

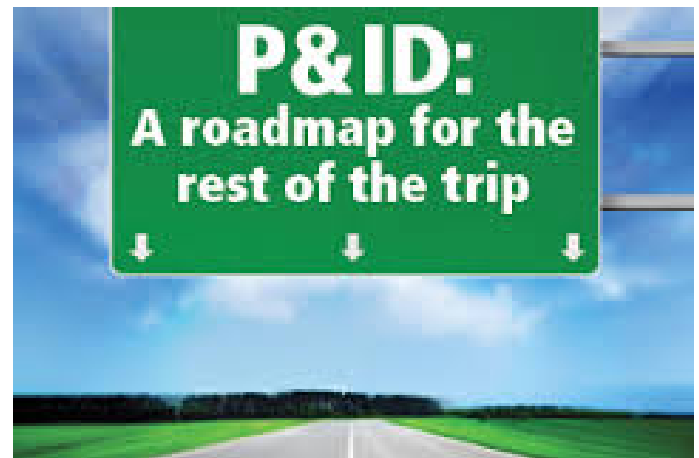
To read about other real-world applications of ISA-100.11a, visit: www.ISA100Wirelessapplications/successes.com

The extension of ISA-100.11a to the IEC is the latest in a long collaboration by which many original ISA standards have been adopted to become widely used IEC global standards in vital areas including:

- ISA-84/IEC 61511 Functional Safety
- ISA-88/IEC 61512 Batch Control
- ISA-95/IEC 62264 Enterprise-Control System Integration

- ISA-18/IEC 62682 Management of Alarm Systems
- ISA-99/IEC 62443 Cyber Security for Industrial Automation and Control

For more information about the ISA100 standard, contact Charley Robinson, crobison@isa.org, +1 919-990-9213.



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In Meeting Challenges and Seizing Opportunities in 2014 and Beyond

By Dr. Peggie Koon, 2014 ISA President



First and foremost, I am extremely excited to serve as 2014 president of ISA, an organization which has contributed so much to both my professional and personal growth. You see, my presidency is a celebration of two decades of ISA membership and service. Twenty years ago, in 1994, after accepting an invitation to speak at an ISA technical conference, I decided to join an ISA technical division. Since that time, I have been engaged with the Society in a marvelous exchange – of ideas, service, knowledge, and friendship.

Like so many ISA leaders, I have benefited from ISA membership. I have been able to participate in and give time and effort to ISA – a Society that has reciprocated by providing me amazing opportunities to learn and lead. And, as an added benefit, I've enjoyed access to outstanding technical resources, and have been blessed to work with and benefit from so many talented professionals, many of whom have become lifelong friends.

Meeting challenges and seizing opportunities

Exciting, Challenging, Opportunity. These are the three words that first come to mind when I think of ISA and the year ahead. 2014 promises to be a year of significant change for our Society, not just because of new leadership and governance, but because of the ever-changing world in which we must operate.

For example, our understanding of the global automation community is changing. As we begin to look for new opportunities for growth, our view must expand to include all of the various industry segments and markets that depend on automation every day. With this new perspective comes the recognition that ISA's ability to provide products and services for automation (professionals and industries) extends far beyond the process industries – a market in which we have thrived for 67 years. We also enter 2014 with new and emerging technologies that allow us to engage in new and exciting ways with automation professionals and industries on the global playing field.

New and emerging technologies have created new opportunities for automation around the world, and have changed the roles, responsibilities, and needs of automation professionals. All of these developments impact ISA, its spectrum of products and services, and its audience.

ISA's success both now and in the future depends on its ability to seize these opportunities while remaining relevant to its audience – to automation professionals and to the industries and entities they serve. And how do we remain relevant? We must continue to deliver value – both to individual members

and to the global automation community – and we must do this with excellence.

In response to these challenges, ISA has begun to develop a strategic roadmap that will clearly define our mission, vision, and goals in 2014, and the products and services to be delivered, the partnerships to be secured, and marketplace opportunities to be explored, and more. We have already begun having discussions about the new roadmap with ISA leaders and will continue to engage members, volunteers, and staff in the ongoing conversations in the weeks and months ahead.

Priorities for 2014 and the years ahead

In this new year and beyond, ISA must look both inward and outward to secure new growth opportunities, to increase awareness of its value proposition, strengthen its brand, tap into new revenue streams, boost membership, and develop a proactive plan for engaging the next generation of leaders. To do so, ISA must be successful in three vital areas: operations, collaboration, and innovation.

