



## Water/Wastewater Industry Division

Setting the Standard for Automation™

### Calendar of WWID Events

- Oct 15-18, 2011 **Fall Leaders Meeting**  
Mobile, Alabama, USA
- Oct 17-20, 2011 **ISA Automation Week**  
Mobile, Alabama, USA
- Jun 9-12, 2012 **Spring Leaders Meeting**  
San Diego, California, USA
- August 2012 **7<sup>th</sup> Annual WWAC Symposium**  
Date/Location: TBA

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# Summer 2011 Newsletter

## Director's Welcome



Welcome to the WWID Summer 2011 newsletter! As your division director, I'm pleased to announce we have striven to produce a newsletter that covers a variety of topics, both technical and personal. Inside you will find a report on our WWAC symposium that was held this past June in St. Louis, an interview with a long-time WWID member, and information on this fall's ISA Automation Week. We also have included a list of new members and article by one of our symposium attendees. The newsletter concludes with one of the papers that was presented at the symposium – a case study about how to establish a successful commissioning program.

This year's Water/Wastewater symposium was not without its challenges but proved to be very successful and innovative. We had a great variety of technical content, a compelling keynote speaker, and a tour of a St. Louis Sewer District wastewater facility that was enjoyed by all.

A change in venue and shorter than usual planning cycle presented us with some challenges this year. We're very thankful to the volunteers and speakers who contributed their time and efforts to make the event a success!

This year's symposium saw some innovation as well. Two sessions were broadcast live on the Internet (these can still be viewed at <http://automation.isa.org/livestream>). Additionally, the entire conference was video-recorded and we plan to make

these available to ISA Water-Wastewater Industry Division members in the near future.

But this is only the beginning of the changes we have in store for the symposium. Our leadership team is already hard at work planning our 2012 symposium. We encourage everyone to stay tuned for some exciting announcements that will be coming up!

Jon DiPietro  
WWID Division Director

## Newsletter Editor's Welcome



Welcome to our new water/wastewater division newsletter! This summer 2011 edition is the first of our new summer, fall, winter, and spring publishing format. Each newsletter will consist of technical content, information on upcoming ISA events, updates on our annual WWAC Symposium, and a lighter article about a personality who is active in our sector.

In this issue we have a report on our 2011 symposium, an interview with long-time member Henry "Hank" Hegner, and a technical paper from this year's symposium. I invite you to read the newsletter and let me know what you think of the new format. Enjoy!

Graham Nasby  
WWID Newsletter Editor

## Message from your Director-Elect



Greetings! My name is Graham Nasby and I am the new Director-elect for the ISA Water/Wastewater Industry Division. I also have the distinct honor of being named as the general symposium chair for our upcoming 2012 WWAC Symposium. I am a firm believer the ISA Water/Wastewater Industry Division has an important role in our sector, and I will be working hard to ensure that automation, instrumentation, and SCADA continues to have a seat at the table for our society's water and wastewater infrastructure.

Like many of us, I did not initially start my career in the water/wastewater sector. My career began in the marine, pharmaceutical and semiconductor industries, but water was always a common thread. When I was recently presented with the opportunity to move into the municipal water/wastewater field, it was a natural and easy evolution. One of the major benefits of automation/instrumentation field is the adaptability of our skills.

I remember when I took my first job in the municipal area a couple years ago – I called my dad to share the news. His response was to laugh, as he remembered taking me to a water works museum when I was a kid. That museum was the old steam-powered pumping station in Hamilton, Ontario, Canada (pictured below). Apparently at the time, I was so impressed by it that I couldn't stop talking about it for months. Dad thought it was only natural that I ended up working on municipal water works projects as a day job.

I look forward to working with all of you during the upcoming year. Please do not hesitate to contact me with any of your ideas/suggestions for the division. It's your division; let's make it work for you!

Graham Nasby, P.Eng., PMP  
WWID Director-elect &  
General Symposium Chair for the 2012 WWAC Symposium



*Photo of the c1857 steam-powered pumping station in Hamilton, Ontario, Canada. The engines, which last ran in 1937, are now preserved as a museum. A childhood visit was what began Graham's interest in the water/wastewater sector.*

## Upcoming Events

We are pleased to announce that the WWAC Symposium will be moving back to its traditional August timeslot for 2012. We will be announcing the exact date/location of the symposium in our fall newsletter. The August 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 2012!

- ISA Automation Week  
Oct 17-20, 2011 – Mobile, Alabama
- ACE12: American Water Works Association (AWWA)  
June 10-14, 2012 – Dallas, Texas
- **7th Annual ISA Water/Wastewater Symposium  
August 2012 – date/location TBA**
- WEFTEC 2012: Water Environment Federation (WEF)  
Sept 29 – Oct 3, 2012 – New Orleans, Louisiana



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[www.isaautomationweek.org](http://www.isaautomationweek.org)

**ISA Automation Week**  
Technology and Solutions Event  
17-20 October 2011  
Arthur R. Outlaw Convention Center  
Mobile, AL USA

Register at [www.isaautomationweek.com](http://www.isaautomationweek.com)

## 2011 WWAC Symposium Report

The ISA Water/Wastewater Industry Division hosted its 6th Annual Water/Wastewater and Automated Controls Symposium at the Chase Park Plaza Hotel in St. Louis, Missouri, USA on June 22-23, 2011.

The two day symposium featured eight speakers from across North America, a keynote address, a training course on alarm management, and a tour of one of St. Louis's largest wastewater treatment plants. A post-symposium reception also went into the wee hours of the morning on the last day.

The symposium began with a day-long training course on Alarm Management taught by industry veteran Bill Hollifield. Having the focused short-course has long been a feature of the WWAC symposium. This year's course covered ANSI/ISA 18.2 (2009) *Management of Alarm Systems for the Process Industries*, and how it can be used as an effective tool for improving alarm performance at our plants. The day concluded with a tour of the Bissell Point Treatment Plant.

On the second day, the keynote talk was delivered by Mr. Jeff Theerman, Executive Director of the Metropolitan St. Louis Sewer District (MSD). Entitled "*Technology and our Future in the Water Sector*" Mr. Theerman's talk focused on trends in our sector and how new technologies and equipment, especially in terms of automation/instrumentation, will be the key to securing our society's future water security.

Speakers at the symposium presented a wide variety of topics on subjects ranging from case studies about system upgrades and commissioning strategies to new software/instrumentation technologies. We also had several talks about control system standardization and how to effectively manage the processes of construction and plant optimization. Turnout was good with all seats in the room being filled by attendees.

The day concluded with a reception where our attendees got to meet with each other informally and share their collective knowledge / experience in a social setting.

A bit thank you to the symposium organizing committee, ISA staff, our vendor partners, sponsors and the local St. Louis ISA section for a job well done!



Photo from auditorium of the WWAC Symposium at the Chase Park Plaza Hotel in St. Louis, Missouri, USA



ISA Secretary/President-elect Bob Lindeman gave the opening remarks at the WWAC Symposium



Keynote speaker Jeff Theerman receiving a thank you gift from WWID member Graham Nasby



Speaker Cameron Kamrani from Kamrani Engineering giving his talk on "SCADA: An Integrative Approach"



Speaker Scott Holzborn from Siemens presenting a talk on the application and use of Magnetic flowmeters



## 2011 Symposium Award Winners

We are pleased to announce the following award winners from the 2011 WWAC Symposium:

### *Best Symposium Presentation*

In recognition of the best symposium presentation

- 1st Prize: Carmon Kamrani, Kamrani Engineering Inc.  
"SCADA: An Integrative Approach"
- 2nd Prize: Scott Holzborn, Siemens Americas  
"Leveraging Electronic Flowmeters to Improve Accuracy and Value in Water Management"

### *Best Symposium Paper*

In recognition of the best technical paper

- 1<sup>st</sup> Prize: Graham Nasby, Eramosa Engineering Inc., and Matthew Phillips, City of Guelph Water Services Dept.  
"SCADA Standardization: Modernization of a Municipal Waterworks with SCADA Standardization: Past, Present and Planning for the Future"
- 2<sup>nd</sup> Prize: Richard Birdsell, Orange County Sanitation District  
Mike Puccio, Orange County Sanitation District  
"Establishing a Successful Water/Wastewater Commissioning Program"

Each year at the WWAC symposium, prizes are given out for the best presentation and best paper. During the call for papers process, speakers are given the option of presenting a 35 minute PowerPoint presentation or a combination of a PowerPoint presentation along with a 8-12 page technical paper. The awards are structured that all speakers are eligible for the Best Symposium Presentation Award. The Best Symposium Paper is selected from those speakers who also submitted papers. The awards are decided by the symposium Program Committee at the conclusion of the symposium. Please congratulate this year's symposium award winners!



