



Process Control & Safety Symposium & Exhibition

7–10 November 2016
Houston Marriott Westchase
Houston, Texas USA

Safe, secure process control
doesn't just happen.
**It requires the expertise to
make it happen.**

**Advance
Program**

Register Now!

www.isa.org/pcs2016

Sponsored by the ISA Technical Industry Divisions of:

- Process Measurement and Control
- Safety and Cybersecurity
- Chemical and Petroleum Industries
- Education
- Communications
- Pulp and Paper Industry
- Management



Setting the Standard for Automation™

ISA is extremely excited to once again bring to Houston the Process Control & Safety Symposium and Exhibition, a content-rich, power-packed conference and exhibition designed to help process measurement and control professionals in chemical, petrochemical, energy processing, and other process industry sectors operate more safely and securely.

This far-reaching event—drawing on the global expertise of seven ISA technical divisions—offers an outstanding combination of world-class training, expert-led presentations, keynote addresses, paper sessions, tutorials, interactive panel discussions, vendor and solution demonstrations, and networking activities.

Register Now!
www.isa.org/PCS2016

Expand your knowledge and capabilities in all areas of process automation

- ✓ **Benefit** from informative **tutorials** and incisive, thought-provoking **paper sessions** on safety, security, process measurement and control, and education
- ✓ **Gain** the opportunity to attend one of three essential **ISA security and safety technical training short courses** (and earn valuable CEUs):
 - Introduction to Industrial Automation Security and the ISA/IEC 62443 Standards (IC32C)
 - An Introduction to Safety Instrumented Systems (EC50C)
 - Electrical Controls for the Control System Technician (TI23C)
- ✓ **Learn** about the latest **developments and emerging trends** in process control and industrial cybersecurity that are determining future operational needs, expectations, and requirements
- ✓ **Discover** the **latest technologies and applications** across all core solution areas at the event's vendor exhibition
- ✓ **Network** with the world's leading experts in critical areas of instrumentation, communications, control systems, and safety and security. Along with other engineers, technicians, and plant managers from oil and gas, refining, chemical, petrochemical, and other process industries
- ✓ **Receive** additional technical perspectives from ISA's **subject-matter experts** from its various technical industry divisions and local section members

Take a minute to review the outstanding program we've put together, and make your plans early to attend. To register and to gain all the details on the symposium, visit www.isa.org/pcs2016, email info@isa.org, or call +1 919-549-8411.

We look forward to seeing you in Houston!

—The PCS Planning Team



Thank you Champions!

ISA appreciates the generous support of its event Champions and their ongoing commitment to and leadership in process control and safety.

Platinum Keynote



Platinum Reception



Platinum Registration



Platinum Luncheon



Platinum Happy Hour



Gold Champions



Silver Champion



Pointfar Automation LLC

Discover an exhibit that features the latest technologies and applications across all core solution areas

Current Exhibitors

aeSolutions	MAVERICK Technologies
Autosol	MetSo
BakerRisk	MicroPak Detection
Beamex	Msi
Elma Electronic	Pointfar Automation LLC
Enmet	Prozess Technologies/Hellma Analytics
EPLAN Software & Service	Process Solutions Corp.
ESPSafety Inc.	RKL eSolutions
exida	Rockwell Automation
HIMA	Schweitzer Engineering Labs
Honeywell	SIS-TECH
Indegy	Ultra Electronics
Kenexis Consulting Corporation	United Electronic Controls
KIN-TEK Analytical	



PCS 2016 ISA Training Offerings—Monday, 7 November

Electrical Controls for the Control System Technician (TI23C)

This course will focus on electrical control devices that are frequently overlooked in a formal training programs. It will speed up the learning process involving electrical devices and result in a higher level of job performance. It will help improve knowledge-based skills, improve work flow efficiencies and minimize errors that result in unsafe circumstances and possible personal injury and property losses.

Instructor: Thomas Stokes



Thomas L. Stokes has 25 years of industrial control systems experience in production, maintenance and supervision. He also has extensive teaching experience acquired at

San Jacinto College, in the Instrumentation Technology Department, where he continues to teach as an adjunct faculty member. He has also taught short courses in various instrumentation subjects for Occidental, Eisai, Valero, Shell Oil, DuPont and the Texas High School Technical Preparation Program. He is a member of the Instrumentation Technology Advisory Committee, an ISA Senior Member, and a member of the Texas Community College Teachers Association.