We need to closely examine the operations at all levels of the Society to optimize processes and resources. Secondly, we need to seek out opportunities to collaborate, both within the Society (across geographic, technical, and operational boundaries) and with external entities (including government, academia, Automation Federation sister organizations, other professional organizations and communities, and members of the automation industry) where synergy either already exists or can be created. Strategic partnerships are key to collaboration and operational excellence.

And finally, we must innovate. We must develop innovative solutions and approaches across the organization and throughout our products and services so ISA remains relevant to the automation profession and to the communities it serves. Harnessing the right technologies and other applicable resources will be essential. By doing so, we'll not only enhance existing products and services, but we'll develop new products, services, and partnerships that will position us for the future.

Realizing our potential requires a paradigm shift – a laser focus on our achievable goals, metrics that track our progress at all times, the ability to act quickly, and ongoing commitment. In 2014, I look forward to working with all facets of ISA to move the Society forward in these areas and generate ongoing momentum.

A bright future for ISA

The future for ISA is extremely bright, especially since we are poised for change. We need only look around us to see our world constantly evolving. Our focus on new strategic processes will help us successfully navigate through and capitalize on these changes, and assess how we “fit” so that as the markets we serve evolve, we're agile and able to respond quickly to take advantage of opportunities.

By now you're probably asking, "What about me?" Every ISA member and volunteer can help ISA grow and evolve. You may say, "I am just one person. What could I possibly do to make a difference?" One of my favorite quotes is by author and historian Edward Everett Hale: "I am only one. I cannot do everything, but I can do something."

Not only do we need your help, but you CAN help. In fact, you are already contributing by virtue of your ISA membership. In 2014, I challenge you to do even more. Seek out ways in which you can use your expertise to serve. Introduce your colleagues and company to ISA. Make them aware of what ISA offers. Get more involved in your ISA section or division. Join an ISA LinkedIn group. Reach out to your local, national, or global ISA leadership to inquire how you can help. Get involved!

Together, we will make 2014 the best year ever to be a part of ISA!

About the Author

[Peggie Koon](#), Ph.D., is vice president of audience at Chronicle Media and The Augusta Chronicle, which are part of [Morris Publishing Group, LLC](#), a privately held media company based in Augusta, Ga. Prior to joining Morris, Peggie spent more than 25 years developing IT systems for process automation and process control in a variety of industries, including automotive, nuclear defense, aerospace, nuclear reprocessing, thermal ceramics and textiles. Peggie assumed her first ISA leadership position in 1996 as membership chair of the Management Division and has held a variety of prominent leadership roles in the Society. She earned a bachelor's degree in mathematics from Smith College in Northampton, Mass. and completed graduate studies in industrial and systems engineering at the Georgia Institute of Technology. She received a doctorate in management information systems from Kennedy Western University in Cheyenne, Wyoming, USA.



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Mr. James H. Weber - Mentor, OH, USA
Mr. Robert G. Whitney - Fort Collins, CO, USA
Mr. Robert Michael Williams - Hermitage, TN, USA
Mr. Atul Yadav - Pune, India
Mr. Badarinath Koraganji - Edmonton, AB, Canada
Mr. Eduardo Barbosa - Araucaria, Brazil
Mr. Robert W. Willis - Houston, TX, USA

WWID is on LinkedIn

LinkedIn is a social media site that is geared towards professionals and business people. Located at www.Linkedin.com, the site features online profiles, discussion groups and tools for identifying and keeping track of contacts. As of January 2013, LinkedIn has over 200 million members in more than 200 countries and territories.

In an effort to provide the latest news and information relating to instrumentation and control systems in water and wastewater management, the Water and Wastewater Industry Division has created a LinkedIn group. We invite anyone affiliated with or interested in the water and/or wastewater industries to join the group and participate in the dialog.

You may use the following link to join the group <http://www.linkedin.com/groupRegistration?gid=2031271>



About LinkedIn

LinkedIn is an interconnected network of over 200 million experienced professionals from around the world, representing 250+ industries and 200 countries. You can find, be introduced to, and collaborate with qualified professionals that you need to work with to accomplish your goals.

When you join, you create a profile that summarizes your background and professional accomplishments. Your profile helps you find and be found by former colleagues, clients, and partners. You can add more connections by inviting trusted contacts to join LinkedIn and connect to you.

Your network consists of your connections, your connections' connections, and the people they know, linking you to thousands of qualified professionals.