Our keynote speaker Jeff Theerman, along with longtime WWID members David Hobart and Wally Ingham

## 2011 Symposium Plant Tour

As part of the 2011 WWAC Symposium, the Metropolitan St. Louis Sewer District (MSD) organized a tour of their Bissell Point Water Treatment Plant. Special thanks to Mr. Jeff Theerman, Executive Director of the MSD, for making the tour possible for us. Treatment Plant Supervisor Mike Townely acted as our tour guide and consummate host during the late-afternoon tour. The Bissell Point Water Treatment Plant is one of the largest wastewater treatment plants in the MSD. The MSD's network of sewers and treatment plants is considered by many to be the fourth largest sewer district in the United States.

Mike provided us with the following summary of the plant, "The plant started operation in 1970 as a Primary only treatment plant. In 1993 the plant was expanded to Secondary Treatment. Construction is beginning next year to add Disinfection to the treatment process. Average daily flow is 150 MGD with a peak wet weather flow of 350 MGD. We use incineration to handle our solids. There are 6 multiple hearth incinerators. The plant site is 100 acres in size."



Mike (in the white hat) telling us about the history of the plant.



Photo of the tour group, taken in near the secondary clarifiers.

## Symposium Reflections Impressions from a First Time Attendee

By Matt Phillips, 2011 WWAC symposium attendee



The 2011 ISA Water & Wastewater Symposium in St. Louis was a great experience. It was refreshing to attend a conference where everyone had the same automation and controls perspective, and everyone spoke the same “language.”

As my first experience presenting at a conference it was great to share my work experience and lessons learned with others. Large or small systems whether near or across the continent, we all have similar stories to share and solutions that have wider application than many realize. This became abundantly clear to me during the presentations.

We all like to think of our own water systems as unique and special. While that is true in many respects, in terms of the challenges we face as water/wastewater automation professionals, we have a lot more in common than we have differences, no matter where we are from.

I would like to encourage anyone who has the chance to attend the next symposium – whether as an attendee or a presenter – and get a fresh perspective on the issues you face every day. Maybe even share your experience with others. You’ll be glad you did.

**About the Author:** *Matt Phillips is the Water Security Coordinator (SCADA) for the City of Guelph’s Water Services Department, located in Guelph, Ontario, Canada. He co-presented the paper “Modernization of a Municipal Waterworks using SCADA Standardization: Past, Present and Planning for the Future” at the 2011 WWAC Symposium.*



Photo from the WWAC symposium speakers dinner that was held at Dressel’s Public House in St. Louis, Missouri

## 2012 WWAC Symposium Planning Update

By Graham Nasby, 2012 WWAC Symposium Chair

It is both an honor and a pleasure to be named as the General Symposium Chair for the 2012 ISA Water/Wastewater and Automatic Controls Symposium. In the past several weeks I have been hard at work putting together a symposium committee and beginning the year-long process of planning that precedes the actual symposium.

One of my first tasks after being asked to head up the 2012 symposium was to reflect on why we have a WWAC symposium. In other words, I had to ask myself the question of whether our symposium is still relevant for today’s water/wastewater automation professional. For me the answer is an unequivocal “yes.” From my experiences at the 2011 WWAC symposium in St. Louis, I recommend that anyone involved with automation, instrumentation, and/or SCADA in our sector should seriously consider attending.

The 2011 WWAC symposium was my first time attending an ISA technical symposium, and I had the good fortune to present a paper on SCADA Standardization with a friend of mine from the City of Guelph. The value of this event was surprising. The feeling of being in a room with peers who truly understood and appreciated the challenge of doing automation in the water/wastewater field was something I had never experienced before. This is something you can’t get at the general-themed AWWA and WEF events. *The WWAC symposium is our symposium because it caters to our specialized needs of automation, instrumentation and SCADA, and our specialized needs alone.* This is something special that we need to cherish, build and support.

The challenge for me as general symposium chair is to not only build upon past successes, but to also introduce the symposium to our up-and-coming automation professionals and to continue to grow/develop the symposium with new technologies. Let me brief you on some of the initiatives that this year’s symposium committee is currently working on.

This year is going to be one of changes. In 2011, we tried something new by co-locating the symposium in St. Louis, Missouri with another ISA event in June. We are not going to do that again. The St. Louis location was too far away from our traditional attendees in the South-Eastern USA and it also conflicted with a major AWWA conference that was held earlier that month. So for 2012, we be moving back to our traditional timeslot of August, and we are hoping to locate it in the Orlando, FL area. We will be making an announcement regarding the 2012 WWAC Symposium dates/location shortly.

Part of the 2012 symposium date/location announcement will also be the launch of a new WWAC Symposium website, thanks to our new symposium marketing chair Jon DiPietro. The new website will be the spring board for information about the conference, calls for papers, keynote/plenary speakers, and other events associated with the symposium.

Additional website features will include interviews with key symposium partners, videos of past symposium presentations, and sample papers/presentations in order to make it easier for employers to see the value of our symposium. The website will also serve as a gateway for symposium registration and for interacting with other symposium attendees.

One area I will be working on will be to improve the overall experience for our vendor exhibitors and sponsors. I personally really like vendors. They are the folks that provide me with the tools (hardware, software, and services) that I use to solve automation challenges at my day-job. The WWAC symposium needs to have a multi-faceted role of providing high quality technical talks and training, as well as information about new products and services – and this is where we need to rely on our vendors. At the end of the day our vendors are looking for the same thing as all of us end users – to effectively harness technology to get the job done. I am looking forward to working with our vendor partners to do exactly that.

Another area I aim to focus more on is promoting the PDHs (professional development hours) and CEUs (credit equivalent units) that the WWAC symposium can offer attendee. Many of us in our plants have continuing education and professional development requirements. Attending the WWAC Symposium is a natural fit to satisfy these requirements in a cost-effective way. In the marketing materials for the 2012 symposium I will be making sure we emphasize the PDHs and CEUs that attendees can get from attending. This will be yet another reason for employers to see value in sending their employees to the symposium.

Lastly, the symposium committee and I are currently looking into a theme for this year's WWAC symposium. Three possible areas we are looking at are Using SCADA for Energy Management, Designing High Performance HMIs, and Effective Alarming Techniques. If you have any other theme ideas, or any suggestions for the symposium, you are always welcome to contact me and share your ideas.

An announcement regarding the date/location of the 2012 WWAC symposium will be made shortly, along with the first round call for papers. This year's symposium format will include the traditional presentations and papers, as well as a new category for posters. We have exciting plans and we are looking forward to announcing them in the near future.

I am looking forward to the upcoming 2012 WWAC Symposium. I hope to see you there!

Yours very truly,

Graham Nasby

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## Q&A Spot Light Interview with Henry “Hank” Hegner



*Henry “Hank” Hegner has been a member of the ISA and water/wastewater industry division (WWID) for over 30 years. He has held various roles in the society, including director of the WWID. Hank has kindly agreed to share his insights into the water/wastewater sector and ISA membership in this exclusive interview.*

**WWID:** Tell us a little about yourself.

**Hegner:** I began my career as a research scientist in the aerospace industry. My initial training was from an electrical engineering degree (BSEE) that I completed at the University of Illinois in Urbana, Illinois in 1958. From there I worked on a number of U.S. Air Force projects at McDonnell Aircraft Corporation and the IIT Research Institute. This was a fun time during my career as much of the work was research-oriented and it allowed me to complete my MSEE and do doctoral-level coursework at the same time. After leaving the IIT Research Institute, I worked on a number of projects involving instrumentation/control on ships, airplanes and ground-based platforms. The common thread being the application of automated control and instrumentation technology in harsh and challenging environments.

**WWID:** When did you first get involved in the water/wastewater sector?

**Hegner:** My entry into the water/wastewater sector only came later in my career. It was 1998 when I got my first taste of working with the water guys as I like to call them. At the time was looking for something different so I joined Magyar & Associates as a senior applications engineer. With Magyar, I now help municipalities and industrial plants select liquid and gas process analyzers for their various needs. It’s a fun challenge.

**WWID:** Did you originally plan to work in water/wastewater, or was it serendipitous like many of us?

**Hegner:** No, I did not plan to work in water/wastewater. Like many folks in our industry, I sort of fell into water/wastewater. At the time I was looking for something new to try and an opportunity came up, so I went for it. Now, thirteen years later, I’m still in water/wastewater and loving it.

