Water/Wastewater Industry Division

Setting the Standard for Automation™

Calendar of WWID Events

May 6-8, 2017	**ISA Spring Leaders Meeting** Raleigh, North Carolina, USA
Aug 8-10, 2017	**2017 ISA Water/Wastewater and Automatic Controls Symposium** Wyndham Lake Buena Vista Resort Orlando, Florida, USA
Oct 28-30, 2017	**ISA Fall Leaders Meeting & 55th ISA Honors & Awards Gala** Tampa Bay, Florida, USA

In this Issue

Plus:

2017 Symposium Exhibitor & Sponsorship Brochure
2017 Exhibitor & Sponsorship Registration Form

Newsletter Winter 2017

Director's Welcome

Kevin Patel, Signature Automation

Welcome to a new year with the Water/Wastewater Industry Division. I am extremely pleased to continue my role of the Division Director. Our division and symposium leaders are hard at work in planning and finalizing the program for the 2017 ISA Water/Wastewater and Automatic Controls Symposium being held on August 8-10, 2017 at Wyndham Lake Buena Vista Resort near Orlando, FL. We are giving the event a face lift and hope that not only can many of our past attendees join, but we hope to have many of our colleagues that have not had an opportunity to attend be able to check out the event this year. Additionally, at this time we are in the planning stages for the 2018 event by narrowing down a location for the event.

As always we are looking for volunteers to keep these great events and benefits headed in the right direction. Working in the water/wastewater industry has always led to a network of people with close ties and no matter where your career takes you, those relationships that are formed are merely a phone call or Email away. Joining the symposium committee or division committee helps expand your network, increases knowledge of your craft, and brings you closer to everything the ISA has to offer.

…continued on page 3

Newsletter Editor's Welcome

Graham Nasby, City of Guelph Water Services

Greetings! In this issue you will read about our upcoming 2017 symposium, best practices for automation upgrades, and greetings from our incoming 2017 society president.

The year 2017 marks the seventh year since I become actively involved with the ISA, whether it be with the WWID, standards committees, or local ISA sections. One common thread I have noticed amongst us is that ISA members have a great deal of knowledge and expertise when it comes to using automation technology. We understand how to measure, monitor, control process equipment to operate our plants efficient. This includes instrumentation, field wiring design, motor starters, networks, servers, operator screens, and writing all the software to make it all work. And don't forget the commissioning, maintenance, and troubleshooting to keep these complex systems up and running. So next time you are faced with a difficult design, installation, commissioning or maintenance issue – remember your carefully honed skills as an automation professional are what makes the plants around us able to operate. The world needs you and your skills. Keep up the good work!

Warmest Regards,

Graham Nasby, P.Eng.
graham.nasby@guelph.ca

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INSPIRING INNOVATIONS

Message from your Director-Elect

Pavol Segedy, HDR Inc.

Now that we are into our new year at full speed, I would like to thank you for your continued support of our division and its programs. Whether you have attended an event, participated as a presenter, volunteered or performed another task, your contributions are what allows us to be a service to the industry. Your feedback allows us to see the areas in which we can improve as we chart the course before us this New Year.

I am both humbled and proud to be a part of such a wonderful group of professionals. YOU are the reason we strive to improve and only with your help can we navigate the course ahead.

We have several great things planned for you this year, including our annual WWAC Symposium. We are looking to grow it, expand it and planning to make some changes.

Please continue to read through this newsletter as you will learn more about our upcoming symposium and our current progress. We are still looking for a few more volunteers that would like to be a part of our symposium. If you would like to get engaged or interested in learning something new, please don't hesitate to contact me with any questions.

Respectfully,
Pavol Segedy, PE
WWID Director-elect
psegedy@nc.rr.com

Director's Message (continued from page 1)

I encourage everyone to take on a volunteer role if you haven't already. There are even small roles that can make a huge difference that do not require much time commitment. Feel free to contact Pavol or myself if you are interested.

Finally, we have been talking for quite some time about hosting a webinar. The plans for the webinar are in the works. A presenter has been identified and we will be finalizing the date and time of the webinar in the next few weeks. We will announce the details via Email to all of our members as soon as we have them. I look forward to another great year with the ISA WWID.

Thanks,
Kevin Patel, PE
2016-2017 WWID Director
knpatel@sig-auto.com

Upcoming Events

Here are some upcoming events for the Water/Wastewater Automation Professional:

AWWA ACE 2017
June 11-14, 2017
Philadelphia, Pennsylvania, USA

ISA WWAC Symposium 2017
August 8-10, 2017
Orlando, Florida, USA
Venue/Hotel: Wyndham Lake Buena Vista Resort

WEFTEC 2017
Sept 30 – Oct 4, 2017
Chicago, Illinois, USA

ISA WWAC Symposium 2018
August 7-9, 2018
Location to be announced
Venue/Hotel: to be announced

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SAVE THE DATE
August 8-10, 2017

2017 ISA Water/Wastewater and Automatic Controls Symposium

August 8 to 10, 2017 • Wyndham Lake Buena Vista Resort • 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

2017 TECHNICAL PROGRAM

The 2017 symposium has a special focus on how automation will be involved and integrated into many of our day-to-day activities. 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 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 next 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/. Abstract submissions (250 words) are due December 15, 2016. See the website for the full author kit, including the abstract submission template and paper topic ideas.

2017 REGISTRATION FEES:

Regular Rate $450
ISA Member Rate..... $350
AWWA, WEF, FWEA, ITA Member Rate..... $400
Author/Speaker Rate $150

Conference Hotel Rate..... $109/night (no resort fee will charged at $10)
Hotel Rate cut-off date ..... July 15, 2017
Discounted block of rooms are first-come, first-serve.

2017 OPTIONAL SYMPOSIUM TRAINING COURSES

SCADA Systems Integration

Introduction to SCADA Systems Integration (IC30C1)
Date: August 7, 2017 (Monday)
Length: 1 day
CEU Credits: 0.7
Cost: to be announced. There will be a discount for ISA members.
This course explains the parts and technologies that make up a Supervisory Control and Data Acquisition (SCADA) system and shows you how to evaluate potential benefits of applying the technology to your process application. You will be able to explain the concepts of digital coding, protocols, and modulations methods and evaluate the benefits of several examples of Remote Terminal Units (RTUs), Master Terminal Units (MTUs), and communication methods.

SCADA Cyber Security

Using the ISA/IEC 62443 Standard to Secure Your Control System (IC32)
Date: August 7-8, 2017 (Mon-Tues)
Length: 2 days
CEU Credits: 1.4
Cost: to be announced. There will be a discount for ISA members.
The move to using open standards such as Ethernet, TCP/IP, and web technologies in supervisory control and data acquisition (SCADA) and process control networks has begun to expose these systems to the same cyberattacks that have wreaked so much havoc on corporate information systems. This two day course provides a detailed look at how the ANSI/ISA99 standards can be used to protect your critical control systems. It also explores the procedural and technical differences between the security for traditional IT environments and those solutions appropriate for SCADA or plant floor environments.

2017 EXHIBITOR & SPONSORSHIP OPPORTUNTIES

Exhibitor booths for WWAC 2017 are priced at $925 and come with 2 vendor passes.
Symposium sponsorships are available at $750, $1750 and $3200 levels, with increasing numbers of free passes and pre/post-event exposure.