Introduction to Industrial Automation Security and the ISA/IEC 62443 Standards (IC32C)

Understanding how to secure factory automation, process control, and Supervisory Control and Data Acquisition (SCADA) networks is critical if you want to protect them from viruses, hackers, spies, and saboteurs. This seminar teaches you the basics of the ISA/IEC 62443 standards and how these can be applied in the typical factory or plant. In this seminar, you will be introduced to the terminology, concepts, and models, as well as the element of creating a cybersecurity management system will be explained along with how these should be applied to industrial automation and control systems.

Instructor: John Cusimano



John Cusimano is an industrial control system cybersecurity and functional safety expert with more than 20 years of experience. He has performed or supervised numerous control

system cybersecurity vulnerability and cyber risk assessments in the oil & gas, pipeline, chemical, water/wastewater, pharmaceutical and power industries per NIST, ISA/IEC 62443 and NERC CIP standards. He has also overseen and participated in the security testing and certification of several control and safety systems per the ISASecure and Achilles security certification programs. A leader in the development of ICS cybersecurity standards and best practices, John is Chairman of ISA 99 WG4 TG2 Zones & Conduits committee, and co-chair of ISA 99 WG4 TG6 Product Development committee. His is also the lead developer and instructor for the ISA IC32 series of courses. Prior to joining aeSolutions, John was director of cybersecurity services for Exida, and held several process automation and safety related positions with Siemens, Eastman Kodack Company, and Moore Products Co. John has a B.S. degree in Electrical and Computer Engineering from Clarkson University and holds CFSE, CISSP and GICSP certifications.

Introduction to Safety Instrumented Systems (EC50C)

There are many different ways of designing a safety instrumented system (SIS). Questions like these are being asked by users and engineering firms alike:

- Which technology should be used (electric, electronic, or programmable)?
- What level of redundancy is appropriate (single, dual, or triple)?
- How often should systems be tested (monthly, quarterly, yearly, or once per shutdown)?
- What about field devices (technology, level of redundancy, and test intervals)?

Debate continues as to how one even makes these choices (past experience, qualitative judgment, quantitative analysis, etc.). This seminar will cover the basics of what needs to be done in the design and selection of safety systems.

Instructor: Paul Gruhn



Paul Gruhn is currently the Global Functional Safety Consultant at aeSolutions. Gruhn is a member of the ISA 84 committee, co-author of the ISA textbook "*Safety Instrumented*

Systems: Design, Analysis and Justification," author of many articles, and the developer of the industry's first safety system modeling software package. He is a registered professional engineer in Texas, an ISA 84 Expert, and an ISA Fellow. He has been an ISA training instructor since 1996.

PCS 2016 Technical Program

Monday, 7 November

8:00 a.m. – 4:00 p.m.

ISA Training Offerings

Electrical Controls for the Control System Technician (TI23C)
Instructor: Thomas Stokes

Introduction to Industrial Automation Security and the ISA/IEC 62443 Standards (IC32C)
Instructor: John Cusimano

An Introduction to Safety Instrumented Systems (EC50C)
Instructor: Paul Gruhn

1:00 p.m. – 5:00 p.m.

Exhibitor Setup/Move In

Tuesday, 8 November

7:30 a.m. – 8:00 a.m.

Morning Refreshments and Speakers' Breakfast

8:00 a.m. – 9:00 a.m.

