Setting the Standard for Automation

ISA

Wilmington Delaware Section

The Sensor

April 2006

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Upcoming Events

Apr	**25**	**Shrimp Boil at ACE**
May	**23**	**Section meeting at ACE**
June	**27**	**Picnic at Our Lady of Grace**

April 25, 2006
Section meeting
WISA Shrimp Boil
At the ACE office in Newark
5:30 PM

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WISA Shrimp Boil Sponsors

Friends of the Shrimp

Joe Gunn—North East Technical Sales, Inc.
www.netechsales.com

Jeff Carrier—WIKA Instrument Corporation
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Bill Kienzle—Honeywell International
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Paul D'Andrea—Valtek
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Jim Cannuli - Mechanical Design Solutions, Inc.
www.mds13.com

Boil Buddies

Joe Baker—Endress + Hauser
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Jill Kitko—Eastern Controls, Inc.
www.easterncontrols.com

Lori Levangie—Scott Instruments
www.scotthealthsafety.com

Nick Sands
Www.isa.org

President's Message

By Steve Prettyman

We have made it through the Winter and we have sprung into Spring. This month, in particular, is a great time to investigate how you can contribute to the ISA Wilmington Section. This month is the Annual Shrimp Boil at ACE headquarters on Tuesday, April 25, 2006 and it is a great opportunity to catch up with old friends and make some new ones. This event is always well attended and is certain to be fun for everyone, so bring potential members or current members that have an interest but have not attended a Shrimp Boil in the past.

This year, as is now tradition, Joe Gunn graciously oversees the cooking activity and his support is tremendously appreciated by the section. I would enjoy seeing more of the Wilmington Section members at this event and I encourage everyone to volunteer for some opportunity within the section.

The March Wilmington and South Jersey Joint Section meeting was a tour of the Uniqema facility that was very well attended and received good feedback from those that attended. This is one example of the kind of interest and value that the ISA brings to its members. A volunteer opportunity could be something as simple as hosting one plant tour per year. It is certainly a valuable experience for everyone involved.

As the 2005 -2006 Presidential year draws to a close, I want to thank all of the hard working volunteers for their time and energy because they are what makes to ISA and the Wilmington Section what it is today. Looking ahead, there is a real need to recruit new leadership candidates. Many of the more senior members are reducing their involvement and the volunteer gap continues to widen at the less senior end of the spectrum. Much of the work of the section is done by very few of the members and it is time to bring in some fresh perspectives. I encourage everyone to take a moment to determine how you can contribute to you section. The ISA Wilmington Section needs your support and in return provides a great deal of value including training, leadership opportunities, and professional networking. Volunteer for an opportunity with the Wilmington ISA Section, you'll be glad you did.

Wireless Instrumentation

By Steve Prettyman

Wireless technology is primarily focused upon asset utilization. This is evidenced by the double digit increases demonstrated in the number of wireless applications installed throughout the world. These installations are becoming more prevalent because of the economic benefits provided by wireless technology.

Wireless technology in the industrial environment operates upon a license free bandwidth allocation at 900 MHz. The application must be reviewed to determine if low frequency or high frequency is required. The range and power of the wireless devices is limited by FCC to 1 watt. This limitation is a significant consideration when determining path loss due to the environment. Sensitivity of the devices is also a concern due to the rate of data transmission. The length and design, omni-directional versus Yagi, of the antenna plays a significant role in determining the path loss and allowable distances between wireless devices.

To establish a reliable link, a formula is required to calculate the margin the devices can operate within. There is exponential loss related to the receive gain; therefore, it is important to understand the calculated range versus the tested range of the wireless device. Materials can absorb or reflect the wireless transmission and will affect the calculated range of the wireless device. It is important to consider signal strength and data link rate, however, a spectrum analyzer should be used to model the wireless connection. Other considerations include multi-path fading, interference, spread spectrum devices, and authorization.

There are several reliable wireless sensor networks including 802.11, Bluetooth, Zigbee, and Industrial Wireless. The industrial variety can support RS485 output to up to 50 field units per channel. These devices are proven to be reliable in harsh environments with nearly 10,000 units installed and the number triples every year. These devices are commonly used for data monitoring rather than for process control primarily due to security concerns. The benefits of the wireless devices include installation at 1/10 of the cost of conduit and wire per field instrument point and there is portable diagnostic equipment available for setup and testing.

Free Standards

Members have access to a large selection of standards in several technical areas. Accredited by the American National Standards Institute (ANSI), ISA has more than 150 standards, recommended practices, and technical reports. The knowledge base has shaped the automation field for decades.