For more information visit
www.isawwsymposium.com

2017 Symposium Planning Update

By Pavol Segedy, 2017 Symposium Chair

With the new year, comes another ISA Water/Wastewater and Automatic Controls Symposium. WWAC Symposium will be on August 8 - 10, 2017 in Orlando, Florida at the Wyndham Lake Buena Vista Resort located on the Walt Disney World property near the Disney Springs.

We have been able to get a discounted hotel rate of $109/night plus tax. Thanks to our sponsors, we have also been able to keep our attendee pricing low. List price for the 2.5 day symposium is only $450 and includes breakfasts, lunches, a general reception, plant tour, and access to online proceedings (www.isawwsymposium.com). ISA members can attend for $350, AWWA/WEF/ITA members can register for the discounted rate of $400, and students can register for $150. (Prices in US Dollars.)

The theme for our 2017 symposium is "Embracing the Change in Automation for Operations and Maintenance." Attendees will gain further insight into the evolving industry along with common problems that continue to be seen in our industry. Real-world applications, procedures and publications will be discussed that will help attendees not only become more informed but also provide them with the tools to begin making their facility a more robust and efficient workplace.

Though our program committee is already starting to put together our technical program, we do have a few speaking slots still available. Please send in your abstract as soon as possible to Joe Provenzano. Being a speaker comes with perks! One of these perks is a discounted registration rate of only $150 (vs. the $450 list price).

Don't forget to set aside your training dollars for 2017. The symposium offers a very cost effective way to get relevant training for the annual CEUs/and PDHs and learn valuable information for your field of expertise.

I look forward to seeing everyone at the 2017 ISA WWAC Symposium in Orlando, Florida.

We've got the technology, experience and expertise. You'll find it all at our Water Wastewater Competency Center.

Nearly 150 water industry specialists make up the backbone of the Schneider Electric **Water Wastewater Competency Center (WWCC)**. It is a highly dedicated team that delivers everything from world-class integrated system design to continuous service – all designed to help you manage your energy for critical water treatment systems.

Every working day, the WWCC helps customers meet and exceed requirements for sustainability and energy efficiency, site and data security, process control and optimization, lighting, demand response and renewable energy. And that's just the start. We are also committed to providing you with local, face-to-face training on a wide variety of water industry topics to help you reach operational goals. Plus, with our trusted brands, you are guaranteed top-of-the-line products and solutions.

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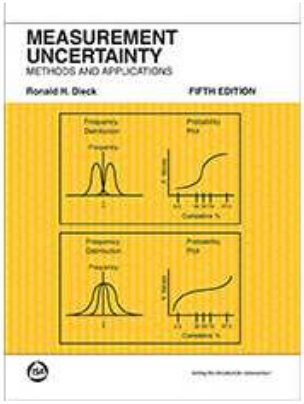
ISA PUBLISHING

Fifth Edition of Measurement Uncertainty: Methods and Applications Published

The folks at ISA headquarters are pleased to announce the publication of the book: *Measurement Uncertainty: Methods and Applications, 5th Edition* by Ronald. H. Dieck.

Dieck, a former ISA president and a recognized expert in measurement uncertainty analysis, says an updated edition of his popular book was needed in light of ongoing technological advances and improvements in measurement uncertainty methods and applications.



"Measurement Uncertainty: Methods and Applications, 5th Edition"

Copyright: 2017
ISBN: 978-1-941546-94-9
Length: 384 Pages
Format: Paperback
Publisher: ISA

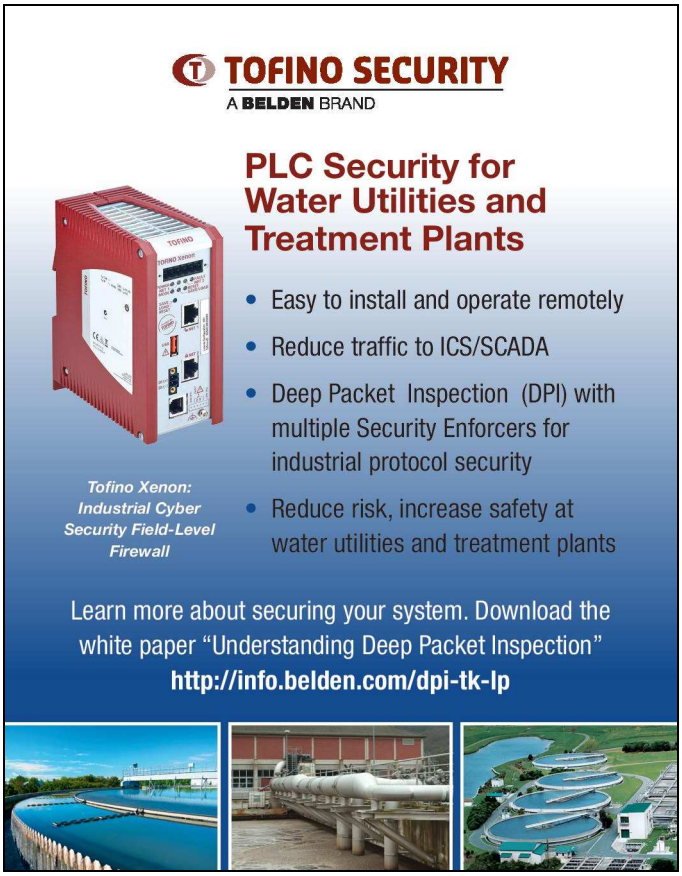
Member Price: $79 USD
List Price: $99.00 USD

"There's still a need for a well-organized, up-to-date book for properly analyzing the uncertainty of test and experimental data, particularly given the pace of technological change," Dieck explains. "This new edition features a significant amount of new and enhanced content, ranging from new appendices to more detailed examples of uncertainty analysis and computation."

The book's new appendices: include condensed descriptions of the basics of uncertainty analysis, pinpoint the advantages and disadvantages of several uncertainty models used throughout the world, and provide key equations for uncertainty analysis-all in an easy-to-use format.

To purchase a copy of the fifth edition of *Measurement Uncertainty: Methods and Applications*, visit www.isa.org/books/

Water/Wastewater Industry Division



TECHNICAL ARTICLE

Best Practices – Cut Over Strategies

By Hunter Vegas and Marsha Wisely

The following technical discussion is part of an occasional series showcasing the ISA Mentor Program, authored by Greg McMillan, industry consultant, author of numerous process control books, 2010 ISA Life Achievement Award recipient, and retired Senior Fellow from Solutia Inc. (now Eastman Chemicals). Greg will be posting questions and responses from the ISA Mentor Program, with contributions from program participants.

Here we see how a general and open-ended question can lead to a very insightful, useful, and at times, humorous discussion on a critical phase of migration projects where automation is transferred from the old to a new system with many safety and performance implications. The question was posed by Marsha Wisely, a relatively new protégée. The answer is provided by Hunter Vegas, ISA Mentor Program co-founder, who has the most extensive practical experience of the program resources in automation project design and execution.

Marsha Wisely's Initial Question

I am looking for general information on the different types of cutovers and what the impact of each type may be. If this topic is too big, I would appreciate even some quality documentation on the topic such that I can read up and maybe come back with more specific questions.