Keynote Presentation

Process Safety: Are We Getting Any Better? Recollections
On Four Decades of Experience and More
Paul Gruhn

9:00 a.m. – 10:30 a.m. | Morning Session I

Changing the World: ISA Standards

Chairperson: Nicholas Sands

The Amazing Secret World of ISA Standards
Nicholas Sands

Securing the Industrial World: ISA99 Highlights
Johan Nye

Keeping the Industrial World Safe: ISA84 Highlights
Paul Gruhn

Safety Session

Chairperson: Mike Scott

Panel Session: Safety Lifecycle Implementation Within
a Large Capital Project
E. Limper, INVISTA; L. Swindler, Maverick; M. Fraiser, Jacobs

Security Session

Chairperson: John Cusimano

Practical Approaches to Securely Integrating Business
and Production
Jim Gilsinn

Communications Session

Chairperson: Penny Chen

Implementation and Evaluation for Wireless Valve Control
Toshi Hasegawa

Upstream PMCD/ChemPID Session

Chairperson: Joe Joachim

Rejuvenation of Oil Movement Automation System
(OAS): PETRONAS Experience
Sharul A-Rashid

Flexible and Safe Architecture for FGS & ESD Offshore
Life Bases
Stefan Capitaneanu

Modernization of Turbo Machinery Control System of
Plantsite FFC-MM
Assadullah Qureshi

10:30 a.m. – 11:00 a.m.

Coffee Break and Exhibits

11:00 a.m. – 12:30 p.m. | Morning Session II

Improving Plant Efficiency Using ISA Standards

Chairperson: Nicholas Sands

Operational Excellence and Alarm Management:
ISA18 Highlights
Donald Dunn

Operator Performance and HMI Design: ISA101 Highlights
Maurice Wilkins

Operation Excellence and Procedural Automation:
ISA106 Highlights
Yaya Nazer

Safety Session

Chairperson: Mike Scott

Workshop: Burner Management Systems—How Invoking
the Safety Lifecycle Could Save \$\$ on Your Project
Mike Scott

ISA PCS 2016 Mobile App

Download the 2016 PCS app for iOS, Android, and HTML5. Its easy-to-use interactive capabilities will enhance your event experience.



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Security Session

Chairperson: John Cusimano

Ensuring Appropriate Cybersecurity During ICS Upgrades and Refreshes

Graham Speake

Stop Patching—Reduce Your Vulnerability Exposure at the Perimeter

Michael Firstenberg

Communication Session

Chairperson: Penny Chen

TBD

Analyzers PMCD/ChemPID Session

Chairperson: Joe Joachim

Analysis of Industrial Spectrum Monitoring Systems

Murat Aksu

Inline Process Measurement Versatility using a Modular Analyzer and Probe Approach

Dr. Stacey Carrie

Stay on the Ground and Stay Safe! How Automatic Tank Gauging Can Be Used to Keep Workers Off Tanks

Christopher Widahl

12:30 p.m. – 1:30 p.m.

Lunch and Exhibits

1:30 p.m. – 3:00 p.m. | Afternoon Session I

Improving Plan Performance with Smart Manufacturing: ISA Standards-Based Data Connectivity Session

Chairperson: Maurice Wilkins

Smart Plant Maintenance: ISA108 Highlights

Herman Storey

Smart Instrument Connectivity: ISA100 Highlights

Herman Storey

ISA95: The Framework for the Industrial Internet of Things (IIoT)

Chris Monchinski

Safety Session

Chairperson: Mike Scott

Practical Considerations for the Identification of Alarms as Protection Layers

N. Sands, DuPont; L. Garcia, Siemens

Major Changes to the 8th Edition of API RP 14C—Recommended Practice for Analysis, Design, Installation, and Testing of Safety Systems for Offshore Production Facilities

J. Pittman, Chevron

Security Session

Chairperson: John Cusimano

Cybersecurity Risk Assessments in the Safety Lifecycle

Harold Thomas

Communication Session

Chairperson: Penny Chen

TBD

Control Performance PMCD/ChemPID Session

Chairperson: Brad Carlberg

Control Valve Stiction Compensation—New Approach

Mohamed Hassan

Finding and Evaluating Valve Condition: A Part of Any Safe and Efficient Operation

Steven T. Obermann

Innovations in Process Modeling Facilitate Improved Control and Plant-Wide Optimization

Dr. Bob Rice

3:00 p.m. – 3:30 p.m.