**WWID:** What do you like most about working in water/wastewater?

**Hegner:** I enjoy the challenge of approaching process measurement problems as an instrumentation and automation specialist. The ability to select and provide workable solutions that allow plant personnel to run their plants better is

a real plus for me. I like providing people with tools to make their jobs easier.

**WWID:** What sorts of things have you been involved with over the course of your career?

**Hegner:** As I mentioned, I have worked on a wide range of projects over the years. I am particularly proud of some of the work I did with the U.S. Navy to help improve the reliability of their shipboard electrical and mechanical systems. This work included developing methodologies for doing Condition Based Maintenance (CBM); machinery performance, condition and maintenance monitoring; fault detection, diagnosis, and prognosis (DD&P) techniques; failure analysis; and implementing machinery sensors. Some of the techniques that came out of this included fiber optic sensor systems, real-time machinery monitoring systems, and automated test technologies.

**WWID:** In addition to your work with the Navy, are there any notable/interesting projects that you worked on, which you would like to share with us?

**Hegner:** Yes, I would be happy to. One of the neat things about my career is that I have been able to work on a wide variety of projects, each with its own individual challenges and design constraints. Some of these projects have included:

- Developed proposed attitude, stabilization and control system of the Gemini Space Capsule, test equipment for GAM-72 missile, an air launched diversionary missile, autopilot and programmer for McDonnell Aircraft Corporation on the Alpha Draco Research vehicle launched at the Kennedy Space Center.
- Technical program and management support on the US Navy’s advanced Fiber Optic (FO) sensors for Mechanical Diagnosis Project on the U.S. Navy’s Advanced FO Sensors for the Mechanical Diagnosis Project, including the development of FO and optical microelectromechanical (MEMS) sensors for condition monitoring of shipboard hull, mechanical and electrical (HM&E) systems.
- For the U.S. Navy, I developed advanced damage control (DC) sensor requirements and technology for sensing flooding, hatch and door closure, hull integrity, fire main system pressure/flow, and ventilation air duct flow.
- For shipboard systems, I assessed FO sensor reliability and durability for machinery monitoring and control DC systems.
- Undertook a program for U.S. Air Force to demonstrate feasibility of techniques for a portable flight-line system that determined foreign object damage compressor rotor blades of an operating turbine engine including examination of a wide variety of instrumentation and sensing techniques.

- U.S. Air Force and Army programs to investigate secondary effect phenomena associated with operation of nonelectronic weapon systems and related techniques for sensing these phenomena to obtain information concerning status of the system or its components. The secondary effect sensing techniques investigated were optical, electric and magnetic fields, acoustic, vibration, thermal, fine particles, and vapour.
- As part of my work with the U.S. Air Force, I developed a new method for detecting turbine blade damage. This eventually led me to be filing a patent for the technology. The patent was aptly titled "System for detecting damage in turbine blades."

**WWID:** How did you first get involved with the ISA?

**Hegner:** I first joined the ISA back in 1964. That would be over 40 years ago. At the time, I was working at the IIT Research Institute and a colleague of mine who was an ISA member encouraged me to join.

**WWID:** I understand you have been a member of the ISA WWID (water/wastewater industry division) for many years. How has the WWID helped you in your career?

**Hegner:** I joined the water/wastewater division in 1998 when I joined Magyar & Associates. At the time I had been a ISA member for years, but saw value in the WWID division because of its water/wastewater focus. As a consulting engineer and sales engineer with Magyar, the WWID opened doors for me in terms of technical information and making contacts in the industry. It is a membership that continues to pay dividends to this day.

**WWID:** What do you like most about being an ISA member?

**Hegner:** Apart from the InTech magazine which every member receives, I get a lot of value from attending the ISA's various symposiums, conferences, and spring/fall leaders meetings. They provide great value in terms of technical, business and training opportunities.

**WWID:** Do you have any advice for a young engineer or technician considering getting involved with the water/wastewater sector?

**Hegner:** Join the ISA, get involved, and attend as many ISA meetings as possible, and this includes meetings at the local ISA section level. The new skills, knowledge and contacts you gain will open doors for you.

**WWID:** Thank you very much for taking the time to speak with us for this interview.

**Hegner:** My pleasure!

*(Note: This interview has been edited for length and clarity.)*

## 2011 WWID Scholarship Winners

The ISA Water/Wastewater Division is pleased to announce the winners of the 2011 WWID Student Scholarships. They are as follows:



**Torry Brashear**  
University of Nevada  
Reno, Nevada, USA

Torry is a second year student at the University of Nevada in Reno, Nevada, USA. He sent us the following note:

*"I would really like to thank the ISA WWID for selecting me for this very generous scholarship. This will definitely help in paying for my tuition this semester."*

*I am a junior at the University of Nevada, Reno, studying mechanical engineering. I am an eagle scout and recently participated in a high adventure 60 mile, 6 day canoeing trip in Canada. My hobby is 3D animation."*



**Richard Germade**  
Rensselaer Polytechnic Institute  
Troy, New York State, USA

Richard is currently completing his M.Sc. in Environmental Engineering at Rensselaer Polytechnic Institute. He also has interests in psychology and geology/hydrogeology, and looks forward to taking coursework in these areas as time allows. He is thankful for the support given to him by the WWID scholarship.

The annual WWID student scholarship is one of the key services that the Water/Wastewater Division provides for the automation community. Headed up by our scholarship chairman Michael Fedenyszen, from the Power Group at R.G. Vanderweil Engineers, the goal of the program is to inspire and support promising young scholars. We extend our congratulations to this years winners!

## 2012 WWID Scholarship Information

Information on the 2012 WWID Scholarship program will be released shortly, and will be announced in the fall WWID newsletter.



## New ISA Interchange Blog Launched on the web

In July 2011 the ISA launched its new social media site, *ISA Interchange* on the web at [www.automation.isa.org](http://www.automation.isa.org).

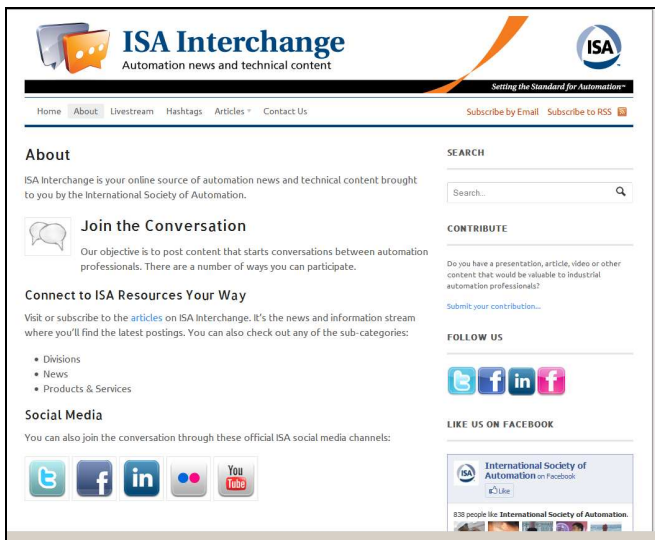
This new educational, news-and-blog site provides automation professionals with an opportunity for finding relevant, high-quality technical knowledge; engaging with each other for information sharing and problem solving; and strengthening professional networks.

“We’ve integrated today’s successful social networking tools with some of the richest resources in the automation field,” said ISA Executive Director and CEO, Pat Gouhin. “*ISA Interchange* provides rich ISA resources for our members, our customers and the automation community.”

Visitors to the website at [www.automation.isa.org](http://www.automation.isa.org) will find that *ISA Interchange* is convenient, searchable, and continually updated with new content to create a rich technical resource. The site hosts articles, news, blogs and streaming video, to which visitors can post comments, start conversations, and share with other professionals in automation communities.

Gouhin continued, “One of our key priorities was to spark discussions about automation topics across technologies. Technicians, engineers, managers, students, all expect instant access to information, and we’re pleased to give them a tool that will enhance their success.”

*ISA Interchange* integrates onsite commenting; plus provides easy links for sharing via email and through popular social media sites such as Twitter, Facebook, YouTube, Flickr®, LinkedIn®, SlideShare, +1, Delicious, and others. The blog site also offers RSS feed subscription and email notification of updates.



[www.automation.isa.org](http://www.automation.isa.org)

## ISA Automation Week – Oct 17-20, 2011 Advance Program Released

Our friends at ISA headquarters are pleased to announce that they have released the Advance Program for ISA Automation Week: Technology and Solutions Event. Special thanks to Greg McMillan and the other members of the program committee for coordinating this year’s technical program.