There are already many ISA members and automation professionals on LinkedIn, as well as several other ISA-related groups. If you'd like to learn more about LinkedIn, the article "100+ Ways to Use LinkedIn" at the website www.linkedintelligence.com/smart-ways-to-use-linkedin/ provides many different perspectives on how the site can be leveraged. We hope you'll join us there and network with other ISA, water, and wastewater professionals.

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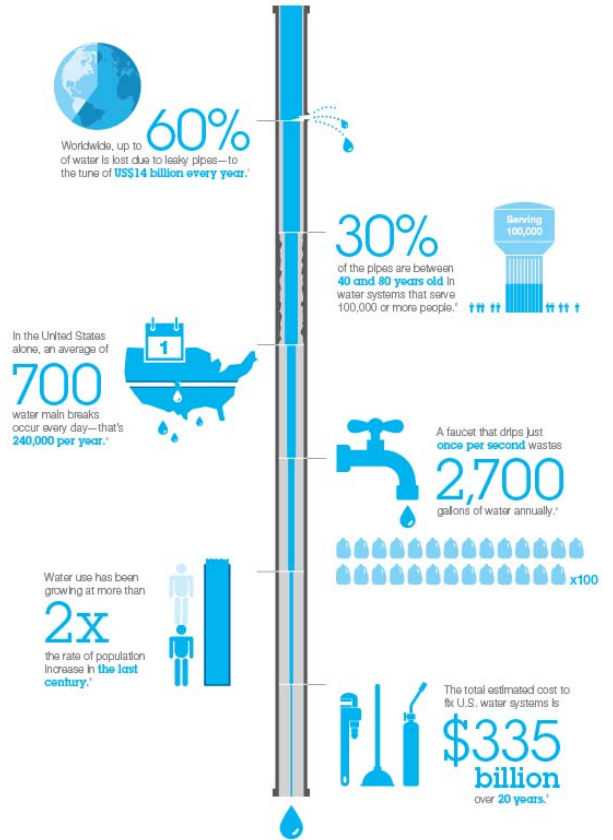


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Call for Newsletter Articles

The WWID newsletter is published four times a year (winter, spring, summer, and fall) and reaches the WWID's over 2,000 members. Each issue is approximately 32-44 pages long, and is electronically in color PDF format. A notification email goes out to all WWID members and it is available for public download at www.isa.org/wwid/

We are always on the lookout for good articles, and we welcome both solicited and unsolicited submissions.

Article submissions should be 500-2000 words in length and be written for a general audience. While it is understood that the articles are technical in nature, the use of technical jargon and/or unexplained acronyms should be avoided. We actively encourage authors to include several photos and/or figures to go along with their article.

We actively welcome articles from all of our members. However, we do ask that articles be non-commercial in nature wherever possible. One or two mentions of company and/or product names for the purposes of identification is acceptable, but the focus of the article should be technical content and not just sales literature. If you are unsure of whether your article idea is workable, please contact our newsletter editor for more information – we are here to help.

Some examples of the types of articles we are looking for include:

- Explanatory/teaching articles that are meant to introduce or explain a technical aspect of automation and/or instrumentation in the water/wastewater sector.
- Biographical stories about personalities and/or leaders in the water/wastewater sector.
- Case Studies about plant upgrades and/or the application of new technologies and techniques. This type of article must include at least two photos along with the article text.
- Pictorial Case Studies about a plant upgrade consisting of 4-6 photos plus a brief 200-500 word description of the project undertaken. The article should ideally include one to two paragraphs about lessons learned and/or advice for other automation professionals.
- Historical reflections on changes in technology pertaining to specific aspects of instrumentation or automation, and how these changes point to the future.
- Discussions about changes in the water/wastewater sector and how these affect the automation professionals.

Once we receive a submission, we will work with you to edit it so it is suitable for publication in the newsletter.

Article submissions can be sent to the WWID newsletter editor Graham Nasby at graham.nasby@eramosa.com.

WWID Newsletter Advertising

The WWID newsletter is an excellent way to announce new products and services to the water/wastewater automation community. With a distribution of 2,000+ professionals in the automation, instrumentation and SCADA fields, the WWID newsletter is an effective targeted advertising tool.

The WWID newsletter is published quarterly, on the following approximate publication schedule:

- Winter Issue – published in January/February
- Spring Issue – published in May/June
- Summer Issue – published in August/September
- Fall Issue – published in October/November

Advertising in the newsletter is offered in full page and quarter page formats. Advertisements can be purchased on a per issue basis or for four issues at a time. The newsletter itself is distributed as a full-color PDF, so both color and black/white artwork is acceptable.