Coffee Break and Exhibits

3:30 p.m. – 5:00 p.m. | Afternoon Session II

Productivity Results: Application of ISA Standards Session

Chairperson: Maurice Wilkins

Combining Standards for Operator Effectiveness

Bridget Fitzpatrick

Application of Advanced Decision Support

Maurice Wilkins

Putting the Pieces Together: How ISA95 Has Been Used to Integrate Standards

Dave Emerson

Safety Session

Chairperson: Mike Scott

Specifying the Instrumented Safeguard Response Time: How Fast is Fast Enough?

E. Roche, SIS-Tech

Contributions to Risk and Cost Reduction Through External In Situ Testing of Tuning Fork Technology

T. Ruta, R. Holmelin, and C. McIntyre, Endress+Hauser; C. Garcia, Dow

Security Session

Chairperson: John Cusimano

Eliminating Security Blind Spots in ICS Networks

Barak Perelman

Communications Session

Chairperson: Penny Chen

Radio Frequency Propagation and Impacts on ISA 100.11a Operations

Rick Candell

DCS Migration PMCD/ChemPID Session

Chairperson: Joe Joachim

Large Project Execution—A Better Way
Lee Swindler

Modernize and Future-Proof Systems with Standards-Based Design
Rick Slaughaupt

A Look at Early Planning Process Best Practices for Plant Automation Modernization Projects
Munchoong (MC) Chow

5:00 p.m.

Address from Chair

Industry/Tech Night Reception

Wednesday, 9 November

7:30 a.m. – 8:00 a.m.

Morning Refreshments and Speakers' Breakfast

8:00 a.m. – 9:00 a.m.

Keynote Presentation

Inspiring and Recruiting Engineers into the 21st Century
Bonnie J. Dunbar

9:00 a.m. – 10:30 a.m. | Morning Session I

Educational Session

Chairperson: Kelvin Ericson

TBD

Safety Session

Chairperson: Mike Scott

Safety Instrumented Systems Open Discussion/Q&A
Moderator: P. Gruhn, aeSolutions

Security Session

Chairperson: John Cusimano

TBD

Communications Session

Chairperson: Penny Chen

TBD

Operational Excellence with Human Machine Interface PMCD/ChemPID Session

Chairperson: Nicholas Sands

TBD
Steve Apple

New Approaches to Navigating the Operating Envelope
Bridget Fitzpatrick

Overcoming Objections to High Performance HMI Migration
Bill Hollifield

10:30 a.m. – 11:00 a.m.

Coffee Break and Exhibits

11:00 a.m. – 12:30 p.m. | Morning Session II

Educational Session

Chairperson: Kelvin Ericson

TBD

Safety Session

Chairperson: Mike Scott

How Faith in a SIS Led to a \$3 Billion Incident
A. Summers, SIS-Tech

Hollow Ball Valves in Process Service Revealed in Accident Investigation
Q. Baker, Baker Risk

Security Session

Chairperson: John Cusimano

Non-Intrusive and ICS-Tailored Virus and Malware Protection
Siv Hilde Houmb

Communications Session

Chairperson: Penny Chen

TBD

Operational Excellence with Alarm Management PMCD/ChemPID Session

Chairperson: Nicholas Sands

TBD
Michale Sheidaei

Alarm Management Meets SIS
Darwin Logerot

Alarm Classification
Todd Stauffer

12:30 p.m. – 1:30 p.m.

Lunch and Exhibits

1:30 p.m. – 3:00 p.m. | Afternoon Session I

Student Session

Chairperson: Randy Buchanan

TBD

Safety Session

Chairperson: Mike Scott

Workshop: What Does the Future Look Like for Performance-Based Fire & Gas Engineering?
K. Mitchell, Kenexis

Security Session

Chairperson: John Cusimano

Militarily Strategic Targets and How to Avoid
Creating One
Michael Firstenberg

Communications Session

Chairperson: Penny Chen

TBD

Control Primer: Control Strategies PMCD/ChemPID Session

Chairperson: Nicholas Sands

Control Strategies to Improve Process Capacity and
Efficiency
Greg McMillan

3:00 p.m. – 3:30 p.m.