This annual, international conference will take place 17-20 October 2011 at the Arthur R. Outlaw Convention Center in Mobile, Alabama, USA. The Advance Program provides the technical conference overview, as well as:

- Information on keynote speeches by control systems legends Charlie Cutler and Béla Lipták, and a general session featuring a panel of experts who will speak on the future of automation
- Previews of the eight conference tracks: Advanced Process Control Techniques; Analyzers; Automation and Control System Design; Energy; Human Asset Optimization; Installation, Operations and Maintenance; Safety and Security; and Wireless Technology and Applications
- Information on poster sessions and Technology Solutions Theaters
- A listing of participating suppliers
- A preview of Technician Day
- The ISA Fall Training Institute schedule
- Registration options and more

View and download the ISA Automation Week Advance Program at [www.isaautomationweek.com](http://www.isaautomationweek.com). The Advance Program is also available in the May/June 2011 issue of InTech.

ISA Automation Week is a technical conference that features three full days of technical sessions; poster sessions; a dedicated Technician Day; an expansive Supplier Showcase; Technology Solutions Theaters on the Supplier Showcase floor offering standards briefings, author briefings and supplier presentations; and networking and social events.

ISA Automation Week Partners include ARC Advisory Group, ExperTune, Georg Fischer Piping Systems, Kepware Technologies, Mitsubishi Electric Automation, and Schneider Electric. ISA Strategic Partner, Test and Measurement is Fluke Corporation. GE Energy, Honeywell Process Solutions and OSIsoft, LLC are ISA Corporate Partners. For more information about the ISA Corporate Partnerships Program, visit [www.isa.org/partners/](http://www.isa.org/partners/)

For more information about ISA Automation Week or to register, visit <http://www.isaautomationweek.org> or call +1 919-549-8411.

## Visit the WWID LinkedIn Group

LinkedIn is a social media site that is geared towards professionals and business people. Located at [www.LinkedIn.com](http://www.LinkedIn.com), the site features online profiles, discussion groups and tools for identifying and keeping track of contacts. LinkedIn currently has over 120 million members and is still growing.

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 Industries 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

For those who may not be familiar, LinkedIn is a free social networking web site for professionals:

LinkedIn is an interconnected network of over 120 million experienced professionals from around the world, representing 170 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" 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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## New WWID Members

### Recently joined: January 2011 to July 2011

The Water/Wastewater Industry Division would like to extend a warm welcome to our recently joined members.

#### January 2011

Hamed Abdelbary - Maitland, FL, USA  
 Vicente Uvero Baluyot - Pasig, Philippines  
 Eduardo Barbosa - Araucaria, Brazil  
 David E. Brown - Lockport, NY, USA  
 Dan L. Carnahan, PE - Mayfield Heights, OH, USA  
 Gerald P J Desrochers - Calgary, AB, Canada  
 Ray A. Dietz - Cincinnati, OH, USA  
 John C. Eisele - Lancaster, PA, USA  
 Mike Elfert, CCST - Denver, CO, USA  
 J. Kelly Garrod - Lakewood, CO, USA  
 Henry G. Gervais - Camarillo, CA, USA  
 Henry G. Gervais - Camarillo, CA, USA  
 Paul J. Giorsetto - Oakland, CA, USA  
 Terry Grant - Edmonton, AB, Canada  
 Robert M. Green - Gloucester, MA, USA  
 C. Douglas Hetrick - New Kensington, PA, USA  
 Kenneth J. Hulst, CCST - Woodbridge, VA, USA  
 Ronald Keidel - Richmond, VA  
 Anthony P. Kopanski - San Antonio, TX, USA  
 Paul G. McQuillen - Pittsburgh, PA, USA  
 Timothy J. Miller - Lake Mills, WI, USA  
 Jeffrey Bernard Moreland - Pittsburgh, PA, USA  
 R. G. Morris - Oxnard, CA  
 Todd Musselman - Denver, CO, USA  
 David W. Musson - Hamilton, OH, USA  
 Theodore E. Neuendorf - Canton, IL, USA  
 Dave Ongena - Santa Ana, CA, USA  
 David M. Osborn - Philadelphia, PA, USA  
 Roland P. Piccone - Sarasota, FL  
 Prof. Anandanatarajan R Ramaiah - Puducherry, India  
 Paul P. Reck, P.E. - Canandaigua, NY  
 Don Reynolds - Cleveland, OH, USA  
 Christopher John Rollo - Middleburg, FL, USA  
 Lawrence Oliver Sawicki - Tucson, AZ, USA  
 Rick Scholten - Orange, CA, USA  
 Abhinav Sinha - Tumkur, KARNATAKA, India  
 David E. Smith - Lake Elsinore, CA, USA  
 Laurentiu C. Stan, Sr. - Surrey, BC, Canada  
 Charles M. Stone - Evans, GA, USA  
 Samine D. Tran - New Cumberland, PA, USA  
 Jose L. Vargas Muniz, CCST - Guanica, PR, USA  
 Marius Vucovan - Thornhill, ON, Canada

#### February 2011

Vignesh Babu Arumugam - Coimbatore, TAMILNADU, India  
 Ms. Sowmya Balakrishnan - Coimbatore, TAMILNADU, India  
 Craig W. Brown - West Springfield, MA, USA  
 Martin Brown - Tulsa, OK, USA  
 Ms. Vaishnavi Devaraj - Coimbatore, TAMILNADU, India  
 Michael J. Dougherty - Frankfort, IL  
 Robert James Duszka, Jr. - Manchester, CT, USA  
 Stephen Gilligan - Mississauga, ON, Canada  
 Max L. Hanson, P.E. - Shoreline, WA, USA  
 Andre G. Harris, CCST - Indianapolis, IN, USA  
 Roger C. Kress - Norcross, GA, USA  
 Nabeel A. Mallick - Edmonton, AB, Canada  
 David Ng, CAP - Rego Park, NY, USA  
 Allan Nunez - Grecia, Costa Rica  
 Jerry D. Oselador - West Milford, NJ, USA  
 Mark A. Paisley - Columbia, IL, USA  
 Eric Pizzoferrato - Farmington, CT, USA  
 Gary Quick - Austin, TX, USA  
 Bruce A. Russell, Sr. - Norcross, GA, USA  
 Michael E. Salenieks - Markham, ON, Canada

Mark Schroepfer - Fenton, MO, USA  
 Sivaprakash Sekar - Pondicherry, TAMILNADU, India  
 David Snyder - Woodland Hills, CA, USA  
 Carlos Oliva Teles - Maia, Portugal  
 Karl Friederich Updegraff, P.E. - Camp Hill, PA, USA  
 Frederick H. Vaughan - Hartford, WI, USA  
 Robert C. Whalen - Tulsa, OK, USA  
 Orin Winders - Green River, WY, USA  
 Manoj Yegnaraman - Littleton, CO, USA  
 Ross L. Young, CCST - Sarasota, FL, USA

#### March 2011

Antonio Carlos Batistal - Osasco, SP, Brazil  
 John A. Benson, CCST - Greenville, NC, USA  
 Antonio James Biondo, Sr., CCST - Baltimore, MD, USA  
 Walter L. Brice - Durham, NC, USA  
 Michael Bush - Bakersfield, CA, USA  
 Brian Callahan - Bel Air, MD, USA  
 Jose Nilton Carvalho Carneiro, Jr. - Sao Paulo, SP, Brazil  
 James Lloyd Cosby, II - Gilbert, AZ, USA  
 Christopher W. DiDio - Westminster, MD, USA  
 Jerry Diehl - Hartland, WI, USA  
 Thomas A. Dunn - Vancouver, BC, Canada  
 Curtis R. Eckberg, Jr. - Seattle, WA, USA  
 Ashraf Mohamed Mahmoud Eid - Cairo, Egypt  
 Jim J. Flower - Mississauga, ON, Canada  
 Samant Garg - Falls Church, VA, USA  
 James R. Harpole - Fort Worth, TX, USA  
 Harry Hawney - Jefferson, LA, USA  
 Michael Scott Jones - Ann Arbor, MI, USA  
 Cameron Kamrani - Chapel Hill, NC, USA  
 Thomas Kapushinski - Walnut Creek, CA, USA  
 Maxym Lachance - Montreal, QC, Canada  
 Peter Lacoste, CTech - Burnaby, BC, Canada  
 Jean Lamarre - Montreal, QC, Canada  
 Carroll Lueck - Golden, CO, USA  
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 Declan McCarthy - Co Cork, Ireland  
 Guy McFadden - Fort Worth, TX, USA  
 Jeffrey Allan McMurray - Kitchener, ON, Canada  
 Dr. Smain Medar - Lasalle, QC, Canada  
 John Paul Neumann, CCST - Cincinnati, OH, USA  
 Christopher Allen Roemer, PE, PMP, CAP - Chantilly, VA, USA  
 Glenn L. Sharp - San Leandro, CA, USA  
 Jack Smith - North Aurora, IL, USA  
 Fabio Jose Benedito Soares - Vitoria, ES, Brazil  
 Thomas K. Sontag - Fridley, MN, USA  
 Michael Anthony St. Angelo, III - Jacksonville Beach, FL, USA  
 Brian Daniel Starr, CCST - Hendersonville, TN, USA  
 Joseph A. Strillchuk, CAP - Fort Myers Beach, FL, USA  
 Edward F. Sullivan, CCST - Lawrenceville, GA, USA  
 Lawrence Tofeland - Calgary, AB, Canada  
 Joe C. Tyler - Baton Rouge, LA, USA