The current advertising rates are as follows:

Per Issue:

- Full page, full color (7" x 9"): \$400
- Half page, full color (7"x4.5" or 3.5"x9"): \$200
- Quarter page, full color (3.5" W x 4.5" H): \$100

Per year (4 issues):

- Full page, full color, 4 issues (40% discount): \$1200
- Half page, full color, 4 issues (25% discount): \$600
- Quarter page, full color, 4 issues (25% discount): \$300

Other sizes of advertisements are available, but are priced on an individual basis. Contact us for more information.

Please book advertising space as early as possible before the intended publication date. Artwork for advertisements should be submitted a minimum of two weeks prior to the publication date; earlier is always better than later. Artwork for advertisements can be submitted in EPS, PDF, PNG, JPG or GIF formats. EPS, PDF and PNG formats are preferred. Images should be at least 300dpi resolution if possible.

The ISA Water/Wastewater Industry Division is run on a non-profit basis for the benefit of its members. Monies raised from the sale of advertising in the newsletter are used to help offset the cost of division programming and events. Like its parent organization, the ISA, the WWID is a non-profit member-driven organization.

For more information, or to discuss other advertisement sizes not outlined above, please contact the WWID newsletter editor Graham Nasby at graham.nasby@eramosa.com.



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2014 Symposium Details

Date: August 5-7, 2014
Location: Orlando, Florida, USA
Venue: Crowne Plaza Orlando-Universal Hotel
General Symposium Chair: Kevin Patel, PE, MBA
Website: www.isawwsymposium.com

2015 Symposium Date – Save the Date

Date: August 4-6, 2015
Location: Orlando, Florida, USA
Venue: to be announced
General Symposium Chair: Kevin Patel, PE, MBA

About the ISA Water/Wastewater Division

The ISA Water and Wastewater Industry Division (WWID) is concerned with all aspects of instrumentation and automated-control related to commercial and public systems associated with water and wastewater management. Membership in the WWID provides the latest news and information relating to instrumentation and control systems in water and wastewater management, including water processing and distribution, as well as wastewater collection and treatment. The division holds the annual ISA Water/Wastewater and Automatic Controls Symposium each summer, which features presentations by industry practitioners and published proceedings. For more information see www.isa.org/wwid/

About the ISA

Founded in 1945, the International Society of Automation is a leading, global, nonprofit organization that is setting the standard for automation by helping over 30,000 worldwide members and other professionals solve difficult technical problems, while enhancing their leadership and personal career capabilities. Based in Research Triangle Park, North Carolina, ISA develops standards; certifies industry professionals; provides education and training; publishes books and technical articles; and hosts conferences and exhibitions for automation professionals. For more information see www.isa.org



Registration Form

International Society of Automation
67 Alexander Drive
P.O. Box 12277
Research Triangle Park, NC 27709
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FAX +1 919-549-8288
EMAIL info@isa.org
www.isa.org

2014 ISA Water / Wastewater and Automatic Controls (WWAC) Symposium

5-7 August 2014 • Crowne Plaza Orlando-Universal Hotel • 7800 Universal Blvd. • Orlando, FL, USA

Mail Form and Payment to: ISA—WWAC Symposium
PO Box 3561
Durham, NC 27702-3561

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Email: info@isa.org

Fax Form to ISA Customer Service at: +1 919-549-8288

Online Registration: Instead of filling out this form, please consider registering online at www.isawwsymposium.com

1. Customer Information

Name (first): _____ (initial): _____ (last): _____
Company: _____ Title: _____
Street Address: _____
City: _____ State: _____ Country: _____
Phone: _____ Fax: _____ Postal Code: _____
ISA Member # (if applicable): _____ Email: _____

2. ALL PARTICIPANTS ARE REQUIRED TO PAY REGISTRATION FEES

Early-Bird Registration

- Regular Attendee\$425
- ISA Member\$325
- AWWA Member\$375
- WEF Member\$375

- Student Registration\$125
- Author/Speaker Registration\$125

Regular Price (after 15 June 2014)

- Regular Attendee\$450
- ISA Member\$350
- AWWA Member\$400
- WEF Member\$400

Symposium Attendees will 20 PDHs from ISA (CEUs pending final approval)

Optional 2-day Training Course:

Troubleshooting Instrumentation & Control Systems (TC10)
4-5 August, 8:00am - 3:30pm - Attendees receive 1.4 CEUs
 Regular Price\$1630
 ISA Member Price\$1305

Optional 1-day Training Course

Intro to SCADA Cybersecurity & ANSI ISA 99 (IC32C)
5 Aug, 8:00am-3:30pm, Attendees get 0.7 CEUs
 Regular Price\$685
 ISA Member Price\$535

Your Full Symposium registration includes:
* 2 full days of papers and presentations
* poster session
* networking events
* local water treatment facility tour on Aug 5
* admission to supplier showcas6
* light breakfasts on Aug 6 and Aug 7
* full buffet lunches on Aug 6 and Aug 7
* evening reception on Aug 6 with cash bar
* name badge
* list of attendees with contact info
* printed onsite program booklet
* printed copy of symposium proceedings

Registration and Training Course Total: \$ _____ US Dollars

3. Payment Summary

Charge: Visa Mastercard Amex Discover
Charge Account Number: _____
Exp. Date: _____
Name on Card: _____
Signature: _____

Make Checks Payable to:

ISA WWAC
Note: Company purchase orders or military vouchers not accepted.

Hotel Registration:

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Orlando, Florida, USA, 32819
Reservations: 1 888-233-9527 (toll free)
Local: 1 407-355-0550
Fax: 1 407-355-0504
www.cporlando.com

Attendees are responsible for booking their own hotel rooms.
A hotel rate of \$92/night is available if booked before **1 July 2014**



2014 Water / Wastewater and Automatic Controls Symposium

August 5-7, 2014.....Crowne Plaza Orlando-Universal Hotel.....Orlando, Florida, USA

Presented by the ISA Water / Wastewater Industries Division - www.isawwsymposium.com

Technical Co-Sponsors: WEF Automation and Info Tech Committee, the Florida AWWA Section, Florida Water Environment Association, ISA Tampa Bay Section, and Instrumentation Testing Association



Conference Preview



Setting the Standard for Automation™

ABOUT THE SYMPOSIUM

Presented by the ISA Water and Wastewater Industries Division, in collaboration with the Florida AWWA Section, Florida Water Environment Association, WEF Automation and Info Tech Committee, and Instrumentation Testing Association, the WWAC symposium helps professionals in the water and wastewater sectors understand how instrumentation, SCADA (supervisory control and data acquisition), and automatic control applications are vital to the treatment and distribution of water; the collection and treatment of wastewater; and the management of stormwater. The symposium also provides an excellent opportunity to gain valuable technical information, networking, professional development, and continuing education credits (CEUs and PDHs).

This 3-day symposium is focused on the challenges associated with automation and instrumentation in the water and wastewater sectors. It features 2 full days of presentations (two speaking tracks), a tour of a local water/wastewater facility, a general reception, networking events, a poster session, and a supplier showcase.



- **2 full days of speakers/presentations**
- **Track 1 – Instrumentation, System Integration, Automation, Plant Case Studies, New Technologies, Process Optimization**
- **Track 2 – SCADA in the Workplace, HMI, Human Factors, Alarm Management**
- **Two Optional ISA Training Courses before the symposium**
- **Plant Tour of a local Water/Wastewater Facility**
- **Trade Show, Reception & Networking Event**
- **Affordable Professional Development for Plant Operations/ Maintenance Staff, Plant Managers, Plant Designers, Engineers, System Integrators**
- **CEUs – Continuing Education Units**
- **PDHs – Professional Development Hours**

ATTENDEE PROFILE

The symposium is targeted at anyone involved with automation, instrumentation, and/or control systems in the water/wastewater sectors. Attendees typically range from plant operators, maintenance, and technical personnel to engineers, programmers and system integrators.

Meet and network with professionals who are responsible for the automation, instrumentation and operating aspects of water and wastewater facilities across North America. According to a recent US EPA study there are over 16,000 publicly-owned water plants across the USA, and another 21,000+ wastewater treatment plants throughout the country.

This symposium focuses on bringing together individuals who are looking for technical solutions to their water and wastewater challenges. They are looking for products, services, and partners they can trust to make their jobs easier.