Hunter Vegas's Initial Answers

It IS a pretty open-ended question, and the topic is rather huge. Books by practitioners are more useful because they reflect actual plant experience. Greg adds that academics who have partnered with industry have expanded our understanding and principles through theory supporting practice. You get good at cutovers by doing them – lots of them – and learning (sometimes the hard way) what works and what does not. Older folks in automation have lots of gray hair, or none at all, and plant startups are most likely to blame. There are several universal constants that you must know about startups:

The ISA Mentor Program enables young professionals to access the wisdom and expertise of seasoned ISA members, and offers veteran ISA professionals the chance to share their wisdom and make a difference in someone's career. To learn more about how you can join the ISA Mentor Program, visit: http://automation.isa.org/isa-mentor-program/

a) Instrumentation and automation are almost always the last thing to install and check out because you can't hook up instruments on pipes that don't exist, and you can't talk to instruments if there are no wires. Invariably the civil, mechanical, and electrical installations all get delayed on a cutover but the start date does not slide so instrumentation is ALWAYS critical path. You start off with three weeks to install your equipment and that usually gets whittled down to three hours. "You mean you aren't DONE yet?!?!?!"

b) You can't run the plant without instrumentation so if your manager keeps hounding you about when you'll be done, tell him that you absolutely promise that you'll be done before he starts up.

c) Regardless of who is on what shift, the night shift is almost always half as productive as the day shift.

d) Good, Fast, and Cheap (pick any two).

e) There is no such thing as too much coffee on a startup.

Cutover types:

The different "cutover types" isn't nearly cut and dried or simple. I'll start by talking about a control system retrofit as opposed to a new plant or a major plant expansion. Usually a retrofit has a couple of different types:

1) Software upgrade – same instruments, same hardware (or maybe a few upgraded computers), and a new revision of software.

2) Hardware upgrade – same field instruments, new hardware and software. (Maybe same vendor, maybe not)

3) Total revamp – upgrade/replace a lot of field instruments and the entire control system.

All of those can be done in various ways that have different impacts on the production plant. Nearly all COULD be done without shutting down the plant. It would be expensive, and it would take a while, but it can certainly be done. I've converted three or four plants from pneumatic controllers on panelboards to full-blown distributed control systems (DCS) and never shut them down. Ultimately, the economics of a plant production drives the decision. If they are making a million dollars of product a day, they can afford to pay an extra $200,000 to cutover on the fly. Similarly, if they are barely running eight hours a day, a two- or three-day outage doesn't matter. Often the cutover is a mix – you do as much

work as possible prior to shutting down and then you come down and finish the rest.

HOW do you cutover?

That totally depends on the plant, the process, and the timing. When I am looking at a retrofit project, I start by talking to the plant and understanding a few things:

1) Their budget
2) Their schedule
3) The financial justification for the project
4) What their "pain points" are

Based on that, I then start going over the project – looking at panels, mulling my options, determining what I have to do, and how I might go about it. I also investigate what options I have and what is required to change over the system. Is the I/O compatible? Are there interconnect options and do they work? (Just because a company SAYS they offer interconnect options, does NOT mean they actually work as advertised!) Eventually, I pull it all together and hatch a plan, figure what it will cost, and present it to the client. If they can afford it and like it, we are off to the races. If they don't, then we tweak it accordingly. Maybe they can afford to take a longer outage and save on installation costs. Maybe they are willing to pay more to bring the plant on line faster. Maybe there is a way to jury rig things to get the bulk of the benefit now and do the rest of the cutover later when they have more time.

Well, that's a start… let's see what questions this generates.

Marsha Wisely's Subsequent Questions

Thanks for the information! When you have only seen one of something, it's hard to know what the norm is or what the other options are. Also, I really like your universal constants section! After reading your comments, I started thinking about how the information applied to my experience. Below I have a summary of my experience to give you some background on me, and it inspired some questions as well.

- Type of project: brownfield/retrofit
- My role was strictly software-oriented
- Moving from a combination of a programmable logic controller (PLC) and legacy system (Provox) to a modern DCS platform (DeltaV)
- The idea was for it to be a software-only upgrade, temporarily
    - Profibus DP served as the interface between the PLC and modern DCS platform
    - A specialized interface (DeltaV Controller Interface for Provox I/O) was used to communicate with the legacy system's I/O
- To your point on the interconnect options: both solutions above were tested prior to startup, which saved us some headaches I'm sure
- The long-term goal was a full conversion to electronic marshalling
- The customer also had some existing control modules on the modern DCS platform they wanted to integrate once we were onsite.

The cutover and startup both took a good deal longer than previously anticipated. Loop checkouts were taking longer than anticipated, the plant discussed how to improve, but management never prioritized timeliness over safety and quality of work, which I respect and appreciate (I know that isn't always the case). There was some unexpected equipment issues, namely valves were backwards (fail open when they should be fail closed and vice versa).

Startup was also slower due to some equipment issues – air lines to pneumatic valves got leaks and equipment that was working before startup needed to be repaired before being brought back up. This leads to some frustrations and finger pointing at the software – "The valves aren't working; they worked before. It must be the software." Definitely a good lesson in patience. In those cases, we basically did an additional loop check, which quickly found the issue. Shutdowns are in the hands of operations and can be pretty hard on equipment.

This leads to the following additional questions.

1) If you do a hardware and software cutover, are those types of equipment issues more likely to get caught? And are these types of equipment configuration errors common?

2) Are there any common issues caused by shutting down equipment that are good to check before starting back up?

3) In your notes, you mention asking the customer about their "pain points." Could you provide some examples?

4) My next couple projects are for new plants – one of which I will be leading. Do you have any advice specific to new plants? It looks like your "HOW to cutover section" covers a lot, but are there any additional challenges associated with new plants?

Thanks again for your help! I greatly appreciate your insight into the field since I haven't had much field experience. My next couple projects, in addition to being new plants, also have a larger equipment and instrumentation component to my assignment, and I am looking forward to that exposure.

Hunter Vegas's Subsequent Answers

Let me try to answer your questions:

1) If you do a hardware and software cutover, are those types of equipment issues more likely to get caught? And are these types of equipment configuration errors common?

If you are doing a hardware/software cutover you have to be fanatical about the details. Picking up failure modes of valves, ranges, square root versus linear, interlocks, etc. is pretty much a given. Only our most experienced people generally do the decoding of the existing system because it is so crucial to success. If you toss it to some inexperienced engineers, you will pay a wicked price on startup and rework.

2) Are there any common issues caused by shutting down equipment that are good to check before starting back up?

One thing I learned very early on was, if it all possible, obtain historical data of the running plant before you shut down and have it available for access during the start up. It is a very common trick for plant personnel to get the automation company to fix instrumentation that hasn't worked for years. If you can point to the fact that the transmitter has been flat-lined since 2006, it is a pretty easy argument to say that fixing that transmitter is out of scope.

3) In your notes, you mention asking the customer about their "pain points." Could you provide some examples?

Pain points are what keeps them up at night. Are they struggling with quality? Production? Throughput? Reliability? Does something break and it takes the techs 2 days to figure it out? Is there a particular area in the plant that is always in manual because the controls never work? Is the messaging awful so the batch stops and nobody knows why? Etc.

Often I can fix a lot of those things fairly easy and make them very happy. Or I can offer solutions that increase the work scope some but has very big payback.

4) My next couple projects are for new plants – one of which I will be leading. Do you have any advice specific to new plants? It looks like your "HOW to cutover section" covers a lot, but are there any additional challenges associated with new plants?