#### April 2011

Hassan Ali Ajami - Dearborn, MI, USA  
 Munther Naman Al Sultan - Needham, MA, USA  
 Yokhana T. Alkass - Mount Prospect, IL, USA  
 Ibrahim Amin - Cairo, Egypt  
 Mohamed B. Ashik - Pattukkottai, TAMILNADU, India  
 Michael J. Beckman - Friendswood, TX, USA  
 Robert W. Benne, CCST - Florissant, MO, USA  
 Michael Blaney - Westborough, MA, USA  
 Arthur W. Bradshaw - Bridgeport, CT, USA  
 Lucas J. Bruxvoort, CCST - Goodyear, AZ, USA  
 Joseph Corbisiero - Floral Park, NY, USA  
 Eric James Crawbuck - Trevoze, PA, USA  
 Kevin Edwards - Shafter, CA, USA  
 Omnia El Halawani - Sharjah, United Arab Emirates  
 Michael Firstenberg - Voorhees, NJ, USA  
 Randy D. Geist - Kirkland, WA, USA  
 Ms. Jislaine Rosa Santana Giovanini, Sr. - São Paulo, Brazil  
 Geoff Heise - Edmonton, AB, Canada

Francis Hino - Honolulu, HI, USA  
 Ian L. Hofmann - Fairbanks, AK, USA  
 Walter S. Ingham, P Eng - Edmonton, AB, Canada  
 Prabhakar Y. Keskar - Gainesville, FL, USA  
 Nicholas R. Kochan - Liverpool, NY, USA  
 John V. Koppa - Oceanside, CA, USA  
 Alan R. Libby - Plainfield, IL, USA  
 Ms. Bing Lin - Edmonton, AB, Canada  
 Robert L. Morefield - Bluefield, WV, USA  
 Ms. Mridula Naik - Calgary, AB, Canada  
 James Allen Nauber - Oklahoma City, OK, USA  
 Kevin Patel - Dallas, TX, USA  
 Wayne F. Pearson - Redding, CA, USA  
 Jefferson Maciel Francisco Pinto - Cacapava, SP, Brazil  
 Brian Reynolds - Peoria, AZ, USA  
 Ms. Martina Rusnacik - Edmonton, AB, Canada  
 Gokul Bhakth S B - Trivandrum, KERALA, India  
 Kevin T. Seifert, CCST - Santa Maria, CA, USA  
 Hossam Senior - Etobicoke, ON, Canada  
 Bruce Allen Smith - Chelsea, AL, USA  
 Stanley M. Spence, P.E., CAP - Las Vegas, NV, USA  
 Dr. Michael W. Sweeney - Lutz, FL, USA

### May 2011

Jaime A. Alba - Falls Church, VA, USA  
 Oscar Shinya Asato Gushiken - Santa Cruz De La Sierra, ANDRES  
 JBANEZ, Bolivia  
 Ms. Isabelle Blain - Ville St-Laurent, QC, Canada  
 Stanley Morris Clayton - Hackettstown, NJ, USA  
 Marvin Cruz - West Palm Beach, FL, USA  
 Timothy Culberson - Saint John, NB, Canada  
 Thanigaivel D - Chennai, Tamil Nadu, India  
 Thomas Dudley - Cleveland, OH, USA  
 Dean LC Foote - Mechanicsburg, PA, USA  
 Richard Malcolm Freeman - Glen Ellyn, IL, USA  
 Dr. Melrose Truett Garrett, Jr. - Houston, TX, USA  
 Jack T. Geisenhoff - Saint Paul, MN, USA  
 Ofer Gilan - Yavne, , Israel  
 Ivan M. Gonzalez, PE - Marietta, GA, USA  
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 Ms. A. Pooja Jain - Chennai, TAMILNADU, India  
 Andrew Klein - Houston, TX, USA  
 Patrick Koenig - Cincinnati, OH, USA  
 Tim Kenneth Kott - Sacramento, CA, USA  
 Manoj Kumar - Sharjah, , United Arab Emirates  
 Edward T. Ladd, Jr. - Leander, TX, USA  
 Alan H. C. Lai - Cincinnati, OH, USA  
 Carlos Latorre - San Diego, CA, USA  
 Ms. Alessandra De Andrade Lima - Rio De Janeiro, RJ, Brazil  
 Dennis Bernard Mace, CCST - Capitol Heights, MD, USA  
 Mikes Joseph Maillakakis - Fort Myers, FL, USA  
 Robert C. Manross - Sherrills Ford, NC, USA  
 Wally Metzen - Mayer, MN, USA  
 Gary J. Mierzwa - Pensacola, FL, USA  
 David C. Minunni, CAP - Ringwood, NJ, USA  
 Jonathan Mitchell PE - Smyrna, GA, USA  
 Ryan Moeller, Ryan Moeller, P.E. - O Fallon, MO, USA  
 Jacob Henry Moser, III - Maitland, FL, USA  
 Daniel Oshaben - Rancho Cucamonga, CA, USA  
 Arnold Jasmin Perez - Chula Vista, CA, USA  
 Vaithianathan Ramalingam - Sharjah, , United Arab Emirates  
 Steve Ramnarine - West Palm Beach, FL, USA  
 Gregory N. Richards, CCST - Indian Head, MD, USA  
 Gary L. Richter, CCST - Boise, ID, USA  
 Mark Sears, CCST - Anchorage, AK, USA  
 Mrs. Renee L. Shaffer - Spring Valley, CA, USA  
 David Small - Irvine, CA, USA  
 Ryan Paul Stasiuk - Joffre, AB, Canada  
 Yosuke Suezawa - Kobe, , Japan  
 Dr. Edrick R. Upsher, CCST - Alexandria, VA, USA  
 SHAJU V .J - Doha, , Qatar

### June 2011

Dhumal N. Aturaliye - Austin, TX, USA  
 Ms. Kathy M. Buechler - Kansas City, MO, USA  
 Larry S. Clonch - Milford, OH, USA  
 Ms. Maria Alice Douglass - Thuwal, , Saudi Arabia  
 Phillip Carey Eddwards - Fayetteville, NC, USA  
 Joshua Gelman - Falls Church, VA, USA  
 Jay Henderson - Evanston, IL, USA  
 Joseph R. Irwin - Austin, TX, USA  
 Negar Izadi - Edmonton, AB, Canada  
 Roger Labrecque - Bristol, CT, USA  
 John Lavoie - Middletown, PA, USA  
 Todd O. Loudin - Linthicum Heights, MD, USA  
 Michael Allan Queen - Charlotte, NC, USA  
 Marlon Silva Ramos - Brasília, DF, Brazil  
 Gerald J. Ratasky, P.E. - Raleigh, NC, USA  
 Christopher Scott Roth - University Place, WA, USA  
 Narciso Santiago, CAP - Longwood, FL, USA  
 Paul Schwartz - Los Angeles, CA, USA  
 Larry K. Scott, CCST - Pensacola, FL, USA  
 Stanton Ray Slater - Carrollton, TX, USA  
 David Soper - Gastonia, NC, USA  
 James W. Spitzer - Cambridge, MA, USA  
 Carl E. Wadsworth, CAP - Bountiful, UT, USA  
 Mark A. Waronker - Lansdale, PA  
 Scott Whitmore - Maitland, FL, USA  
 John T. Yadon - Rigby, ID, USA

