FEDERAL UTILITY PARTNERSHIP WORKING GROUP SEMINAR

November 15-16, 2017
Ontario, California

Cybersecurity – Providing Secure Access to Operational Data while Protecting Industrial Control Networks

Hosted by:

FEMP
Federal Energy Management Program

Southern California Edison
OSIsoft - We believe **People with Data can Transform their World**

“Data is valuable. The more data you have, the more value you have.”
Dr. Patrick Kennedy, Founder OSIsoft

“OSIsoft and the PI System exist to make you smarter, enabling better decisions and improved operational and reliability excellence.”
Christopher J Crosby, Principal Advisor, OSIsoft

“OSIsoft delivers the information infrastructure for the operating world.”
David Mount, Partner KPC&B and Former OSIsoft Board Member
About OSIsoft

Founded in 1980

15,000+ Installations, 4,000+ Customers in 123 Countries

World-Class Customer Support

Privately Held Company

Global Presence, 27 Offices Worldwide

Power & Utilities
Oil & Gas
Chemical/Petro
Metals & Mining
Pulp & Paper
Pharma, Life Sciences

Datacenters/Facilities
Discrete/Food & Bev
Transportation

"Pathfinders" Over 20% of Revenue in R&D

1,300 Employees

65% of Global 500 Process & Manufacturing

Makers of 1 Solution Infrastructure:
The PI System Commercially Off-the-Shelf (COTS)

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An Infrastructure for Digital Transformation

OSIsoft Cloud Services

OSIsoft Marketplace

SAP
Sas
Amazon Web Services
ABB Ability

Microsoft Azure
IBM Watson

Google Cloud Platform

Preix
MindSphere

Connected Services

PI Integrators

OEM PI

PI Connectors & Interfaces

SMART MACHINES

SMART DEVICES

OSIsoft Cloud Services

OSIsoft Marketplace

SAP
Sas
Amazon Web Services
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Microsoft Azure
IBM Watson

Google Cloud Platform

Preix
MindSphere

Connected Services

PI Integrators

OEM PI

PI Connectors & Interfaces

SMART MACHINES

SMART DEVICES

Sensors
Actuators
Intelligent Motor Control
Controllers
Terminals

Empowering Business in Real-Time.

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Nuclear Industry Cybersecurity Program Development

Regulations and Standards

- 10CFR73.54 -- “Protection of digital computer and communication systems and networks”
- NRC Reg. Guide 5.71 -- “Cyber security programs for nuclear facilities”
- NIST 800-53 -- “Recommended security controls for federal information systems”
- NIST 800-82 -- “Industrial control system security”
- DHS Control Systems Security Program -- “Secure architecture design”
- NEI 08-09 -- “Cyber security plan for nuclear power reactors”
- NERC Critical Infrastructure Protection

Collaboration and Cooperation – Regulators and Industry

- NRC – Regulator
- NEI – Industry Group
- NITSL – Nuclear Information Technology Strategic Leadership
- Nuclear Licensees

Empowering Business in Real-Time.
Nuclear Industry Cybersecurity Program Development

Mission Assurance (DIACAP) → Risk Management Framework (RMF)

DoD

NRC/NEI

NIST

DHS

Information Security (800 Series Pubs)

Infrastructure Protection

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Exelon Nuclear Advanced Performance Monitoring

Exelon Nuclear Fleet
- Wireless Sensors
- Wired Sensors
- PDM Database
- Chemistry Data
- Transformer Data

PI System
- Plant IQ Tech Exam
- On-Line Monitoring Analytical Tool
- Other Testing Data (Surveillance, Electrical Testing, etc)

Remaining Useful Life Advisor
Diagnostic Advisor
Asset Fault Signature
System Performance Monitoring Plans
Exelon Nuclear Architecture
Unidirectional Security Gateways

- Hardware-enforced security
- Laser in TX, photocell in RX, fibre-optic cable – you can send data out, but *nothing* can get back in to protected network
- TX uses 2-way protocols to gather data from protected/industrial network
- RX uses 2-way protocols to publish data to external/corporate network
A regionally centralized, cyber secure monitoring and control system that analyzes building energy and utility data to generate actionable information or automatically adjust energy usage.
Navy’s Smart Grid Program will deploy and sustain smart grids at all nine regionally-based locations.
Challenges and Lessons Learned – Andy Knox

• Cyber security – diverse control system accreditation
• Connection and integration of advanced metering infrastructure, building and utility control systems enables broader visibility
• Centralized analytic capability with actionable information accessible at field level
• Operations requiring coordination across traditional work units
Success Factors in the Transfer of Commercial Cybersecurity Experience to Defense

• Leverage COTS (ATO expected before end of year)
• Leverage Commercial sector experience and industry investment (nuclear industry alone estimated at $1B over last six years)
• Involve NEC (Federal IT folks) early
• Find Operational Technology (OT) experience with deep expertise in IT systems and networking technology
• Understand RMF process (lifecycle management, establish and maintain a ‘process’ - not a ‘project’)

Federal Utility Partnership Working Group
November 15-16, 2017 Ontario, CA
Please wait for the microphone before asking your questions

State your name & organization

Chris Crosby, Principal Advisor, Business Transformation
ccrosby@osisoft.com
Cell +1-843-323-2570
OSIsoft, LLC