New plants can be very painful and difficult for a whole new set of reasons. Specifically:

a) How good is the engineering contractor? The large Architectural & Engineering (A&E) firms can be awful or wonderful; it all depends on what team you get. If you get the "A" team, things will be in pretty good shape. Unfortunately, they might bait you with the "A" team but swap you the "C" team later in the project or you end up with the "C" team due to turnover. Either way, the engineering is just wrong. Wrong pipe, wrong materials, wrong instruments, wrong drawings, wrong…wrong…wrong. And it's your job to make it work using BIFF principles (Big Improvements for Free) because the money has already been spent.

b) Was anything reviewed by someone other than the engineering contractor? The best option is for the plant personnel to review and approve everything; however, the plant often lacks either the expertise or the time to do that and the engineering contractors are infamous for dropping 1,000 pages on your desk and demanding you approve it overnight or "the project will be delayed and it was your fault." The second-best option is for a third party to at least look things over and catch the worst stuff. If nobody looks it over, then you better have the "A" team or it will be bad.

c) Does anyone even know how this is supposed to work? Is the plant a copy of an existing plant and the process is well understood (and ideally you have people from that plant helping you) OR is this Serial #1 and the only people who have a vague clue are some lab chemists who had a tiny pilot reactor running somewhere? Obviously, Serial #1 is going to be tricky because nobody knows what they don't know and nobody has the answer.

d) What is the schedule/budget like? Was it stupid aggressive to start? If so, it will be tough, as nothing ever goes to plan on a new plant and both the budget and schedule are bound to suffer. I have had no-bid projects that I knew were badly estimated because failure was virtually assured, and I was much happier having my competitor get the black eye than me!

Now don't get me wrong – large projects are executed successfully all the time and with the right team things can go very smoothly. But if the client goes with an unproven, low-bid entity, they often regret the decision. I once was part of a large project that was more than half-way completed but things were going so badly that the client fired the A&E firm mid project and went with a new one. They lost $10 million in engineering but probably saved $20 to $30 million in extra startup costs because the first firm was doing so poorly.

This article previously appeared on ISA Interchange in December 2016. Reprinted with permission.

About the Author

Hunter Vegas PE holds a BSEE degree from Tulane University and an MBA from Wake Forest University. His job titles have included instrument engineer, production engineer, instrumentation group leader, principal automation engineer, and unit production manager. In 2001, he joined Avid Solutions, Inc., as an engineering manager and lead project engineer, where he works today. Vegas has executed nearly 2,000 instrumentation and control projects over his career, with budgets ranging from a few thousand to millions of dollars. He is proficient in field instrumentation sizing and selection, safety interlock design, electrical design, advanced control strategy, and numerous control system hardware and software platforms.

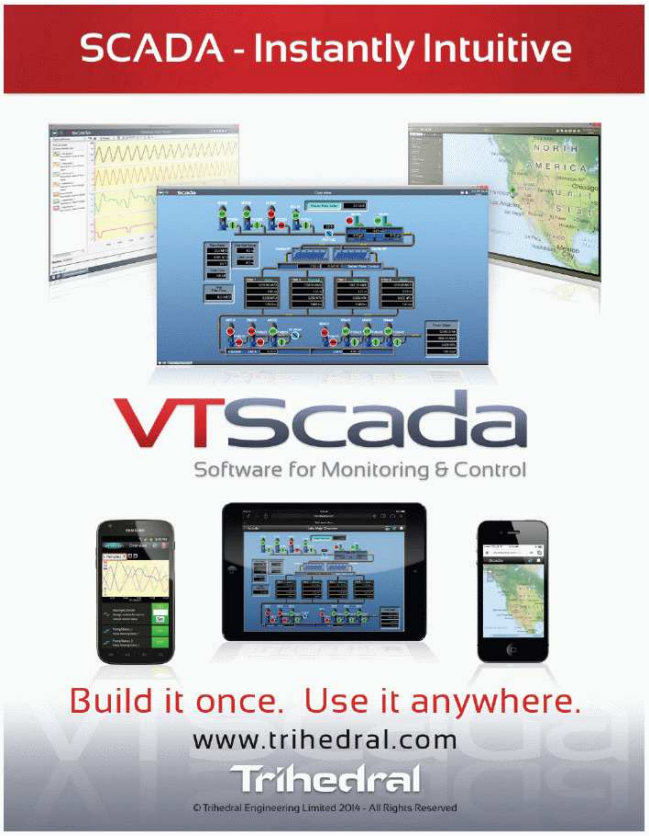
WWID is on LinkedIn

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 mid-2016, LinkedIn has over 460 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**

LinkedIn



SOCIETY NEWS

ISA Introduces our 2017 Society President: Steven Pflantz

From ISA news release at www.isa.org

The International Society of Automation (ISA) announces Steven W. Pflantz, PE, as its 2017 President.

In this position, Pflantz will work with Society leaders and staff to increase awareness of the value and relevance of the ISA brand and build on ISA's proven range of capabilities and resources for automation professionals, which includes standards development, education, training, certification, certificate programs, publications, and technical symposia and conferences.

Pflantz is an Associate in the St. Louis, Missouri office of CRB Consulting Engineers, Inc., a global consulting, design and construction services firm. He serves as a technical leader on many of CRB's electrical and automation design projects, applying his extensive electrical engineering experience-particularly in the areas of instrumentation and controls.

A long-time ISA member and leader, Pflantz brings to his role as Society President a deep understanding of the automation profession, the needs and expectations of ISA members, and the value and significance of automation careers.

In 2012 and 2013, he served as Vice President of ISA's Professional Development Department, encouraging members to take better advantage of the Society's leadership training and development opportunities. He's also served on ISA's Executive Board (2008 and 2012) and as an ISA district vice president (2007 and 2008).

Pflantz has played a key role within the Automation Federation-ISA's umbrella organization-on significant workforce development initiatives, including the formation of the Automation Competency Model and improving STEM (science, technology, engineering, mathematics) education in secondary schools.

He is ardent supporter of *FIRST*® (For Inspiration and Recognition of Science and Technology), a not-for-profit public charity designed to inspire young people's interest and participation in science and technology, and to motivate students to pursue education and career opportunities in STEM fields. Each year, Pflantz represents ISA and the Automation Federation at the *FIRST* Championship, an international STEM celebration for K-12 students held in St. Louis and highlighted by the *FIRST*® Robotics Competition.

"I'm honored to have the opportunity to serve as ISA President for 2017. ISA is an organization with a long and distinguished history of providing value to automation professionals and to the automation community at large," says Pflantz. "My overriding goal is to build upon ISA's financial and operational success. One way I believe we can do this is by better leveraging our core strengths and capabilities in new ways and to take advantage of new business opportunities. We have so much technical expertise, knowledge, and content we can bring to bear to solve problems across a diverse range of industries beyond the processing and manufacturing sector."

Pflantz has been at CRB Consulting Engineers since 2001. Before that, he held positions as: Senior E&I Engineer at Emerson Process and Air Products; Project Engineer at Celotex Corporation and TEC Systems, Inc.; and COOP Engineer at TAMKO.

In 2012, Pflantz was inducted into the Academy of Electrical and Computer Engineering at the Missouri University of Science and Technology. He's also a member of the International Society of Pharmaceutical Engineering (ISPE).

Pflantz received a bachelor's of science degree in electrical engineering from the Missouri University of Science and Technology.

About ISA

The International Society of Automation (www.isa.org) is a nonprofit professional association that sets the standard for those who apply engineering and technology to improve the management, safety, and cybersecurity of modern automation and control systems used across industry and critical infrastructure. Founded in 1945, ISA develops widely used global standards; certifies industry professionals; provides education and training; publishes books and technical articles; hosts conferences and exhibits; and provides networking and career development programs for its 40,000 members and 400,000 customers around the world.