### July 2011

Nick C. Camarata - Kittitas, WA, USA  
 Luis Ernesto Chacon - Calgary, AB, Canada  
 John Chantrell, CCST - Cortland, NY, USA  
 Wei Luen Chu - Shah Alam, Selangor, Malaysia  
 Peter Chung - Richmond, BC, Canada  
 Dennis G. Flosi - Vacaville, CA, USA  
 Paulo Rogerio Lopes Fonseca - Sao Paulo, SP, Brazil  
 William H. Girard - Newport News, VA, USA  
 Raymond J. Grosch - Pewaukee, WI, USA  
 Joseph Guagno, Sr. - Perkassie, PA, USA  
 James Alan Hall - Portland, OR, USA  
 Christopher M. Hogan - Aiken, SC, USA  
 Waymon Jones - Atlanta, GA, USA  
 Ms. Jessica Knight - Gainesville, FL, USA  
 Edward F. Linzer - Peapack, NJ, USA  
 Paul C. Mamzic - West Point, PA, USA  
 Paul McGuire, P.E. - Cleveland, OH, USA  
 Juan A. Merlos - Belle Glade, FL, USA  
 Michael J. Potter - Chesterfield, MO, USA  
 Anand L. Rajendra - White Plains, NY, USA  
 Shawn B. Rudasill - Lafayette, LA, USA  
 Vaibhav G. Shah - Gaithersburg, MD, USA  
 Craig Truax - Phoenix, AZ, USA  
 Frank Truglia, CCST - Stoney Creek, ON, Canada  
 Thomas D. VanNorman, CCST - Hellertown, PA, USA  
 Mazimiliano Vicente Delgado - El Puig, VALENCIA, Spain  
 Jay Wagner - Dallas, TX, USA  
 David L. Woracek - Yelm, WA, USA  
 Wagner Yajure - Tallahassee, FL, USA

## ISA Mentoring Program

### A little known program that offers big rewards

ISA's Mentor Program enables younger ISA Members and ISA Student Members to access the wisdom and expertise of seasoned ISA Members, while it offers veteran ISA professionals the chance to share their wisdom and make a difference in someone's career. A mentor can give a young professional guidance in his or her career or help a student determine if automation and control is the right path to follow.

ISA's Mentor Program is an online program, so there are no meetings to attend and there is no travel. ISA Members from all over the world can participate, and the relationship can develop and progress at the convenience of the mentor and protégé.

### For Seasoned ISA Members Wanting to Mentor:

ISA Members are encouraged to participate in the program by registering as mentors. Potential mentors can find more information at [www.isa.org/mentor/](http://www.isa.org/mentor/)

Currently we don't have any mentor volunteers listed in the Water/Wastewater category. As the seasoned industry veterans that we are, we need to do better. When we started our careers, all of us had people to look up to. In some companies, finding that mentor can be difficult for new hires. The ISA is a great place for them to find the guidance they are looking for. Consider signing up today. We can help make a difference.

### For Student & New ISA Members Looking for a Mentor:

Of you are a younger ISA member, a student, or just starting your automation career, you are encouraged to take advantage of this program. The mentorship program is a free benefit of being an ISA member. To get started everything you need is on the ISA website at [www.isa.org](http://www.isa.org)

For those of you who have not visited the "My ISA" section of the ISA website, here are a few pointers on how to access the mentoring section of the ISA website:

First point your web browser at <http://www.isa.org> to load the ISA website. Click on the "Login" link near the top left corner and login with your ISA login/password. If you do not have an ISA login/password yet, click on the Login link and follow the "New to ISA" link. You can then set up an ISA web account using your membership card and some information like your mailing address.

Once you have logged in, click on the "Students" link on in the menu under "General Information". The ISA Student membership "home page" for your ISA membership will now come up; click on the "Mentoring Program" link. You can

then follow the links to find out more about the mentoring program and the many benefits that it offers.

Don't be shy! The ISA website has a listing of seasoned ISA members who have already volunteered to be mentors. So there is no uncomfortable step of having to ask someone you don't know if they would be interested in acting as a mentor – these people want to mentor you. All you need to do is email them using the contact information they have posted on the "mentoring database" contained within the ISA website. Good luck!

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## Call for Newsletter Articles

The WWID newsletter is published four times a year (spring, summer, fall, winter) and reaches the WWID's over 1,600 members. Each issue is approximately 20-30 pages long. The newsletter is distributed electronically in color PDF format.

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

Articles submissions should 500-1500 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 is to be avoided. While not specifically required, we encourage authors to submit several photos and/or figures to go along with their article submission.

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 ok, but the focus of the article should be technical content and not just sales literature. We ask that authors keep this in mind when submitting articles/content. If you are unsure of whether your article idea would be acceptable, please contact our newsletter editor for more information – we are here to help. With this said, we have had many excellent vendor-written articles in the past, and we look forward to many more.

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 well-known personalities in the water/wastewater sector.
- Case Studies about plant upgrades and/or the application of a 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 aspect 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 suitable for publication in the newsletter.

Article submissions can be sent to the attention the WWID newsletter editor Graham Nasby at [nasby@eramosa.on.ca](mailto:nasby@eramosa.on.ca)

## WWID Newsletter Advertising

The WWID newsletter is an excellent way to announce new products and services to the water/wastewater automation community. With a circulation of over 1,600 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:

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

Advertising in the newsletter is offered in quarter page and eighth page formats. The eighth page size is approximately the size of a North American business card. 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 advertisements are accepted.

The current advertising rates are as follows:

Per Issue:

- Quarter page ad (3.5" W x 4.5" H): \$100
- Eighth page, business card ad (3.5" W x 2.0" H): \$50

Per year (4 issues):

- Quarter page ad (3.5" W x 4.5" H): \$325
- Eighth page, business card ad (3.5" W x 2.0" H): \$175

Other sizes of advertisements are available, but are priced on an individual basis. Please contact our newsletter editor 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, TIF, PNG, JPG or GIF formats. EPS and PNG formats are preferred. Images should be submitted with 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 [nasby@eramosa.on.ca](mailto:nasby@eramosa.on.ca)



## WWID Board Member Contacts

### Director

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Bridge-Soft LLC & Domesticating IT  
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### Director-Elect

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Tel: (519) 763-7774  
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### Membership Chair

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An announcement regarding the members of the symposium organizing committee will be made in the Fall 2011 issue of the WWID newsletter. An announcement regarding the date/location and call for papers will also be in the Fall 2011 newsletter as well.

## 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 an annual symposium that features presentations by industry practitioners and published proceedings.

## 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](http://www.isa.org)

# **Establishing a Successful Water/Wastewater Commissioning Program**

Richard Birdsell, P.E., Orange County Sanitation District  
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## **THE CHALLENGE**

The goals of any water/wastewater utility engineering department are to deliver projects to their stakeholders that are on schedule, on budget, do the function intended and that can be operated and maintained. Commissioning is a critical component to accomplishing these goals.

As in any construction industry, water/wastewater has been challenged with executing one of the most critical stages of a construction project, commissioning, at the end of the project when the risk of budgets being exhausted is very high and there is significant pressure to complete the contractor's work. Another challenge is that the facility is operating during commissioning and when the contractor is done with all the specified testing, the owner starts operating and maintaining the next day. This requires careful planning and control throughout the design, construction and commissioning phases.

For this paper commissioning will be defined as testing/start-up a project as well as the work related to preparing the project to be turned over to the operators and maintainers including:

- Equipment Testing
- Piping, Tank and Structural Basin Testing
- Utility System Testing
- Control System Testing
- Process Testing
- Vendor Equipment Manuals
- Vendor Equipment Training
- Operations Manual (Designer Prepared)
- Operations Training
- As-Build Drawings



## **INTRODUCTION**

The Orange County Sanitation District (OCSD) collects, conveys, and treats approximately 230 million gallons of wastewater generated daily in its 471 square mile service area. In 2002, to improve effluent quality, increase treatment capacity and rehabilitate aging facilities, OCSD embarked on a Capital Improvement Program (CIP) valued at approximately \$2.7 billion including:

- New 300 MGD Headworks Facility
- New 30 MGD Trickling Filter Secondary Treatment Facility
- New 60 MGD Activated Sludge Secondary Treatment Facility
- New 60 MGD Trickling Filter/Solids Contact Secondary Treatment Facility
- New 60 MGD Primary Treatment Expansion
- New Co-Thickening and Dewatering Centrifuge Facility
- New Primary Sludge Distribution Pump Station
- Rehabilitation of Primary Clarifiers, Secondary Treatment Facility, Digesters and Central Generation Facility
- Replacement of six Lift Stations

This CIP program created a challenge for the Engineering and Construction Department to start up and test many projects with parallel schedules and make them ready to be turned over to the Operations and Maintenance Department (O&M).

## **PLANNING FOR COMMISSIONING**

With this many complicated projects in different phases of design and construction it was important to develop a detailed plan to commission that would include a cultural change with regards to commissioning in most departments of the organization.

