Emerging Technologies

The very nature of Plant Automation and Decision Support is changing rapidly as a variety of emerging technologies are making their way into the petrochemical and refining landscape. Early implementations are showing promise in adding substantial value. At the same time, a foundation is being poured for a new operating philosophy that takes measured advantage of these technologies rather than using risk avoidance as an excuse to stand still. These environments are bringing excitement back into the industry and giving impetus to a renewed interest from college graduates to look for employment in the petrochemical and refining sectors.

We are inviting speakers who can articulate vision and implementation experiences around such emerging technologies as:

- Wireless
- 3D Internet
- Virtualization
- Early Event Detection
- Web Services Deployment
- Transition Management
- Procedural Automation
- Service Oriented Architecture (SOA)
- Work Process Automation

Basic Building Blocks: Supply Chain, Planning, and Business Optimization

Business supply chains, production planning, and overall optimization of businesses are taking a paradigm shift. With new technologies evolving, more real-time data is available to make real-time business decisions. The source of this real-time data is through automation within operating plants. New strategies in this arena are making great improvements to the business bottom line.

This session will have papers dealing with techniques and success stories relating to supply chain, planning, and business optimization. We are inviting speakers who can articulate vision and implementation experiences around:

- Latest production planning practices
- Advanced techniques to master supply network planning
- Profitably balancing supply and demand
- Leveraging S&OP to improve supply and demand planning
- Predicting inventory levels within supply chains
- Sales forecasting to achieve world-class sales and operations planning

Best Practices in Asset Reliability, Performance Management, and Portfolio Optimization

The term "best practices", while somewhat overused, can be useful in applied in areas such as asset reliability, asset performance management, and asset portfolio optimization. What works in one facility could work in another.

This session will have papers dealing with case studies and success stories dealing with best practices in the areas including equipment reliability and performance management, unit and plant performance comparative assessment and benchmarking, and enterprise asset portfolio management and optimization. This section will include such topics as:
- Conditioned Base Maintenance (CBM)
- Operations equipment effectiveness (OEE)
- Asset performance management including altering and notification
- Proactive and predictive maintenance
- Strategic supplier integration for asset monitoring and support
- Supply/value chain management and optimization

NPRA Plant Automation and Decision Support
Call for Papers

Business Integration and Intelligence (BII)

Business integration and business intelligence are common place in today's topics of interest in many refining and petrochemicals companies. However, never before has there been more technological opportunities that can enable a significant step change in performance and sustainability. Many leading edge NPRA member companies are leveraging these opportunities to fundamentally alter how they integrate their business, enable business intelligence, and support improved safely, performance, and profitability.

This session will have papers dealing with case studies and success stories dealing with the application of:

- The progress and status interface and integration standards (OPC, OPC UA, MESA, Microsoft Reference Architecture for O&G)
- The role of cloud computing in business integration and business intelligence
- Social networking and collaboration
- Data abstraction and
- Leverage of web based tools and technology in business integration and business intelligence
- Security and other considerations in designing and managing business integration and business intelligence capability

Environmental Regulation, Challenges & Response

Plant automation and optimization are subject to regulations. In recent years, there have been regulations and legislation that affect the refining industry and, thus, have an impact on plant automation.

This session will focus on what those in plant automation need to know about environmental regulation. We are interested in papers that discuss environment issues, including:
- Cap & Trade
- Climate Change
- New Environmental Regulations
- Biofuels Requirements
- New Source Review
- MACT

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Industrial Control Systems (ICS) Security

The line between ICS and IT is blurring as more ICS systems become open systems. This is a two-edged sword for business. Not too long ago, no one had heard of Stuxnet. Now it is a part of everyone's lexicon in ICS. While there are areas of ICS security that are the same as IT security, there are many differences.

This session will focus on what those in plant automation need to know about ICS security. We are interested in papers that discuss ICS security, including:

- Responding and analyzing control systems related incidents
- Conducting vulnerability and malware analysis
- Lessons learned from Stuxnet
- Training of operators, engineers, security personnel on ICS issues
- Making the case for ICS security to management
- ICS issues in other critical infrastructure industries
- Practical approach to implementing an effective cyber risk mitigation program