ISA owns Automation.com, a leading online publisher of automation-related content, and is the founding sponsor of The Automation Federation (www.automationfederation.org), an association of non-profit organizations serving as "The Voice of Automation." Through a wholly owned subsidiary, ISA bridges the gap between standards and their implementation with the ISA Security Compliance Institute (www.isasecure.org) and the ISA Wireless Compliance Institute (www.isa100wci.org).

AUTO-QUIZ: BACK TO BASICS

Likely Causes of High Process Variability?

The Question:
If diagnostic software flags a controller as having high process variability when its output is hitting a low limit, the MOST probable cause is:

a) zero shift in the measurement

b) noisy measurement

c) nonlinear control valve

d) oversized control valve

e) none of the above

The Answer:

Controller output successively hits its low limit and manifests a saw tooth oscillation.

An *oversized control* valve will operate next to the seat where the friction and stick slip is greatest.

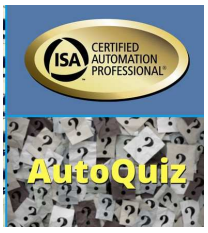
A *noisy measurement* increases high-frequency variability but does not necessarily cause a controller output to hit its limit.

A *nonlinear* valve may require detuning but does not necessarily cause a controller output to hit its limit.

Zero shift, or bias errors, exists to some degree in all measurements and results in running at a shifted set point. However, is does not cause a controller output to hit its limit unless it is extremely large, which is not as probable as an oversized valve. Such large errors are not common, and during calibration, the technicians would have certainly discovered the problem.

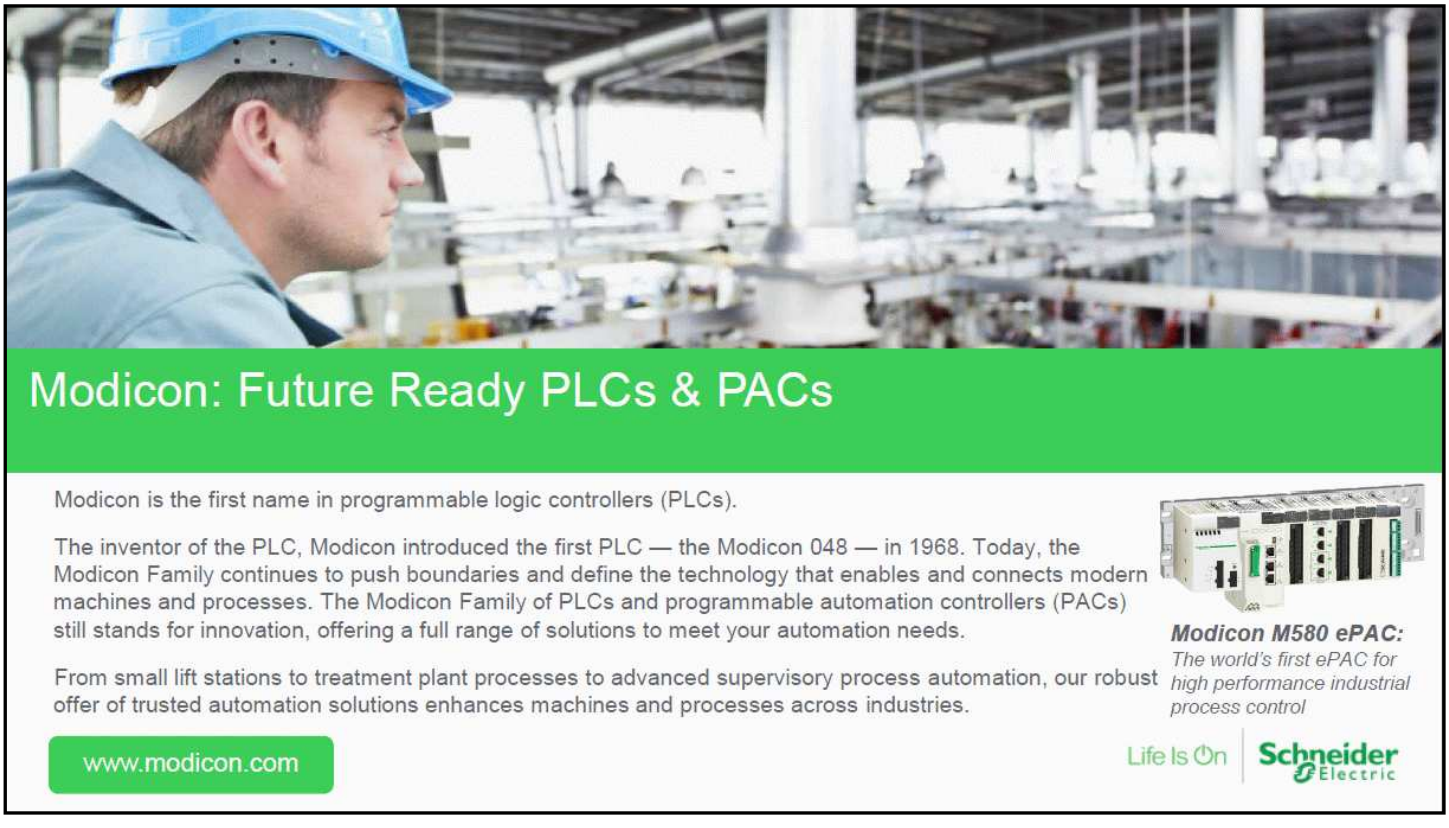
The best answer is **D**, oversized control valve.

This automation industry quiz question comes from the ISA Certified Automation Professional certification program.



ISA CAP certification provides a non-biased, third-party, objective assessment and confirmation of an automation professional's skills. The CAP exam is focused on direction, definition, design, development/application, deployment, documentation, and support of systems, software, and equipment used in control systems, manufacturing information systems, systems integration, and operational consulting. Click this link for information about the CAP program. The following question comes from the CAP study guide, Performance Domain VI, Operations and Maintenance. Long-term support of the system.

This article was originally appeared in ISA Interchange in Feb 2017. Edited by Joel Don. Reprinted with permission.



Call for Newsletter Articles

The WWID newsletter is published four times a year (winter, spring, summer, and fall) and reaches the WWID's over 1,600 members. Each issue is approximately 32-44 pages long, and is electronically printed 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 are 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@grahamnasby.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@grahamnasby.com.

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2017 Symposium Details
Date: Tues-Thurs, August 8-10, 2017
Location: Orlando, Florida, USA
Venue: Wyndham Lake Buena Vista Resort
General Symposium Chair: Pavol Segedy, PE
Website: www.isawwsymposium.com

Future Symposium Dates – Save the Date

WWAC 2018: August 7-9, 2018 in Location to be announced
WWAC 2019: August 2019, location TBA

About the ISA Water/Wastewater Division

The ISA Water / 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. The division also publishes a quarterly newsletter, and has a scholarship program to encourage young people to pursue careers in the water/wastewater automation, instrumentation and SCADA field. For more information see **www.isa.org/wwid/**