The Project Management Office and Engineering Design group were tasked with developing a plan to attack commissioning on a program basis. The following tasks would need to be accomplished in order to establish the commissioning program:

- Develop a separate commissioning phase for each project with a budget and schedule.
- Develop a commissioning team for the program and commissioning teams for each project.
- Establish tasks for design engineers to include on the plans and specification to facilitate commissioning.
- Develop a specification to define the contractor's responsibility in commissioning.
- Develop specification to define the contractor's responsibility for vendor training and vendor equipment manuals.

- Establish requirements for detailed testing procedures with pass/fail criteria.
- Provide procedures, training and assistance to construction managers and inspectors to enforce contract requirements during construction.
- Develop post construction process acceptance testing requirements.
- Develop lessons learned process.

## ESTABLISHING A PROJECT COMMISSIONING PHASE

As discussed above, since commissioning usually takes place at the very end of projects that last for years, the project budget including the design consultant budget and the contractor budget are not in good shape. To ensure that Commissioning would be well budgeted and scheduled, a separate project phase was created at OCSD, see Figure 1.

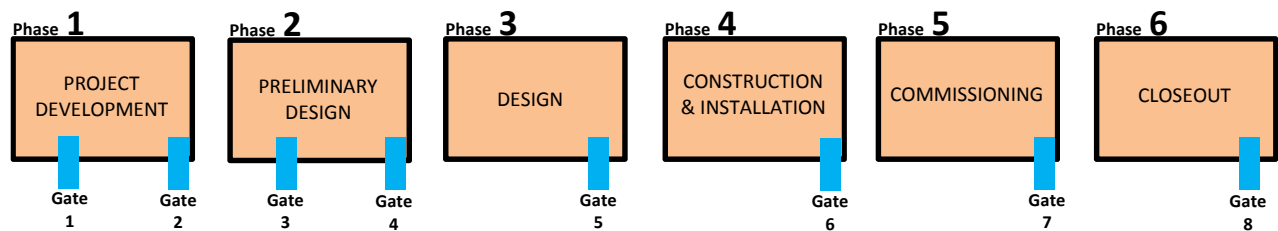


Figure 1: OCSD Project Phases and Gate Meetings

With each phase of a project, OCSD has instituted a Gate Meeting system where the project team presents the status of the project, the management team is informed and has input to permit the project to progress to the next phase. This is true with each commissioning phase of each project. At Gate 6, the project team will present the project commission plan and the contractor's commissioning plan for approval. This formalized approach has put an emphasis on commissioning and the management team is informed and involved in the decision making process.

Commissioning budgets are set-up to ensure internal staff does not charge to them unless they are working on commissioning activities. Similarly consultants and contractors cannot invoice unless they are working on commissioning activities.

A work breakdown structure (WBS) defines and organizes the Engineering CIP into manageable pieces. Figure 2 shows the details of the OCSD Program WBS and indicates a completely separate commission phase with defined work packages.

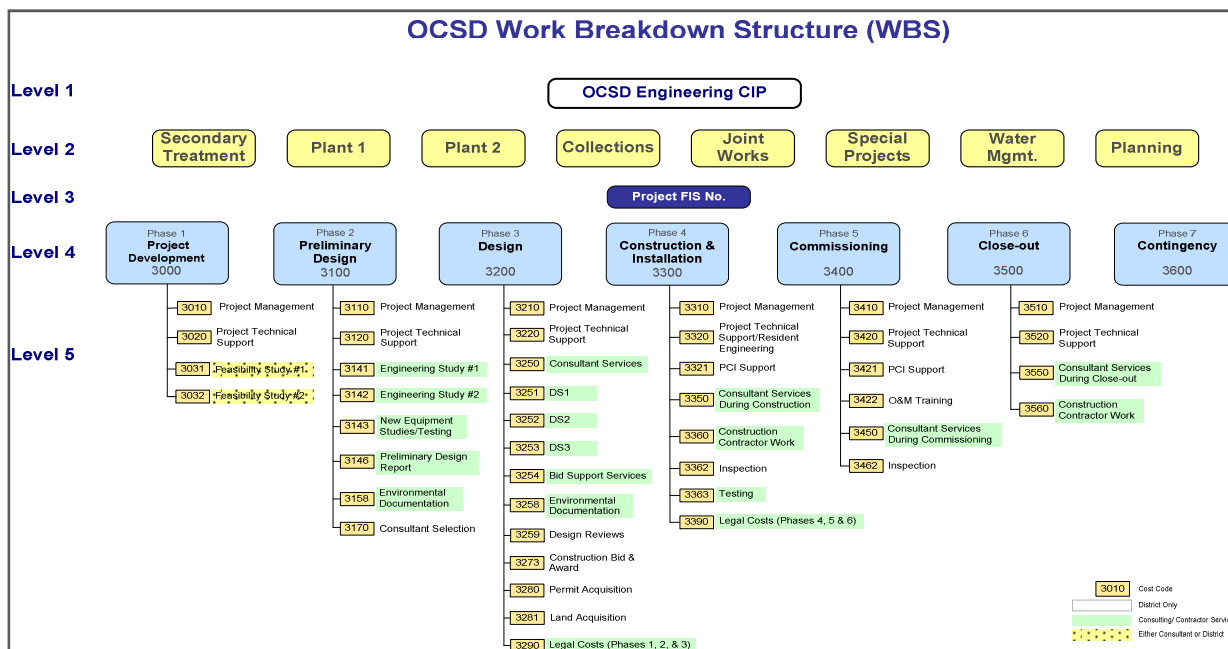


Figure 2: OCSD Program WBS

Allocating time for commissioning is also very important to develop a realistic project schedule and having the contractor prepare a realistic baseline schedule. Continually using the data from recently completed projects, OCSD has been able to develop realistic project duration for commission phases.

The bigger challenge has been getting our contractors to be realistic in developing their baseline schedules. OCSD has experienced some success in this by a combination of good definition of procedures expected for each phase of commissioning or by simply dictating durations of some or all of the commissioning phases. Either way, it is critical for the contractor to plan for the time and man-hours to successfully complete commissioning. If the reader receives nothing else from this paper they would have a great chance of properly commissioning a facility.

## ESTABLISH COMMISSIONING TEAMS

All successful programs have an effective leader. When OCSD was looking to establish a leader for the commissioning program it focused on two attributes, understanding equipment level testing and understanding system level testing. The qualifications of the successful candidate turned out to be an instrumentation engineer with a strong field experience and strong mechanical background. The commissioning program lead responsibilities include:



- Author Commission Procedures
- Author Commission Specification
- Train Construction Managers and Inspectors on Commission
- Track various project's commissioning efforts
- Serve as Project Commissioning Coordinator

Each project establishes a commission team during design and the team includes the following:

- OCSD Project Manager
- OCSD Project Engineer
- OCSD Resident Engineer/Construction Manager
- OCSD Commissioning Coordinator
- Design Consultant Representative
- OCSD Operations Representative
- OCSD Maintenance Representative
- Contractor's Commissioning Coordinator (Construction Phase only)

The team will meet to discuss requirements for commissioning during design and commissioning status during construction. The OCSD Commission Coordinator is responsible for the execution of the commissioning plan.

## **COMMISSIONING IN DESIGN, CONSTRUCTION AND COMMISSIONING**

Commissioning is carried out during the three phases of the project. These are Design, Construction and Commissioning. Based on the operational process and the type of equipment the level of testing is established. A project installing a sump and sump pump will be quite different from a new Headworks project. But both projects should include a Commissioning specification. The Commissioning Specification will define the testing requirements, documentation requirements, and examples of procedures and test forms with the roles and responsibilities of the team players. This portion of the paper will expand on the procedures and test forms.

## **COMMISSIONING IN DESIGN**

The commissioning specification should clearly define stages of commissioning, responsibilities of the Contractor, and Owner, qualifications of the commissioning coordinator and testing hours. The responsibilities which need to be addressed are defining which tests need to be witnessed by the owner, plant operations support, and supply of labor, material, tools, test water, manufacturers' representative, and testing equipment. Because the commissioning documentation such as procedures, and test reports

start early in the construction phase it is recommended to have a commissioning coordinator. Another reason to have a commissioning coordinator is because most contractors are good at building but are not good at starting equipment.

Establishing a project team including the design engineering, plant operations, maintenance and engineering will help open discussions on operations and maintenance requirements that can be included in the beginning of the design phase. This will help eliminate design rework and identify additional testing tie-in points, additional valve for testing or process isolation, identifying temporary electrical requirements, sources for temporary utilities, additional taps for pressure instruments used in testing, work restrictions and a plan to identifying locations for temporary flow meters used in testing.