SCHEDULE OF EVENTS

Monday - Tuesday, August 4-5, 2014

- Optional full-day training courses
- Symposium Registration
- Local Water/Wastewater Plant Tour (late afternoon Tuesday)

Wednesday, August 6, 2014

- Keynote Speaker
- Presentations and Papers
- Light Breakfast, Coffee Breaks and Buffet Lunch Provided
- Supplier Showcase & Vendor Presentations
- Evening Reception

Thursday, August 7, 2014

- Invited Speaker
- Presentations and Papers
- Light Breakfast, Coffee Breaks and Buffet Lunch Provided
- Poster Session
- Supplier Showcase



Technical Program

This year's symposium has a special focus on "SCADA in the Workplace" and how SCADA can be used as an effective tool to optimize operations, maintenance and asset planning. The two day technical program will include a keynote address, a special welcome from the director of the ISA water/wastewater division, and an invited plenary speaker. Guest speakers from the AWWA and WEF will also speak about the current advances in using instrumentation and SCADA in their sectors.

Interested in speaking at this year's symposium? Authors can present a 30-minute talk, 6-12 page paper, or a large format poster. The Call for Abstracts is now available at www.isawwsymposium.com/call-for-abstracts/. Abstracts are due January 31, 2014.

Local Plant Tour

Attendees will have the option of attending a tour of a local water treatment facility on the late afternoon of Tuesday August 5, 2014. The tour is free to all registered symposium attendees. Complimentary bus transportation from the hotel to/from the tour site is included. Invitations will be sent to all registered symposium attendees three weeks before the tour.

Optional Short Course #1

Introduction to SCADA Cyber Security

Introduction to Industrial Automation Security and the ANSI/ISA-99 & IEC 64432 Standards (IC32C)

Date: Tues. August 5, 2014

Length: 1 day

CEU Credits: 0.7

Cost: \$685 (\$535 for ISA members)

This full day course covers the basics of the ANSI/ISA99 Security for Industrial Automation and Control Systems family of standards and how these can be applied in a typical water or wastewater district. You will be introduced to the terminology, concepts, and models of ANSI/ISA99 CyberSecurity. As well, the elements of creating a CyberSecurity management system will be explained along with how these should be applied to commonly used SCADA, DCS and Automation Systems in the water and wastewater .

Optional Short Course #2

Troubleshooting SCADA Systems

Troubleshooting Instrumentation & Control Systems (TC10)

Date: Mon-Tues. August 4-5, 2014

Length: 2 days

CEU Credits: 1.4

Cost: \$1630 (\$1305 for ISA members)

This hands-on 2-day course, that uses actual physical instrumentation, presents a systematic approach to troubleshooting and start-up of single-loop and multi-loop control loops. You'll see how pressure, level, flow and temperature loops operate to maintain good process control systems. Topics covered will include various troubleshooting techniques; commons problems with measurements, valves and controllers; and how to use various computerized tools for diagnosing common loop configuration and tuning problems.

Why you should attend

Opportunity to learn from others and "talk shop" with people who understand the challenges of your sector

Cost effective professional development and continuing education.

Keep your skills current.

Get to compare experiences and lessons learned

Learn about new technologies, products and services

Be actively involved in your professional development

Establish contacts in the industry

Share ideas and experiences with others in the sector

Learn Something

Have Fun

Benefits for Water Utilities

Inexpensive professional development

2.5 days of training for \$425

Group discounts available

Opportunity for staff to learn about new ideas and industry innovations

Benefits for Engineering Firms

Exposure to new ideas

Learn from plant case studies

Talk to operations and maintenance professionals in an informal environment

Learn about new products and techniques

Registration & Fees

Full Symposium

List Price -	\$425
ISA Members -	\$325
AWWA & FSAWWA Members -	\$375
WEF & FWEA Members -	\$375
Students -	\$125
Authors / Speakers -	\$125

Optional Cyber Security Course

List Price -	\$685
ISA Members -	\$535

Optional I&C Troubelshooting Course

List Price -	\$1630
ISA Members -	\$1305

The symposium hotel rate is \$92 per night.

2014 Water / Wastewater and Automatic Controls Symposium

Founded in 1945, the International Society of Automation is a leading, global, nonprofit organization that is setting the standard for automation by helping over 30,000 worldwide members and other professionals solve difficult technical problems, while enhancing their leadership and personal career capabilities. Based in Research Triangle Park, North Carolina, ISA develops standards; certifies industry professionals; provides education and training; publishes books and technical articles; and hosts conferences and exhibitions for automation professionals.



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www.isa.org

Note: See symposium website for 2014 exhibitor & sponsorship opportunities

For more information visit:
www.isawwsymposium.com