About the ISA

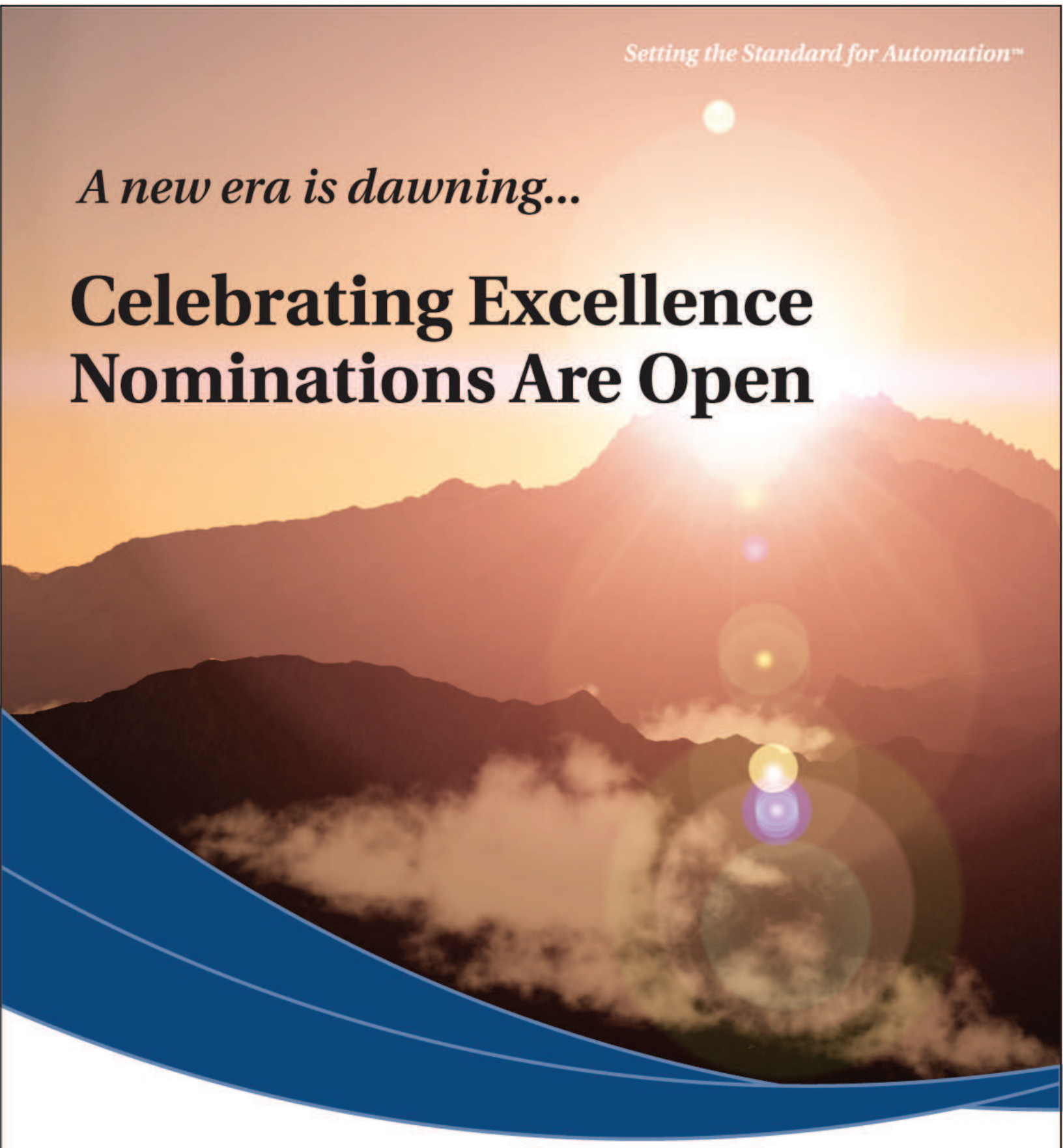
The International Society of Automation (www.isa.org) is a nonprofit professional association that sets the standard for those who apply engineering and technology to improve the management, safety, and cybersecurity of modern automation and control systems used across industry and critical infrastructure. Founded in 1945, ISA develops widely used global standards; certifies industry professionals; provides education and training; publishes books and technical articles; hosts conferences and exhibits; and provides networking and career development programs for its 40,000 members and 400,000 customers around the world. For more information see **www.isa.org**

ISA Water/Wastewater Industry Division

Setting the Standard for Automation™

A new era is dawning...

Celebrating Excellence
Nominations Are Open



For details go to:
www.isa.org/honors

ISA™

Water/Wastewater and Automatic Controls

Symposium2017

8–10 August
Wyndham Lake Buena Vista Resort
Orlando, Florida USA

Sponsorship and Exhibitor Opportunities

www.isawwsymposium.com

Presented by:

ISA Water & Wastewater Industries Division

Technical Co-sponsors:

Water Environment Federation® the water quality people®

American Water Works Association Florida Section

Florida Water Environment Association

ISA Tampa Bay Section

Standards
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Publishing
Conferences & Exhibits

Setting the Standard for Automation™

About the Symposium

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, 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).

The 2017 ISA Water/Wastewater Symposium will be held at Wyndham Lake Buena Vista *Disney Springs*® Resort Area, near Orlando, Florida. This modern hotel offers luxury accommodations and is located right on the Walt Disney® Resort property. 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, Automation, System Integration, Plant Case Studies, New Technologies, Process Optimization**
- **Track 2 – SCADA Workplace Integration, 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 United States.

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 7-8, 2017

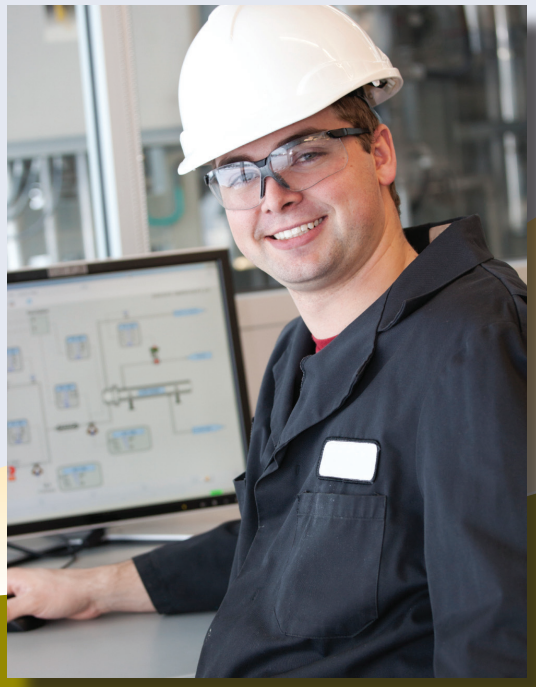
- Optional Full-Day Training Courses
- Symposium Registration
- Local Water/Wastewater Plant Tour (late afternoon Tuesday)