Free Web Seminars

ISA web seminars provide cost-efficient and fast training. Members now have free access to over 40 online pre-recorded web seminars. Each seminar is 90 minutes long. They covers topics like safety instrumented systems, Ethernet, control systems security, and more.

Free Technical Papers

Over 2,500 technical papers from past ISA conferences and symposia are available at no cost to ISA Members. New papers are added every year. A search system allows retrieval of the papers by keyword, event, date, or author.

Other Member Benefits

ISA Members get free admission to the exhibition portion of ISA EXPO. Discounted rates for conference and training registrations also are provided. ISA EXPO features a dynamic technical conference, an unparalleled training program, and an advanced exhibition. The annual event helps professionals stay ahead in today's marketplace.

2006 Ralph L Moore Scholarship

By George C. Bentinck

Each year the Wilmington section ISA extends a $1,000 scholarship to a high school senior who is planning to attend a 4-year college, University or a technical training school. An ISA member of our section must sponsor the candidate and applicants pursuing a technical or science degree will be given higher preference.

The scholarship committee will select the successful candidate. The application deadline is May 15 and the check written to the college of the candidate's choosing will be presented at the ISA Annual Picnic in June. The details of the selection criteria and the application may be found on the Wilmington Section ISA website www.isa.org/community/wilmi after March 15, 2005.

Standards & Practices: SP67 Nuclear Power Plant Standards (Part 2)

By Nick Sands

The SP67 committee is the focal point for the development of standards and practice for instrumentation and controls in the nuclear power generating industry. Bill Sotos is the chairman and Timothy Hurst is the vice chair. This summary continues from last month.

ANSI/ISA TR67.04.08-Setpoints for Sequenced Actions supplements the information provided in ANSI/ISA-67.04.01-2000 and ISA-RP67.04.02-2000 for the performance of instrument uncertainty calculations and instrument setpoint determinations.

ISA-TR67.04.09-2005 Graded Approaches to Setpoint Determination provides guidance on a graded approach for calculating and documenting channel and indication uncertainties as well as for documenting uncertainty-adjusted interlock values, setpoints, test acceptance criteria, and action points for permanently installed nuclear plant instrumentation.

ANSI/ISA-67.06.01-2002 Performance Monitoring for Nuclear Safety-Related Instrument Channels in Nuclear Power Plants provides the nuclear power industry methods for assuring that nuclear safety-related instrument channels satisfy acceptable calibration, response time, and other factors affecting the performance of the instrument channel.

ANSI/ISA-67.14.01-2000 Qualifications and Certification of Instrumentation and Control Technicians in Nuclear Facilities provides the basis for certifying the technicians who work on equipment that is important to safety, where formally accredited programs, as described in 10 CFR 50.120, are not maintained.

ISA-SP67.16, Safety-Related, Digital-Based System Upgrades at Nuclear Power Plants is committee to address control system replacement upgrades to digital-based equipment at nuclear power plants.

The Once and Future State of Automation

Pinto's Points: How to Win in the Automation Business
by Jim Pinto
BBB (Borrow)
Reviewed by Nick Sands

Once again Jim Pinto shares his pointers on the automation industry, technology, and life. *Pinto's Points* is a compilation of his columns for ISA InTech magazine's e-newsletter. Pinto himself has many years of experience, as founder and CEO of Action Instruments and many other positions. His view of the automation industry spans both space and time, wandering so much as to defy summary.

The points are divided into six sections, starting at the top with management and leadership. Pinto passes on his reflections, including advice from his own heroes and lessons on leading engineers from his own experience. The next section continues with staying competitive in marketing and sales, despite the changing structure of business, organizations, and communications.

The future is always close for Pinto. He explores wireless, nanotechnology, robots, micro-electromechanical system, and self-organizing systems. In the section on technology trends, Pinto points the direction technology will take us the near team, much of it focused on software that will change our lives. Taking a longer view of technology's impact, Pinto takes us to his future world. There are challenges of energy, autonomous entities, and fashion.

In the final section Pinto shows his heart and his humor, and once again proves himself the poet laureate of instrumentation and automation. As with the rest of the points, Pinto shares a perspective that enlightens and lightens. He has an interesting perspective on the industry, technology and the future. This is a good book to read and borrow from a friend (BBB). It is available from ISA for $28.

Welcome to New WISA Members!

Mr. Delfus Harris, Jr.
of
Philadelphia Gas Works

Friends of the Shrimp

Joe Gunn—North East Technical Sales, Inc.
215-513-1000 410-404-8588 Direct
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