The testing requirements must be defined during design. The requirements for vibration and noise differ between types of equipment. The contract should include standalone specification which defines these testing/pass fail requirements. The individual specifications will be referenced back to the standalone specification. For large variable speed pumps defining the test flow rates and speed in the specifications eliminates questions during flow testing and minimizes testing time.

A commissioning plan is a useful tool. It can be divided into four sections, testing, training, schedule and planning and documentation turn over. The test plan should detail the sequential testing of each piece of equipment and system. The written plan should include step by step descriptions of the procedure for systematic testing of all equipment and systems installed under the contract. The commissioning plan should include equipment description/tag number, the purpose of the test; step by step requirements, pass/fail criteria, and identify test equipment required. The training plan identifies the craft to be trained, lesson plans for each class, and class evaluations for each class. The commissioning schedule must be coordinated with the construction schedule; it should include start dates and duration. Planning and documentation includes scheduling the participation of the Manufacturers' As Built documentation, and breaking down the project into systems based on the equipment control, P&IDs and single line diagrams are useful tools for defining systems.

There are many benefits to writing the commissioning plan during design: testing and verifying wiring, local and remote logic checks, and verifying panel, MCC and HMI displays. Some of these benefits include a final review of all logic and control strategy write up, verifying the P&IDs are correct, a final check of the I/O all instrumentation is supplied and the equipment is tested in all of the operating modes. The test plan can be reviewed; final buy in by the design team prevents wish lists at the end of construction.

## **COMMISSIONING SPECIFICATION**

The Commissioning specification should identify the requirements for the Contractors Commissioning coordinator. The commission coordinator should have experience in operations and commissioning of facilities, equipment, electrical equipment and plant controls of similar type, size, and capacity. The Commissioning coordinator also needs the ability to write test plans, and prepare and update the

schedule. Another reason to have a commissioning coordinator is because most contractors are good at building but are not good at testing or starting up equipment.

Another component of the Commissioning plan is defining the manpower limitations. Operations, engineering and inspection support is usually limited to 40 hours a week. Establishing start and end time work hours will help the contractor plan his work and minimize overtime.

The commissioning plan should define the requirements for chemical, utilities, temporary power, and work restrictions. It should also define if testing of equipment will be with clean water before process is introduced is required.

## **TEST FORMS**

Equipment verification testing forms included in the contract specification requirements allows the owner to verify the equipment supplied meets the contract. Piping pressure test forms, wire and cable resistance forms, calibration forms, are other types of useful test forms. Include in these forms a placeholder for the signatures of contractor and inspector along with the test date.

## **FACTORY DEMONSTRATION TEST FORMS**

Factory test forms based on the project specifications are generated during design. As part of the submittal procedure the standard form is modified for the specific equipment. The Manufacturer's is revised and insures the equipment testing will match the form. When the Manufacturer is finished with assembly they complete the form by signing the unwitnessed column on the form. The contractor submits the signed witness form before the owner witness test. This allows the Manufacturer to check the equipment before the witness test. Because the Manufacturer has performed the test he is familiar with the steps, has the test equipment ready thus saving time during the witness test. The witness test can be waived if the third party testing is implemented and the third party has a clear understanding of the tests required. If during testing problems arise they can be corrected at the factory rather than in the field. See the attachment A.

## **COMMUNICATION TEST FORM**

A communications test form for verifying communications from the processor to the I/O is helpful. Although it is not conducted until just before commissioning it allows the contractor to verify communications before the final program is loaded. It also helps to verify the As Built drawings are



correct. If a redundant communications system is used this allow testing to continue upon a communications failure. See the attachment B.

## **ELECTRICAL AND INSTRUMENTATION INSPECTION FORMS**

Inspection forms for Electrical and Instrumentation equipment give both the contractor and the owner's inspection staff the pass/fail requirements and identify the information required for records. This will avoid confusion during testing. The contractor can also use his own forms with the required information included. See the attachment C.

## **CERTIFICATE OF PROPER INSTALLATION (COPI)**

This Certificate of Proper Installation is a form submitted before installation of equipment by the Contractor. This form can be the manufacturers installation form with any project specific requirements included. Items typically included on the form is material verification, installation inspection requirements, such as belts tight, equipment alignment, installation per O&M manual, and are lubrication points accessible. This form is signed by the Manufacturer and the Contractor to verify the equipment meets the Contract and Manufacturers requirements. See the attachment D.

## **CERTIFICATE OF PROPER OPERATION (COPO)**

The certificate of proper Operation is similar to the Certificate of Proper Installation. It is signed by the Contractor and Manufacturer it verify proper operation. See the attachment E.

## **OPERATIONAL READINESS TEST (ORT) LOOP STATUS RECORDS**

This document is used to verify proper installation has been completed before testing of the equipment. The Status Record form has two columns, the first is by the contractor, and the second is for the owner witnessed sign off. This allows the contractor to verify the installation meets the contract requirements. Items that are checked are the equipment installation, tagging is installed and correct, wire tests have been completed and the I/O has been verified. See the attachment F.

## **OPERATIONAL READINESS TEST PROCEDURES (ORT)**

The Operational Readiness Test procedure is a step by step procedure for testing a piece of equipment or instrument. The form has placeholders to indicate the equipment to be tested by description, and Equipment Tag number. The Loop number and panel number are also referenced.

The procedure starts with confirming utilities are energized, operation in local and remote, verifies any control logic and verifies status conditions. The test form has two columns, the first is by the contractor, and the second is the owner witnessed sign off. The reason the two step process is needed is to insure the contractor is familiar with the test and verifies the equipment is operational and trouble shooting of any problems has already been completed. See the attachment G.

## **FUNCTIONAL TEST FORMS (FAT)**

The FAT is a functional test of the control logic both local and remote. This can be accomplished without process, clean water or under normal operating conditions. Supply and exhaust fans and HVAC equipment are two examples of systems that do not require process. Where it is practical clean water tests are preferred. This allows testing without worrying about leaks, cleaning equipment which may need to be disassembled for process trouble shooting. The Functional Test is started after all ORTs have been completed. After the ORT is completed it is not required to open any motor controls, panel, inspect wiring, or calibration. See the attachment H.

## **RELIABILITY ACCEPTANCE TEST (RAT)**

The RAT is started after all the functional tests are completed. Process is introduced and the equipment is operated under normal conditions. The process and equipment is monitored to verify the equipment starts properly and operates without equipment failure or alarms. Because of lead lag control strategies and/or standby equipment and to insure all equipment is operated, a plan must be in place that indicates what equipment is to be tested day by day. The second part of the RAT plan is to have an activity plan to verify operations throughout the day and by shift. See the attachment I.

The commissioning Specification will instruct the contractor to modify the ORT and FAT template procedures supplied to include all equipment. It will instruct the contractor which documents are required at each phase of testing; define the requirements to proceed to the next phase of testing.

## COMMISSIONING DURING CONSTRUCTION

Commissioning for a project is very sequential, however, not all equipment is available at the same time and a project is divided into phases. During commissioning the control logic could require modifications, installation mistakes arise, and equipment fails. The schedule needs to allow for these normal setbacks. At the beginning of a project monthly meetings to discuss issues are normal, when construction is about 50% complete, the commissioning meetings become weekly. When the project starts the owner witness phase the weekly meeting continue along with a brief meeting at the beginning of each day. This allows for issues to be discussed and resolved, manpower planning, and schedule updates. The commissioning plan needs to be incorporated in the overall schedule to insure the proper amount of time is allowed for commissioning.

The experience level of the contractors commissioning coordinator is important to the success of the project. The commissioning coordinator needs to have experience in operating and commissioning facilities of similar size. It is helpful for the coordinator to have been a project manager with a good understanding of waste water processes, equipment, plant controls and electrical systems. Being a Grade V operator is a plus. It is beneficial to review the commissioning coordinators resume.

The owner needs to review the commissioning procedures submitted by the contractor with all the stake holders. Correcting and adding comments to the procedures will pay off during the actual tests. It is important to include the pass or fail requirements in the procedure.

Testing equipment at the factory is a benefit in a number of ways. The manufacturer knows what tests are required based on the FDT he submitted. If problems are observed during the tests they can be logged and corrected at the factory. This prevents rework in the field when time is critical. Factory tests should be included for mechanical equipment, pump flow tests for large pumps, control panels, control system panels, electrical switchgear and motor controls.

Defined deliverables need to be defined to allow the contractor to proceed to the next phase of testing. Before the contractor is allowed to proceed to the next phase it should be agreed upon by operations and maintenance.

Commissioning addressed during design, clear specifications, and agreed upon forms will make the end of the project progress smoother.