Wednesday, August 9, 2017

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

Thursday, August 10, 2017

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



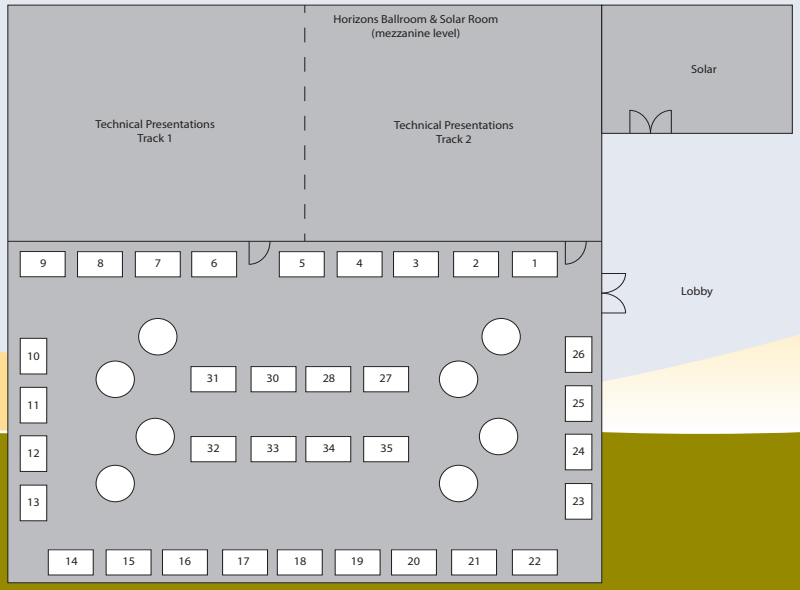
Sponsorship Opportunities

Sponsorship Level	Platinum $3200	Gold $1750	Silver $750
General Information			
Number of Sponsorship Opportunities	5	10	20
Number of Full Conference Passes	2	1	--
Cost of Exhibitor Booth - comes with 2 additional vendor passes (Note: Regular cost of an exhibitor booth with 2 passes is $925)	Included	Add $600	Add $800
On-site Visibility			
Logo on signage near registration desk, speakers room and hallways	Top Tier	Middle Tier	Lower Tier
Company logo in the 16 page Symposium Program Booklet	Large	Medium	Small
Advertisement in the 16 page Symposium Program Booklet	Full page	1/2 page	1/4 page
Symposium Website			
Logo with web link on Symposium website	Top Tier	Middle Tier	Lower Tier
Logo in online Symposium program	Large	Medium	Small
Pre-Event Visibility			
Logo in pre-event emails to 2000+ prospective customers Emails to announce: Early-bird registration, Keynote, Invited Speakers, Sponsor Announcements, Seminar Schedule, Advance Program, Early-bird registration reminder, Tour Information, Onsite program, etc.	8 emails	4 emails	2 emails
Logo in 16 page Symposium Advance Program	Large	Medium	Small
Advertisement in Symposium Advance Program	Full page	1/2 page	1/4 page
Post Event Visibility			
Company and logo listed in post-event email to attendees	Yes	Yes	Yes
Logo in post-event email announcing proceedings	Large	Medium	--
Company logo and link retained on WWAC 2016 website	Yes	Yes	Yes
ISA Water / Wastewater Newsletter - published quarterly			
Company name and logo in 2 newsletters prior to event	Yes	Yes	Yes
Advertisements in 2 newsletters before and 1 newsletter after	Full Page	1/2 page	1/4 page

Exhibitor Opportunities

Exhibitor tables are priced at $925 each which includes:

- one six foot table with skirting, 2 chairs, duplex electrical outlet
- two vendor passes, which include ID badges and full conference access
- additional vendor passes can be purchased for $200/each
- breakfasts, coffee breaks, and lunches on Aug. 9 & 10
- admission to the general reception with cash bar on the evening of Aug. 9th
- exhibit room hours: Aug. 9 & 10 (8:00am-5:00pm), and during Aug. 9th evening reception
- exhibit setup: Aug. 8 (1:00pm-9:00pm); exhibit take down Aug. 10 (5:00pm-8:00pm)



Why Sponsor the WWAC

Build and maintain brand recoginition by being a sponsor for the 2017 ISA Water/ Wastewater and Automatic Controls (WWAC) Symposium. This focused event allows you to reach out to both the water and wastewater sectors with one integrated message.

Advantages of sponsorship include:

- Pre and post event visibility
- Exposure in the quarterly ISA water/wastewater newsletter
- Advertising in symposium programs
- Sponsor profiles on symposium website
- Visibility in symposium-related emails to attendees and ISA membership

Why Exhibit at WWAC

Exhibiting at the 2017 ISA Water/ Wastewater and Automatic Controls Symposium (WWAC) puts you face-to-face with a variety of industry professionals searching for your products, services, and insights.Use this focused event to build key business alliances and meet new prospects.

Network with the operators, maintenance managers and facility owners who are responsble for the smooth operation of water/wastewater facilties, as well as the engineers, technicians and programmers who build and develop automated plants.

Full sponsor and exhibitor information and forms can be found at www.isawwsymposium.com

2017 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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Fax: (919) 549-8288
www.isa.org

For more information visit:
www.isawwsymposium.com

ISA WWAC Symposium2017

Sponsorship and Exhibit Space Contract

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Research Triangle Park, NC 27709
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FAX (919) 549-8288
E-MAIL info@isa.org
www.isa.org

2017 ISA Water / Wastewater and Automatic Controls (WWAC) Symposium

8-10 August 2017 • Wyndham Lake Buena Vista Resort • 1850 Hotel Plaza Blvd, Lake Buena Vista, FL, USA

Instructions: Review the Sponsorship & Exhibitor Prospectus. Complete this form, Sign it, and Fax it ISA headquarters at +1 (919)-549-8288

1. Applicant Information

Company Name: _____

Street Address: _____

City: _____ State/Province: _____ Country: _____

Phone: _____ Fax: _____ Postal Code: _____

Contact Person: _____ Position: _____

ISA Member # (if applicable): _____ Email: _____

2. Sponsorship Opportunities (check all that apply)

❑ **Platinum Level $3200**
includes 2 full conference passes
includes 1 exhibitor table with two vendor passes

❑ **Gold Level.....$1750**
includes 1 full conference pass

❑ **Silver Level $750**

❑ Breakfast Sponsor $750

Names of Conference Attendees

❑ 1: _____ Add $400 if not Platinum/Gold sponsor

❑ 2: _____ Add $400 if not Platinum sponsor

❑ 3: _____ Add $400

3. Exhibitor Opportunities (Table-Top Exhibits)

Do you wish to exhibit at the symposium? YES ____ NO _____

An Exhibit Table includes a 6' skirted table, two chairs, duplex outlet, and two vendor passes.

❑ Regular Price.....$925
❑ Price for Platinum Sponsors.....N/A, included
❑ Price for Gold Sponsors.....$600
❑ Price for Silver Sponsors.....$800

Preferred Exhibit Table Location: _____
ISA reserves the right to assign comparable space if the preferred location is not available

Names for Vendor Passes

❑ 1: _____ Included with exhibit table

❑ 2: _____ Included with exhibit table

❑ 3: _____ Add $200

4. Acceptance of Terms and Conditions

Contract terms and conditions are on the reverse of this page. These rules and regulations are incorporated by reference into this contract, and by executing this agreement the sponsor/exhibitor agrees to be bound thereby as if same had been set forth fully herein.

Authorized Signature: _____ Print Name: _____ Position: _____

Technologies and/or products to be displayed/promoted: _____

For exhibitors: We request that, if possible, space assignment near the following potential exhibitors be avoided: _____

5. Payment for Sponsorship/Exhibiting

Total Amount: _____ **US Dollars** (from sections 2 and 3)

Payment in US currency only.
Full payment required with application.
Make check or money order payable to ISA.
Call ISA Customer Services for wire transfer information.

www.isawwsymposium.com

To pay by credit card, complete the following:

Charge: ❑ Visa ❑ Mastercard ❑ Amex ❑ Discover

Charge Account Number: _____

Expiry Date: _____

Signature: _____

WWAC2015-EX-FRM-2014-08-03

Exhibit Space Contract Terms and Conditions

1. **APPLICATIONS.** Applications for exhibit space must be made on the form printed on the reverse hereof, completed as requested, and accompanied by the required payment.

   Products and services to be displayed must be specified on the application.

   ISA reserves the absolute right to decline any application for space if, in ISA's judgment, the products or services to be shown or demonstrated are unrelated to the scientific and educational purposes of the Conference. This application becomes a contract only when accepted by ISA by notifying applicant of the assignment of a specified exhibit table.