Coffee Break and Exhibits

3:30 p.m. – 5:00 p.m. | Afternoon Session II

Student Session

Chairperson: Randy Buchanan

TBD

Safety Session

Chairperson: Mike Scott

Workshop: Practical Confidence Methods for Safety
Instrumented System Performance Assessment
S. Thomas, Chevron

Security Session

Chairperson: John Cusimano

TBD

Communications Session

Chairperson: Penny Chen

TBD

Control Strategy Application PMCD/ChemPID Session

Chairperson: Nicholas Sands

Enhanced Cascade Level—Flow Control
Luis Chacon

Dual Valve Strategy for High Precision Flow Control
John McIlwain

Control Performance: An Imperative for Safety
George Buckbee

5:00 p.m.

Address from Chair

**Evening Reception/YAPFest—A Networking Opportunity for
Students and Young Automation Professionals**

Thursday, 10 November

7:30 a.m. – 8:00 a.m.

Morning Refreshments and Speakers' Breakfast

8:00 a.m. – 9:00 a.m.

Keynote Presentation

Safe and Secure? The State of Industrial Cybersecurity
Steve Mustard

9:00 a.m. – 10:30 a.m. | Morning Session I

Safety Session

Chairperson: Mike Scott

SIS Identification and Design Guideline Development
at Williams
J. Kennedy, Williams

Automated SIS Validation—Benefits and a Practical
Approach to Implementation
J. Miller, Schneider Electric; N. Muthiah, Wood Group

Security Session

Chairperson: John Cusimano

TBD

Operational Excellence with Simulation PMCD/ChemPID Session

Chairperson: Fares Karadsheh

Integrating Advanced Simulation with Process
Automation Control System
Kash Behdian

Dynamic Simulation for Safety
Julie White

Collaboration of Data and Process for Refinery Offsite
Operations
Dr. Suresh Agrawal

10:30 a.m. – 11:00 a.m.

Coffee Break and Exhibits

11:00 a.m. – 12:30 p.m. | Morning Session II

Safety Session

Chairperson: Mike Scott

Workshop: Taking Ownership of The Fire and Gas
System (FGS) While Reducing Cost and Increasing
Safety—A Practical Approach to F&G Design
J. McNay, Micropak

Security Session

Chairperson: John Cusimano

TBD

Operational Excellence with Model Predictive Control PMCD/ChemPID Session

Chairperson: Fares Karadsheh

Recent Advances in MVC Technology

Katherine Persac

Model-Free Adaptive (MFA) Control for Industrial Flares and pH Processes to Comply with EPA Regulations

Dr. George Cheng

Steam Generator Process Modelling and Process Automation Dynamic Simulator Development Using Matlab Simulink

Ikhtiander

12:30 p.m. – 1:30 p.m.

Lunch and Exhibits

1:30 p.m. – 3:00 p.m. | Afternoon Session I

Safety Session

Chairperson: Mike Scott

How Important is Realistic Failure Rates for Safety Instrumented Functions?

L. Steward, Exida

Advanced Diagnostic Coverage to Extend Proof Test Intervals

T. Wyatt, E. Mathiason, A. Coleman, Emerson

Security Session

Chairperson: John Cusimano

TBD

DCS Migration PMCD/ChemPID Session

Chairperson: Fares Karadsheh

A New Paradigm for Control System Migrations

David Finlay

Upgrade Refinery DCS to Experion

Mohamed Ashraf Alsayed

Successful MOD5 DCS Migration to Honeywell

Experion PKS

Michael Martin

3:00 p.m. – 3:30 p.m.

Coffee Break

3:30 p.m. – 5:00 p.m. | Afternoon Session II

Safety Session

Chairperson: Mike Scott

Panel Session: Implementation of the Safety Lifecycle in the Real World—What's Working and What's Not

*D. Bennet, P66; M. Thompson, Koch; A. Desphande, Total;
S. Mourier, Dow*

Security Session

Chairperson: John Cusimano

TBD

Student Session

Chairperson: Randy Buchanan

TBD

Calibration PMCD/ChemPID Session

Chairperson: Fares Karadsheh

Calibration Management in Tough Economic Times

Ashok Acharya

Understanding Variability for Instrument Calibration

Eric Webb

Testing In-situ Coriolis Meter Verification Technology— "Detecting Corrosion and Erosion"

Eric Harman, CEESI; Tom O'Banion, Emerson

5:00 p.m.

Closing Remarks