2. **EXHIBIT SPACE AND FLOOR PLAN.** Exhibit tabletop space includes 6ft table, 2 chairs, one trash can, and duplex outlet. No rent allowance will be made if standard equipment is not desired. The exhibit floor plan for this Exhibition will normally be maintained as initially offered. ISA reserves the right to modify the plan to the extent necessary for the best interests of the Exhibitors and ISA or to correct inaccuracies or errors. ISA also reserves the right to modify the plan to the extent necessary for the best interests of the Exhibition.

3. **SPACE ASSIGNMENT.** Space available will be allocated on a first come basis.

4. **EXHIBIT SPACE PAYMENT SCHEDULE.** 100% of total exhibit fee must be paid with application.

5. **CANCELLATION**. An Applicant may cancel the contract by giving written notice of cancellation received by ISA on or before 2 months ahead of conference start date. Upon receipt of a timely notice of cancellation, ISA will refund the exhibit table fee previously paid by Applicant. Applicant agrees that any cancellation after 2 months ahead of conference start date, withdrawal from the event, or failure to show at the event is a material breach of this agreement and ISA will retain the entire exhibit fee paid by Applicant in such event. Applicant agrees that the amount of the exhibit fee is a reasonable measure of the damages to ISA in the event of such breach. ISA agrees that the retention of the fee is Applicant's sole liability in the event of such breach. All notices of cancellation must be delivered to ISA before 2 months ahead of conference start date. No notice is effective unless submitted to ISA in a manner in which proof of receipt by the deadline can be shown, such as certified mail with a return receipt, courier with signed receipt, or an acknowledged e-mail from ISA.

6. **SUBLETTING EXHIBIT SPACE.** No Applicant shall assign, sublet or apportion the whole or any part of the space allotted. Applicant may not display equipment or materials from other than its own firm or joint Applicants' firms in said space, without the consent of ISA.

7. **INDEMNITY AND LIMITATION ON LIABILITY.** Applicant covenants and agrees to hold and save harmless ISA; the owners, operators, and managers of the Exhibit Facility; and the respective officers, agents and employees of each (collectively referred to as Exhibit Management) from any and all claims of liability, damage, or expense resulting from any injury to or death of any person, including Applicant's employees, agents, and contractors, occurring within Applicant's exhibit table or resulting directly or indirectly from any act or omission of Applicant or any loss of, damage to, or theft of any property. An omission of Applicant includes any failure of Applicant to comply with any of the terms and conditions of this Contract; any of the Conference and Exhibit Rules and Regulations; any Rules and Regulations of the Exhibit Facility; and any laws of the City of the conference location. Applicant agrees to indemnify each and every member of the Exhibit Management group for any and all costs and liabilities incurred in defense of any such claim, including all expenses, attorney's fees, and any judgments awarded or settlement amounts agreed to. It is agreed that ISA Exhibit Management shall not be responsible for any loss, damage, or theft of any property of any persons, including the Exhibitor and its employees, agents, and contractors, while in transit to or from the Exhibit Facility, while in the Exhibit Facility, or otherwise.

   Except for cancellations and withdrawals permitted by Paragraph 5 above, the Applicant is responsible for total rent for exhibit space irrespective of any reason for such cancellation and withdrawal, including cancellation and withdrawal by the Applicant because of failure of product showcase to arrive for any reason or cancellation by the Sponsors as the result of action by the Exhibit Facility Management or the result of strikes, lock-outs, act of God, inability to obtain labor or materials, government action of whatsoever nature, war, civil disturbance, fire, unavoidable casualty or other causes, whether similar or dissimilar, beyond the control of ISA. In the event of cancellation by ISA as a result of the aforesaid causes, the Applicant expressly waives such liability and releases ISA of and from all claims for damages and agrees ISA shall have no obligation to Applicant.

   Applicant is a licensee of exhibit only and not an agent, employee, partner or joint venturer of or with ISA. Applicant agrees that it is solely responsible for its costs of doing business and agrees to hold ISA harmless from any obligations incurred by the Applicant as a result of contracting for any goods or services connected with the Exhibitor or with the Exhibit Facility, service contractors, or other persons or companies and to indemnify ISA for any costs or liabilities incurred in defending any such claims against ISA, including attorneys' fees, expenses, and any judgments awarded or settlement amounts agreed to.

8. **GOVERNING DOCUMENTS AND LAWS.** Applicant expressly understands and agrees to be bound by all terms and conditions and rules and regulations contained in this Exhibit Space Contract, the Exhibit Space Rules and Regulations, including any amendments which may be issued; the master lease between ISA and the Exhibit Facility; and the Exhibit Facility Rules and Regulations, copies or pertinent extracts of which are attached and/or available for inspection at ISA during normal business hours. Applicant also agrees to be bound by any deadlines or policies stated in the Exhibitor information which will be provided by ISA.

   Such documents are made an integral part of this Contract by reference as if set forth in full in the Contract. Applicant is further charged with the knowledge of, and agrees to comply with, all local, state and federal laws, regulations, and codes pertaining to health and safety and promotions, marketing, and advertising, including activities requiring copyright licenses or permission and constituting a lottery, applicable to Applicant's Exhibit.

   Compliance is Applicant's sole responsibility. This Contract will be interpreted and governed by the laws of North Carolina applicable to contracts signed and be wholly performed within North Carolina.

9. **EXHIBITOR EVENT CONFLICTS.** Exhibitor will not schedule any receptions, hospitality suites, social functions, exhibits, product demonstrations, technical seminars, training sessions, or other event or function for attendees (or potential attendees) outside of the exhibit facility during the Conference and Exhibit activity hours.

10. **SURRENDER OF SPACE.** If not cancelled as provided in this contract, Applicant's license for the exhibit space expires at the earlier deadline for move-out or actual vacation of the exhibit space. Applicant will surrender the space occupied by Applicant at the expiration of the license in the same condition as it was at the commencement of occupation. Applicant assumes sole and total responsibility for any damage to the Exhibit Facility due to construction, use, or dismantlement of Applicant's Exhibit and will reimburse ISA for any charges assessed by Exhibit Facility caused by Applicant paid by ISA, including charges for failing to vacate the premises in a timely manner.

11. **VIOLATIONS.** The interpretation and application of these Terms and Conditions and documents incorporated by reference are the sole responsibility of ISA. Violation by Applicant of these Terms and Conditions shall subject the Applicant to cancellation of its contract to occupy exhibit table and to retention by ISA of all moneys paid. Upon due notice to Applicant of such cancellation, ISA will have the right to take possession of the Applicant's space, remove all persons and properties of the Applicant, and hold the Applicant accountable for all risks and expenses incurred as a result of such re-entry and removal.

    ISA reserves the right to restrict exhibits which become objectionable because of noise, operational methods, rules violations, or any other reason and may prohibit or evict any Exhibit, which in ISA's sole opinion, may detract from the general character of the Exhibition as a whole. In the event of such restriction or eviction, ISA will not be liable for any refunds or expenses of Applicant.

    If ISA must engage an attorney to collect any amounts due under this Agreement, Applicant agrees to pay all reasonable attorneys' fees and expenses incurred by ISA.

12. **AMENDMENTS.** If any unforeseen event renders it necessary, ISA may amend these Terms and Conditions and those documents included by reference. All amendments will be published and mailed to each Applicant who shall be bound thereby. Any other changes in the terms and conditions and rules and regulations must be in writing and signed by both parties.